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THEOLOGICAL EXPLANATION - REDUNDANT OR INDISPENSABLE? ON MODERN SCIENCE, REDUCTIONISM AND CONJUNCTIVE INTERPRETATION

Piotr Roszak*

Nicolaus Copernicus University in Toruń, ul. Gagarina 37, Toruń, 87-100, Poland

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Abstract

This article tries to address the following questions related to NOMA (Non Overlapping MAgisteria): Is the appeal to theological reasons, such as divine causation, acceptable in scientific explanations, and what does it yield? If there is no causal joint between God and the natural world, is divine causation unnecessary and irrelevant in scientific explanations? Finally, what is the nature of the explanations proposed by Theology? To answer these questions and clarify the meaning of theological explanation, this paper will first present different approaches to explanation in Science and Theology (1). It will then explore the areas where science is receptive to and incorporates theological explanations (2). The paper will conclude with the examination of whether this integration is merely an 'addition' or an essential element that overthrows the naturalistic perspective (3).

Keywords: Science and religion, Thomism, causality, reductionism, naturalism

1. Introduction

Many scholars have attempted in recent times to categorise the interplay between religion and Science, but much attention is now being paid not to the 'dialogue' between the two but to a consideration of what is after Science and religion. Should the model of Science and religion as two independent entities with their own methodologies and languages be a dominant one? Is the interaction between them possible?

This perspective is a consequence, as some scholars maintain, of the belief that there are two parallel types of explanation that do not have to take into account each other, and one of them simply has to decide which one is essential (e.g. scientific) and in this way it makes the other simply irrelevant or merely additional. However, this idea formulated by Stephen J. Gould [1] and defined as NOMA (**N**on **O**verlapping **MA**gisteria), is not about a radical separation, but

*E-mail: piotrroszak@umk.pl

about distinguishing between these two bodies of knowledge, just as in the Middle Ages a distinction was made between being the cause of being and that of motion.

Before we begin our analyses, however, it is worth briefly defining the concept of Science and Theology. The understanding of Science has undergone significant transformation in the modern era. The ancient and medieval approaches were characterized by their reliance on Aristotle, who associated Science with causal and therefore essential and universal explanation. Science in the classical sense seeks logical and rational evidence without focusing on the contingency of Nature - in contrast to the modern ideal, which follows an inductive paradigm, relying on experience and probabilistic explanation. With empiricism, the synonym of 'science' began to shift from the Humanities towards the Natural sciences in an effort to combine correlations and particularistic explanations. At the same time, Theology as a rational interpretation of Revelation, which is a truth that transcends reason (but is not incompatible with it), remained faithful to the old ideal and language, rooted in classical Metaphysics. The dispute that determined the different forms of pursuing Theology concerned the method of predication, that is, whether it should be univocal or equivocal. Not surprisingly, this divergence of methodological perspectives at the dawn of the modern era contributed to a change in the treatment of previous relationships, causing perturbations in many cases. In what follows, we adopt an understanding of both Science and Theology in the horizon of the modern theoretical paradigm.

However, this raises a number of questions. Is the appeal to theological reasons, such as divine causation, acceptable in scientific explanations, and what does it yield? If there is no causal joint between God and the natural world, is divine causation unnecessary and irrelevant in scientific explanations? Finally, what is the nature of the explanations proposed by Theology?

To address these questions and clarify the meaning of theological explanation, this article will first present different approaches to explanation in Science and Theology (1). It will then explore the areas where Science is receptive to and incorporates theological explanations (2). The paper will conclude with the examination of whether this integration is merely an 'addition' or an essential element that overthrows the naturalistic perspective.

2. Types of explanation in Science and Theology

What, then, is the likely nature of theological explanation for contemporary science? Does it serve as a rival explanation, describing separate domains, or is it necessary to include both in order to obtain a comprehensive understanding of a complex world? Before addressing these questions and exploring proposed frameworks for integrating these explanations, it is worth considering briefly the concept of 'explanation' itself. This term 'explanation' involves identifying the fundamental 'independent laws' of reality by reducing a set of underlying assumptions. However, this understanding goes beyond the

mere application of formal rules to input information, because it requires to have in mind its purpose or goal, i.e. to know why-something is, it is an important part of explaining reality, not only how it functions. Besides, explanation involves formalizability rather than just regularity: explanation does not consist in mere observation of repeated facts (as in the Humean tradition where natural laws are inferred from lifelong observations of specific cases), but on discovering rules that are 'acting' in reality and are more than statistical correlations.

With these assumptions established, let us now examine some proposals for comprehending the interrelation between theological and scientific explanations.

2.1. Explanation/understanding

It is interesting to explore the interplay between the two explanations by examining the distinction that John Polkinghorne highlighted between *explanation* and *understanding* [2]. We can effectively explain various theories that we may not fully understand, as is the case with Quantum theory, for example that we know is effective in explaining phenomena in our world. As Polkinghorne states, "[i]t is possible for understanding to be attained without the possession of a detailed explanation" [3].

This stems from the conviction that understanding the world as such involves questions that Science alone cannot fully answer (as it provides only theory about the worlds), and therefore has no single definitive solution, but requires an ongoing pursuit of the best possible explanation, as Thomas Aquinas already assumed in *Summa Theologiae* when writing about astronomical theories (see ST I, q.32, a.1 ad 2). As once again, Polkinghorne highlights, "Physics needs Metaphysics for its intellectually satisfying completion" [4].

The possibility of explanation is grounded in the belief in the comprehensibility of the world. Religion, in turn, provides an answer to the question of why this intelligibility exists. It is important to note that while explanations are offered, they do not constitute a 'proof', and the truth of religious explanations cannot be empirically demonstrated. However, it can be argued that theism provides the best explanation for the world as described by Science.

The question of 'why', often attributed to the domain of religion, is linked to the idea that, for instance, according to Thomas Aquinas, explaining something meant pointing to its purpose. One can, as Simon Oliver suggests, explain the heart as the corporeal organ responsible for blood distribution in the body, highlighting its purposiveness [5]. Alternatively, one can describe it as an electrical activity generating mechanical contractions, emphasizing its functionality. Purposiveness extends beyond immediate explanations and encompasses ultimate purposes.

The emphasis on the 'goal' as explanatory resource can be illustrated by an image of construction work in a city, such as the reconstruction of an intersection with trams, cars and pedestrian walkways. To a casual observer, it

may appear chaotic, with various activities happening simultaneously - people are digging, dismantling and working on the sewage system. However, the purpose behind these activities is not immediately apparent; it lies in the transcendent undertaking of reconstructing the intersection. While individual activities can be explained, understanding the purpose requires a higher level of comprehension. In this model, Theology justifies the ultimate goal without replacing specific goals, but rather integrating them.

2.2. Experiential/experimental

In order to grasp the difference between scientific practice and theological argumentation, it is necessary to take into account also testimonial, personal experience, where an 'authority' emerges, and another type of explanation based on the repetition of phenomena, which can be falsified [6]. This distinction is connected to the nature of the objects being apprehended. Testimonial explanations pertain to unique phenomena that are recounted through personal narratives, such as the experience of a one-off historical event. On the other hand, scientific explanations involve the identification of fixed laws based on observed patterns, measured data, or experimental evidence.

Nieminen et al. note that religion presents evidence to validate beliefs, often communicated through narratives. It begins with eyewitness testimonies, which are then passed down as traditions and serve as the basis for further argumentation. Personalized narratives become testimonies that confirm the truthfulness of theological claims. For example, the author uses the analogy of footprints in the snow, likely made by a red fox. While the absence of an observer allows the scientific method to deduce the likely source of the footprints, in the case of theological explanations, testimonies of encounters with the Risen Christ hold significant argumentative value. Belief based on testimony and participation in it, as the Apostles did with Jesus, is a valid approach in Theology. However, it is not arbitrary; testimonies are examined for credibility through independent sources, following hermeneutical rules for tradition transmission, coherence and criteria of embarrassment.

Sometimes, experiential information can be perceived as more reliable than statistical data by the audience. The trust placed in what a particular scientific study conveys about the experiences passed down in tradition may outweigh statistical evidence. For instance, a photograph from an expedition or a conversation with a participant can be more convincing. In such cases, it is essential to consider the nature of evidence in religion and the purpose of theological reflection, which seeks to provide an interpretative framework through which experiences gain meaning. For example, a healing, which can be explained medically, might be interpreted as God's call for a life change, leading to conversion. Integrating these two modes of explanation may pose challenges, but it does not render them redundant. Religion faces the task of how to account for and incorporate empirical data into the belief system, akin to Saint

Augustine's concept of 'plundering the Egyptians', incorporating scientific achievements into faith.

Experience can also play a role in shaping scientific research agendas. Nieminen offers examples such as the Milwaukee Protocol, which was based on the experience of a single patient, or the study of diverse experiences described by many people in alternative medicine. Therefore, experiential explanations are not exclusive to religious contexts. Paying attention to testimonies can offer an interesting perspective in discussions with ignostic tendencies or igtheism, which argue that talking about God is meaningless due to a lack of conceptual apparatus.

Aku Visala also highlights the difference between religious and scientific explanations, noting that "religious beliefs about non-natural agents are considered difference-makers with respect to morally and survival-enhancing salient events" [7]. Religious explanations have practical relevance and deal with 'minor facts' that occur in life, complementing natural explanations. While it is easy to explain being infected by a virus in a certain place, explaining why someone sat there and not somewhere else is more challenging. This implies an openness to 'explanatory psychology' and recognizes the basic human inclination to seek meaning in events, whether for controlling nature or in response to a narrow naturalistic perspective.

2.3. Sufficient reason - modern shift

Medieval reflections, initially inspired by the thought of Aristotle, drew attention, as McMullin noted, to his distinction between two types of demonstrations: *quia* and *propter quid* [8]. While the latter is concerned with causality, the demonstration *quia* aims to prove convertibility, demonstrating that God is the only possible explanation for the effects in question and asserting the necessity of this claim beyond a mere plausible hypothesis. However, this differs from modern abduction, and the distinction lies in the status of what underlies the entire process, although both involve causal explanation. This led to the discovery of 'nature' and its meaning and the emphasis on concreteness (*quidditas)* that appears in the thought of John Duns Scotus [9]. Later nominalism, with its principle of economy of thought, commonly referred to as 'Ockham's razor', became a precursor to the principle of explanation, which became linked to the modern practice of Science [10].

This gives rise to a modern form of reductionism that seeks the 'best' hierarchical rationale, identifying the necessary conditions for something to occur and attributing causality to a specific phenomenon. The principle of 'sufficient reason', focusing on the cause that produces the most significant effect, sets a different trajectory for the practice of Science compared to the previous emphasis on seeking general laws. Metaphorically speaking, there has been a process of 'de-hermetization' of the cognition of reality (like an aircraft that is no longer airtight), separating causes and focusing on one of them (usually the efficient cause), while theological thinking remains in the position

of pointing to all 'causes'. Aku Visala highlights the differences between these two positions, suggesting that it is difficult to consider 'oxygen' as the cause of a bank robbery, although without it, the robbery would not have had a chance to succeed [7, p. 54]. The search for a sufficient reason will instead focus on the nexus of causes that lead to the robbery, rather than what enables it or provides an explanation for it. Perhaps, in the face of Ockham's razor, as Robert Spaemann wrote [11], it is best to apply the 'Bach key', which concealed a theological message in the musical score, without obscuring the beauty of the music itself but expressing itself through it. Similarly, one could demonstrate how DNA overwrites certain data on the same 'ingredients', using Bancewicz's metaphor of a book with three stories written on the same page, each starting with a new line but integrating the previous story. As a result, we can read three stories with the same order of letters. As Bancewicz observed: "… just imagine that in order to solve a paper crisis a resourceful author decides to write a book that contains three separate stories. Each page of the book contains a long stream of letters with no space in between. The first story begins with the first letter on the first page, and the beginning of each new word is marked with a dot above the first letter of the word. The second story also begins on page one, a few lines down from the start of the first story. The beginning of each word is marked with an asterisk, and the words overlap with - but are completely different to - the words of the first story. The third story begins a little further on, marked with a different icon." [12]

Nevertheless, Science relying on Leibniz's principle of sufficient reason results in the emergence of strong reductionism in the realm of reflecting on science, exclusively focusing on what contributes to change or movement in the final phase. Aristotle's isolation of this factor from the group of other causes is significant in this regard. However, it does not mean excluding the other factors but rather denying their value in the process of knowledge. This, in turn, has consequences for understanding the relationship between Science and religion.

2.4. Local/general

It is worth noting that the principle of sufficient reason, which focuses on explaining concrete phenomena, inevitably leads to a narrowing of the explanatory scope. This shows that modern science is more interested in detailed and particular explanations rather than general explanations. Thus, Science aims to explain on a local level, relying on causes that are closest to empirical processes, while the justifications of religious explanations focus on general (universal) level that affects the operation of particular causes.

In this context, it is clear that Science does not offer an exhaustive explanation but is limited to the interaction of secondary causes. At the same time, Science is beginning to realize that the Aristotelian model, where *scientia* is understood as necessary cognition, no longer finds understanding among contemporaries who are increasingly aware of the limitations of the method [13].

Such an approach finds expression in the belief that there is a relationship between Science and religion similar to that between local and global explanations. Some authors base this on approaches present in physics or mathematics [14]. This could correspond to the distinction introduced by Caterina Marchionni between micro and macro explanations, which respectively consider the object in isolation from others or take into account their social position [15]. Another concept proposed by her is 'strong complementarity', which emphasizes the presence of both perspectives, which seems to be relevant to our considerations.

3. Methodological vs. ontological naturalism

Having outlined the various forms of explanation and proofs that have emerged between Science and religion over the centuries, it is worth asking: does the distinctiveness of these methods, its irreducibility, not lead to what is now called 'methodological naturalism'? Since there are different explanations, and God is not considered one of the physical causes in this world, as a sufficient reason exclusive of other explanations, is such a ontological naturalism that ignores God acceptable? The answer points out the difference with metaphysical naturalism, which excludes the existence of the supernatural not only from reflection but also from reality. The former, methodological naturalism, which respects the distinctiveness of methods, does not necessarily imply the latter.

However, this initial stage of preserving the distinction between the two mentioned naturalisms raises further questions relevant to the second stage. Does the mere fact that the two ways of approaching reality are *distinct but not mixed* also imply a lack of radical separation, as in the Chalcedonian formula? It seems that methodological naturalism, while rightly portraying God as an analogous cause rather than one among many in this world, has led to questioning the meaningfulness of theological explanations by reducing them to a subjective hermeneutic choice or simply interpretations of data. Methodological naturalism cannot claim that God is completely superfluous in explanation, as if Science were a self-founded claim. Rather, God's involvement is seen as another dimension of divine action without which the existence of science would be impossible [16].

Over time, the postulate of methodological naturalism as the only way of conducting Science has begun to be questioned [17]. It fails to consider why and what makes a sufficient rationale explainable in the first place, following the tradition of sufficient reason. Harrison compares the use of methodological naturalism to blinders (or: eye-flaps) on a racehorse: they enable the horse to focus on the race and exert more strength, but it cannot be claimed that there is no other reality or that these heuristics have universal applicability [18].

4. Does Science need theological explanations?

Having articulated the differences in how scientific and theological cognition is explained, it is worth considering why an openness to these explanations, in contrast to the reductionist framing of contemporary science, might be useful. As we have already noted, some proponents of NOMA argue that theological explanation is 'additive' and unaffected by scientific claims. However, this does not necessarily imply separation but rather signifies a different mode of predication, particularly emphasizing that God is not synonymous with the created world. By acknowledging two orders, the physical and the ontological, it is acknowledged that both pertain to the same reality, albeit from different perspectives.

4.1. 'Thick' and 'thin' science

Although there is an emerging conviction within modern science that any religious claims are meaningless (as Wittgenstein maintained by seeing language as merely a manifestation of the existential attitudes towards reality as a whole, at most a 'language game'), for the vast majority of scientists belief in God appears not so much as an explanation 'alongside' the scientific one, but as a foundational one, above all as sense-making. This is perfectly summed up in the words of Richard Swinburne: "I am not postulating a 'God of the gaps', a god merely to explain the things which Science has not yet explained. I am postulating a God to explain what science explains; I do not deny that Science explains, but I postulate God to explain why Science explains. The very success of Science in showing us how deeply orderly the natural world is provides strong grounds for believing that there is an even deeper cause of that order." [19]

The complete understanding of reality, however, encompasses not only the answer to the question of 'how', but also to the question of 'why', especially when the 'why' extends beyond the immediate scientific context. It opens up an exploration of the 'conditions of possibility' for Science itself. If Science aims to be receptive to the entirety of reality, it requires something that transcends the limitations of its own methodology. Reductionism, in this regard, is limiting, akin to describing a three-dimensional object in two dimensions (it would be a kind of Plato's 'flat cave) [20]. Therefore, to comprehend the necessity of theological discourse, it is crucial to move away from a specific understanding of science that is based on the notion of an ever-expanding and all-encompassing body of knowledge, as scientism tends to promote. Instead, one must recognize its inherently human nature, shaped by the consideration of various non-scientific factors.

In this context, the concept of 'thick' and 'thin' science becomes relevant, where 'thick description' entails broader explanations rather than just immediate ones. Kaiser distinguishes between these two approaches: a 'thick description' considers the broader context and the range of theories that enable the understanding of phenomena, while a 'thin description' reduces Science to mere

facts. As Kaiser observed: "limiting 'science' to its cognitive dimensions (a set of ideas or theories or methods) is a relatively thin abstraction. If Science is viewed abstractly, all kinds of problems naturally arise for the dialogue with Theology (also viewed abstractly) - different views of Creation, different approaches to human nature, different epistemologies. These are certainly important problems, and they deserve all the attention that they get in current discussions. But a thicker view of Science will engage theological endeavour more directly. Apparent tensions between the two disciplines can be viewed in a more positive light when they are seen to result from questions and paradoxes in the description of Science's foundations. Then theological endeavour is part of a thicker description, leading to a broader rationality that makes more sense out of scientific endeavour itself." [21]

Such arguments are heuristic and must be corroborated by other lines of investigation. Therefore, Kaiser offers a three levels explanation of reality: Level 1: an argument for the existence of something from features of the natural world; Level 2: an argument that posits the existence of something, in order to achieve completeness and consistency; Level 3: an argument that draws tentative implications from the results of a Level-2 argument.

However, the adoption of such an approach may face challenges in terms of acceptance of a strictly hierarchical view of explanation, as cautioned by Tom McLeish [22]. The notion of a 'layer-cake' model, consisting of multiple reductive levels, as proposed by Oppenheim and Putnam [23], poses problems, particularly in relation to Jaegwon Kim's causal exclusion argument [24], which aims to remove causal over determination through reduction to lower levels. The T/M/P (Theological/Mental/Physical) levels of description - made possible by emergence - highlight that not all aspects are causally reducible to the micro level.

While the distinction between these two modalities is necessary as a starting point, it is not a final end. The next step should be an integration which is not perceived as the fusion as it is in the case of two separate entities or cultures. Rather, it resembles Maxwell's integration of electric and magnetic forces. This integration is beneficial for both parts. John Polkinghorne expresses a similar sentiment: "Religion without Science is confined; it fails to be completely open to reality. Science without religion is incomplete; it fails to attain the deepest possible understanding." [3, p. 97]

In this context, the Thomistic distinction regarding the nature of God's relationship with the world becomes pertinent. It is not purely conceptual or real, but rather a 'mixed relation' (following the metaphysical terminology). It is not 'real', because the world does not change God, but God changes and influences the world. Besides, this unidirectional relationship suggests that God, as an analogical cause, is not one among many causes within the world. But this does not mean that is unnecessary. Thomas Aquinas illustrated this point with the metaphor of the Sun**,** through which everything can be seen and it is not a habitual object of vision.

4.2. Presuppositions of Science

In addition to models that treat Theology and Science as separate discourses, there is another perspective that recognizes the role of Theology within the foundation of scientific inquiry. In this context, Theology supports scientific development by highlighting the presuppositions inherent in Science. As a human endeavour, Science is built upon a series of presuppositions, ranging from ontological to epistemological to ethical aspects, as explained by Mariano Artigas [25]. These presuppositions include the existence of a real world independent of our minds, the possibility of acquiring adequate knowledge about this world, and if the world is understood as a creation of God-Logos, the assumption of the existence of laws. Ethical presuppositions also shape Science, emphasizing the value of dedicating time and effort to it and practicing it with honesty, precision, and responsibility, as its results can serve various purposes. Elon Musk's recent call for a temporary 'break' in AI research serves as a reminder of the ethical dimension involved, particularly in light of reports of AI attempts to attack a drone builder during military tests in the USA.

Integration is not sought merely at the level of results or the body of knowledge, but at the foundational level that enables Science itself. Christopher Kaiser proposes the metaphor of 'tunnels' instead of bridges to illustrate the deep theological reference already present within the sciences, not outside Science: "Science and Theology are not connected by building bridges, but by digging a deep network of tunnels" [21, p. 208]. Science is no longer seen as a mere collection of ideas, but as a human endeavour that depends on four conditions: a specific type of universe (or multiverse), a distinct form of intelligence (SFI), a historically conditioned cultural belief system (SFB), and an industrial infrastructure (SFSS) [21, p. 228].

In this context, the role of Theology serves as a reminder of the fundamental transcendence of human knowledge and an attempt to grasp the very possibility of science itself. Connecting Science and Theology is perhaps an effort to achieve a holistic interpretation using the principle of retroduction, as proposed by Ernan McMullin [8]. The goal is to develop an explanatory theory that starts with perceptual analyses, examines anomalies, tests consequences and employs induction, deduction and abduction to delve into the core of understanding. "We are 'led backwards' from effect to cause, and arrive at an affirmation, not simply a conjecture. Retroduction in this sense is more than abduction. It is not simply the initial plausible guess. It is a continuing process that begins with the first regularity to be explained or anomaly to be explained away. It includes the initial abduction and the implicit estimate of plausibility this requires. It includes the drawing of consequences, and the evaluation of the match between those and the observed data, old or acquired in the light of the hypothesis. […] The product of retroduction is theory or causal explanation. It is distinct from empirical law, the product of the simpler procedure of induction […]." [8]

Discovering things as they are, does not bring to a rigid determinism. Instead, it signifies an awakening from the Kantian dream that separated faith from knowledge, highlighting that deterministic naturalism, which excludes the interaction of God and human freedom, is nothing more than an illusion. Anthony Flew's way towards believing in God through contemporary scientific knowledge is particularly intriguing in this context. The intelligibility of the universe does not necessitate determinism, and the pursuit of absolute rigor and certainty has led to numerous consequences for the relationship between Science and religion.

4.3. Sub ratione Dei

Other perspectives also approach the tasks of Theology from a top-down perspective, emphasizing its role in expanding imagination and teleological thinking. It provides an alternative type of explanation that enriches rather than undermines Science, revealing its holistic significance. This approach aligns with the path taken by Grosseteste [26], as highlighted by Tom McLeish [27], who combined a theologically inspired metaphysics of light with optics. It proposes viewing Science as contemplation of nature and as a spiritual practice, as suggested by R. Williams [28] or P. Hadot [29].

This model of theological interpretation aligns with Thomas Aquinas' vision of *sacra doctrina* in the pursuit of knowledge. It draws upon the light of revelation and represents participation in the saints' knowledge of God, rather than attempting to reflect on God from a 'lower' perspective (bottom-up). What does this mean in practice? Theology emerges as an interpretation of scientific data from the standpoint of its ultimate purpose, not as an attempt to replace Science with an alternative mode of proof, but to illuminate its meaningfulness. This is implicit in the formulated task of Theology as contemplating the world, including scientific claims about it, from the perspective of God and relating all things to God. The difference in the approach of Science and Theology to reality is well illustrated by the distinction made by Thomas Aquinas between *scientia* and *sapientia*: "in the speculative domain, wisdom differs from skill (knowledge) in that wisdom knows truth in the light of principles higher than skill" (ST II-II, q.51, a.4c). Thus, theological explanations possess a wisdom-like character.

However, the imitation of Aquinas does not mean merely fitting his ways of knowing God into a rigid framework tied to a specific moment in scientific progress. It involves applying his reasoning to other scientific paradigms as well, such as non-Aristotelian physics, which appears to have been achieved at least partially through the first, second and fifth ways.

4.4. Weaving together

In the paradigm of modern science, which acknowledges the epistemology of risk due to cognitive limitations, the need for theological explanation emerges

as a legitimate procedure for reducing risk. One way to achieve this is through the postulated 'consonance' of the two explanations, as proposed by Ernan McMullin [30]. This can be exemplified in his exploration of human evolution and emergence from both theological and evolutionary perspectives. There are advantages on both sides: the timeless nature of God helps the theist gain a deeper understanding of the scientifically described processes, while the theological ideas provide a hermeneutic horizon for scientific descriptions.

Several other thinkers express similar sentiments. Alister McGrath suggests a 'weaving together' of both approaches, proposing a cumulative and integrative method that respects the identity and integrity of each discipline [31]. He affirms the possibility of integrating insights from different disciplines without requiring them to abandon their unique research methods and concerns. This approach emphasizes the necessity of seeing both the forest and the trees simultaneously, as Einstein metaphorically described. Each individual theory is like a tree, and there is no need to choose between them; instead, one should embrace the whole, as they collectively form the necessary intuitive picture of the world.

On the other hand, R. Williams defines the meaningfulness of theological explanations in this way: "And what the religious and theological perspective in its most mature traditional shape proposes is not any kind of rival epistemology or dismantling of the conventions of defensible objectivity but a way of locating this range of practices and cultures within something like a comprehensive 'culture' of attention, silence and the side-lining of specific needs, wants and priorities; an orientation towards grace, perhaps, without which intelligence repeatedly collapses back into something rather less than the style of truthfulness that seems to be distinctively human - social, cultural, consciously critical and transformative" [28].

Placing Science within a broader framework that allows for comprehension is a key epistemological advantage derived from considering both theological and scientific perspectives. Theology provides a valuable 'frame' that aids in the understanding of individual components, enabling a more holistic grasp of scientific concepts and achievements.

5. Conclusions

An approach that is gaining ground in contemporary Theology is a return to a broad understanding of sacramentality, whether in relation to the Church or the Word of God (as discussed by Benedict XVI in *Verbum Domini*). It seems that the concept of sacrament can also be valuable in the relationship between Theology and Science. If we understand sacrament as a call to transcendence, where a sign points to something greater beyond itself [32] while remaining a real, physical object, then the sacramentalization of Science holds the potential to go beyond surface-level engagement.

It brings to mind the journey of the wise men ('Magi') from the East as described in the Gospel, cf. Mathew 2.1-12, who initially embarked on their journey to Bethlehem to adore Jesus by observing the sky, and thus engaging in scientific inquiry. It was through their scientific exploration that they eventually encountered the Incarnate Word of God, and their initial perception was potentially transformed by the contact with Revelation, as they stopped in Jerusalem, in order to listen to some 'prophesies' about Messiah. All this helped them to open up to a new dimension of understanding. This experience did not diminish their scientific pursuit but revealed a deeper significance. The Gospel clearly said that "When they saw the star, they were overjoyed" (Mathew 2.10, NIV).

The historical and contemporary approaches to explanation in Theology and Science, with their methodological distinctions, highlight the benefits of their intersection, as long as it does not involve elimination or greedy reductionism that seeks to reduce everything to a single observable level, dismissing the need for diverse methods of inquiry [33]. From a theological perspective, the goal is not simply to juxtapose or engage in dialectical tension between the two approaches. Rather, as suggested by Tom McLeish [34], it is about looking at the world 'with God's eyes' to find answers to the questions posed by Science, similar to how God engaged with Job in the biblical narrative, filled with inquiries, answers and dialogue. Seeing everything in and with God seems to reflect the Thomistic approach to Science, which is simply an invitation to contemplate the whole reality *sub ratione Dei*.

Theology helps Science to discover the mystery, but it should not be understood as lack of knowledge or epistemological limitation, but follow Saint Paul's understanding of *mysterion:* the God's plan for humanity revealed in Christ (Colossians 1.26-27). It is something that progressively is showing its tendency towards the ultimate goal, manifesting in this way the whole picture that is inaugurated in scientific approach. It would be useful, nevertheless, not to think of science as a 'house with floors', but maybe as a network that reveals connections, indispensable for grasping the big picture of reality.

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References

[1] S.J. Gould, Natural History, **106(2)** (1997) 16-22.

[2] S.N. Williams, *John Polkinghorne on Conjunctive Explanation*, in *Conjunctive Explanations in Science and Religion*, D.A. Finnegan, D.H. Glass, M. Leidenhag & D.N. Livingstone (eds.), Routledge, New York, 2023, 272.

[3] J. Polkinghorne, *Science and Christian Belief: Theological Reflections of a Bottom-Up Thinker*, SPCK, London, 1994, 36-37.
[4] J. Polkinghorne, *Science and Creation: The Search for Understanding*, SPCK, London, 1988, xiii.
[5] S. Oliver, *Consciousness, Intention, and Final Causation*, in *After Science and Religion. Fresh Perspectives from Philosophy and Theology*, P. Harrison & J. Milbank (eds.), CUP, Cambridge, 2022, 219.
[6] P. Nieminen, J. Loikkanen, E. Ryökäs and A.-M. Mustonen, Theology and Science, **19(3)** (2020) 448-474.
[7] A. Visala, *Agents as Difference Makers, or Why Many Human Actions Have Mental Causes*, in *Conjunctive Explanations in Science and Religion*, D.A. Finnegan, D.H. Glass, M. Leidenhag & D.N. Livingstone (eds.), Routledge, New York, 2023, 60.
[8] E. McMullin, Zygon**, 48(1)** (2013) 143-191.
[9] M. Lazaro, Cauriensia, **14** (2019) 49-80.
[10] R. Pereda, Scientia et Fides, **2(1)** (2014) 125-138.
[11] M. Artigas and D. Turbon, *Origen del hombre. Ciencia, filosofia y Religion*, Eunsa, Pamplona, 2008, 192-193.
[12] R. Bancewicz, *God in the lab. How Science Enhances Faith*, Monarch Books, Grand Rapids, 2015, 62-63.
[13] R.M. Baruwaso, *Catholic Theology and the Dispute over the Image of Science: A critical assessment of the scientific character of Catholic theology*, Peter Lang, Berlin, 2022, 55-70.
[14] J. Franklin, Theology and Science**, 20(4)** (2022) 445-462.
[15] C. Marchionni, Philos. Soc. Sci., **38(3)** (2008) 314–33.
[16] P. Roszak and T. Huzarek, Bogoslovni vestnik/Theological Quarterly, **79(3)** (2019) 739-749.
[17] H. Bikaraan-Behesht, Scientia et Fides**, 11(1)** (2023) 45-61.
[18] P. Harrison, *Science and Religion as Historical Traditions*, in *After Science and Religion. Fresh Perspectives from Philosophy and Theology*, P. Harrison & J. Milbank (eds.), CUP, Cambridge, 2022, 21.
[19] R. Swinburne, *Is There a God?*, Oxford University Press, Oxford, 1996, 68.
[20] B. Petrusic, Reviews in Science, Religion and Theology, **2(1)** (2023) 32.
[21] C. Kaiser, *Toward a Theology of Scientific Endeavour. The Descent of Science*, Ashgate, Aldershot, 2007, 4.
[22] T. McLeish, *Complementary Causation and Emergence. A Substrate for Conjunctive Explanations*, in *Conjunctive Explanation in Science and Religion*, D. A. Finnegan, D.H. Glass, M. Leidenhag & D.N. Livingstone (eds), Routledge, London, 2023, 149-152.
[23] P. Oppenheim and H. Putnam, *Unity of Science as a Working Hypothesis*, in *Concepts Theories and the Mind-Body Problem*, H. Feigl, M. Scriven & G. Maxwell (eds.), University of Minnesota Press, Minneapolis, 3-36.
[24] J. Kallestrup, Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition, **131(2)** (2006) 459-485.
[25] M. Artigas, *The Mind of the Universe: Understanding Science and Religion*, Templeton Foundation Press, Philadelphia, 2000, 102.
[26] R. Grosseteste, *The Scientific Works of Robert Grosseteste*, E.M. Giles Gasper, C. Panti, T. McLeish & H.E. Smithson (eds.), vol. 1, Oxford University Press, Oxford, 2019, 12-89.

[27] T. McLeish, *Lessons in the Distant Mirror of Medieval Physics*, in *After Science and Religion. Fresh Perspectives from Philosophy and Theology*, P. Harrison & J. Milbank (eds.), CUP, Cambridge, 2022, 259-281.
[28] R. Williams, *Understanding Our Knowing: The Culture of Representation*, in *After Science and Religion. Fresh Perspectives from Philosophy and Theology*, P. Harrison & J. Milbank (eds.), CUP, Cambridge, 2022, 239.
[29] P. Hadot, *Philosophy as a Way of Life: Spiritual Exercises from Socrates to Foucault*, Blackwell, Oxford, 1995, 52-70.
[30] E. McMullin, *The Quest for Consonance: Christian Theology and the Natural Sciences*, OUP, Oxford, 2021, 105.
[31] A. McGrath, *An Explanatory Mosaic*, in *Conjunctive Explanation in Science and Religion*, D.A. Finnegan, D.H. Glass, M. Leidenhag & D.N. Livingstone (eds.), Routledge, London, 2023, 305.
[32] R. Angelici, *Semiotic Theory and Sacramentality in Hugh of Saint Victor*, Routledge, New York, 2020, 6.
[33] D. Dennett, *Darwin's Dangerous Idea: Evolution and Meaning of Life*, Simon and Schuster, New York, 1995, 72-90.
[34] T. McLeish, Scientia et Fides, **8(2)** (2020) 43-64.