Faith, in the practice of science

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1. Abstract

Secularism is defined as a conflict between science and religion, understood as two mutually exclusive systems of knowledge. This dualistic understanding of knowledge became radicalized during the Enlightenment project, which substituted metaphysics of theism with mechanistic deism. The methodological gap between science and religion created by the exclusion of metaphysics is interpreted as a wall of separation than a bridge of dialogue. With religion claiming scientific proof and science making metaphysical statements, it is clear, from a philosophical point of view, that there are bridges linking than walls separating, science and religion. There are ontological, epistemological and ethical presuppositions formulating the foundations of science that are beyond the scope of science and its method. The success of science depends on these presuppositions, which have theological and metaphysical import. These presuppositions represent faith in science, quite similar to its religious equivalent in theology. To understand how faith plays a role in the practice of science, faith needs to be understood not in opposition to reason or as an enemy of human intellectual discipline but rather as an essential and a necessary phase of the human mind even in a secular context where science is practiced.

Keywords: religion, faith, reason, intelligibility, science, theology, ontology, philosophy, secularism, presupposition, assumption, values, boundary, bridge, epistemology, demarcation

2. Introduction

Simplistically, we tend to understand secularization as a diametrical opposition that leads to a radical separation between science and religion from their epistemic foundations (Tanzella-Nitti, 2002). This separation is often made based on a conflict thesis that affirms science as rational (logical) knowledge based on empirical (observable) evidence whilst religion is relegated to blind faith in irrational matters of mere superstition (Navarro, 2011). Secularism's dualism of science and religion, results from an anthropological macro-dualism of mind and body, that leads to an epistemological micro-dualism of faith and reason (John Paul II, 1998, nn. 45 – 48). Science as human knowledge is an integral outcome of an interplay between known and unknown, rational and irrational, conscious and unconscious, left brain and right brain and not the inhibition, domination or privileging of one over the other (Peterson, 1999).

So, to speak, a secularization of faith too is needed and not only reason, if at all to achieve this epistemological equilibrium that makes science realistically possible. Once faith is secularized, a careful examination of the scientific method and its stages will reveal how faith is an integral part of the mechanism that produces scientific knowledge (Ball, 1994). The secularist rift between

science and religion is a methodological gap created by the removal of metaphysics (Martinez, 2011). The Enlightenment project rationale that follows the Scientific Revolution, according to Philosophy of Science, sheds light upon the fiduciary elements influencing the method of science warranted by scientific realism (Stenmark, 2010).

The climax of this paper leads to the final discussion of the unquestionable assumptions in science (Artigas, 2001) that best exemplifies the presence of 'faith' in its practice (Jaki, 1986), though glossed over and differently articulated with inadmissible reluctance by secular apologists of science. Faith provides postfoundational epistemology which includes the 'givens' of science, (Meylahn, 2013) without which there won't be any foundations upon to practice science. What defines secularism is the boundary that separates science and religion. Are there clear-cut distinct boundaries that separate science and religion or are such boundaries blurry and overlapping? Furthermore, one can think of these boundaries not as separations but at bridges (Martinez 2011) that make possible inter-relations, dialogue and exchange between science and religion.

2.1. Literature Review

The two major sources of my research into this topic come from the works of Mariano Artigas, *The Mind of the Universe*, 2001 and Stanly Jaki, *The Role of Faith in Physics*, 1986, in which the philosophical understanding of faith's equivalence in science is discussed and shown to be the presuppositions of science which belong to three different categories. By eliminating metaphysics, a separation was created between science and religion by the secular thinkers of the Enlightenment according to John Brooke, *Science and Secularization*, 2010 and Peter Harrison, *Introduction—Science and Religion*, 2010. This modern superficial separation upheld by secularism is rather seen not as a separation but as clear evidence of a bridge that once connected science and religion through philosophy, as Rafael Martinez's, *Ontological Bridges and The Mind of the Universe*, 2011 clearly shows by analyzing the thought of Artigas, 2001. While discussing the thought of Artigas, references will be made to secondary authors such as Thomas Kuhn 2012, John Polkinghorne 1990, Kurt Hubner 1988, Karl Popper, 1990, Peter Hodgson 1979, Langdon Gilkey 1993, Roger Trigg 1993, Nicholas Rescher 1987, Mario Bunge 1967, and Paul Davies 1993. *Faith* is a dimension of human intellection common to both science and religion. It is analyzed according to Aidan Nichols 2009 and contrasted with its function in science according to Artigas, 2001 and Jaki, 1986 subsequently.

2.2. Previous studies and references

Extensive previous studies in this area have been carried out by philosophers most noticeably in the field of philosophy of science, epistemology, metaphysics and psychology. In this research I'm basing myself primarily on two major Catholic thinkers, firstly, Mariano Artigas a Spanish priest, physicist, philosopher and theologian who was a member of the European Association for the Study of Science and Theology and the Académie Internationale de Philosophie des Sciences. He was Consultor of the Pontifical Council for the Dialogue with Non-believers. Secondly, Stanley Jaki a Hungarian priest, physicist, theologian and philosopher of science, Templeton Prize winner (1987), Gifford Lecturer, University of Edinburgh (1974-75, 1975-76) who had affiliations to the Pontifical Academy of Sciences, Fordham University, Stanford University, UC Berkeley,

Princeton University, Institute for Advanced Study, Princeton and Seton Hall University, in South Orange, New Jersey. Both Artigas and Jaki as a philosopher and a scientist respectively have studied and written extensively on the meaning and presence of faith in the practice of science which both identify as the presuppositional foundations of science.

3. Methodology

Primarily the data gathering in this research is carried out from a normative perspective, using an analytical, comparative, critical and deep reading of textual authorities from the fields of philosophy of science, theology, psychology, physics and anthropology. The data analysis is primarily text-based and author-based, in which the research perspective is qualitative as it involves a critical reading of the texts, terminological analysis and commentarial comparisons in search of nuances, meanings and their hermeneutics. The data gathered will be primarily descriptive, and the analysis of which is finally aimed at explanatory and illuminative outcomes.

4. Results and Findings

4.1. Etymology of Secularism

Secularism comes from the Latin *secularis*, meaning worldly or temporal referring to the things or persons assigned to the realm of this world (Keller, 1975, 1554). Secularists believe religion's promise of other-worldly rewards leads to a lack of development of the potential of human life in the here and now (Dodd, 1993, 864). It also denotes the separation of the Church and the State politically where religious authority is relegated to the private realm having no power over public affairs. It is an ideology or a worldview independent of religious thinking, denoting those who call themselves 'freethinkers' practicing a practical philosophy of the people. Rather than a neutral areligious attitude of non-involvement or separation, it can grow into an ill-feeling of anti-religious hostile antagonism that can develop itself into an organized doctrine and a religion called 'secular humanism' or atheism, which can lead to legitimization of persecution and suppression of religion in the public domain. In philosophy, movements such as positivism, materialism and scientism were associated with secularism. Promoting a discourse free of metaphysics and value-judgements they seek to emancipate the world from religious tutelage.

4.2. Science as secular theology

Secularism can mean either a *fusion* or a *separation*. On the one hand it is the *separation* of science and religion. On the other hand, it is the interdisciplinary *fusion* of science and religion within an array of disciplines (Brooke, 2010, 104). In the first sense it implies orthodoxy that adheres to disciplinary demarcations keeping science and religion always separate but the second implies heterodoxy of overlapping that occurs when theology, philosophy and science collaborate. Nomologically, secularism ought to be science replacing religion which can make science a form of secular theology (ibid., 118). With a loss of plausibility and credibility affecting beliefs held

within religious traditions, secularism has become most easily associated with science as an alternative source of knowledge.

Science and secularism are inextricably linked and corelated in two different ways. First, rapid progress in science causes irreversible secularization. Second, as science develops religion will gradually disappear (ibid., 103). This attests secularism's belief in something essential in science and religion that necessarily places them in opposition. Religion is thought of as a method of explaining the physical world through *faith* in the supernatural, whereas science is defined as a rigorous organized process of *rational* activity based on evidence open for observation and experimentation (Jaki 1986, 188). According to modern secular belief naturalistic rational and faith based supernatural explanations are assumed to be in competition and mutually exclusive and incompatible forms of human knowledge.

This wasn't the case until the dawn of the Enlightenment that mainly aimed at piercing the darkness of ignorance, superstition and prejudices with the light of reason (Fiorillo, 2002). Liberation and emancipation of human reason was accentuated by an anti-metaphysical and anticlerical attitude that led to the repudiation of faith and divine revelation by the architects of the Enlightenment. According to the Baconian vision, the invention of the scientific method itself, in the broader context of science replacing religion, is a form of secular theology of *deism* replacing its religious counterpart of *theism* (Topham, 2010, 64). It is a project firmly grounded in the 17th century prelapsarian optimism of attempting to reverse the fall of Man by restoration of the once lost pristine Adamic knowledge (Brooke, 2010, 119).

When scientists construct worldviews based on scientific theory, making truth claims, value assessments and descriptions about the reality of the world based on such theories, they are clearly going beyond science itself. Because worldview construction with empirical and intelligible dimensions involves philosophical and theological reflections built on ontological and metaphysical foundations (Martinez, 2011, 20-21). Such moral, ethical implications of science involve religious perspectives with ultimate transcendental meaning of the world, because a worldview (be it Copernican, Newtonian, Darwinian, Einsteinian etc.) is never constructed by formal, technical, methodological aspects of scientific theories alone, it requires human insights on the world that transcend science itself into the fields of philosophy, theology, anthropology and metaphysics. Intelligibility of reality made fully accessible through empirical experience is humanly possible only through metaphysical dimensions which are necessary presuppositions of science.

4.3. Defining faith

The Greek word in the scriptures of the Old and the New testaments, translated into English as 'faith' is *pistis* which includes qualities as trust, reliance, loyalty, confidence (in something/ someone), hope for the realization (of something) and the adoption of (a new life). In the art of rhetoric, *pistis* signifies proof or a premise hidden in an argument. But none of these qualities will be feasible without the tiniest hint of a logical possibility of knowing the object (Nichols, 2009, 03). There's an element of knowledge in *pistis*, a cognitive element that closely associates with an investigation of something/someone that becomes the object of faith. The act of faith in

Christianity is always a commitment (ethical) to action preceded by a conviction (epistemic) about something as true. It entails the acceptance of a disclosure (potential facts) confirmed by an encounter (experience) with evidential value.

Two views on faith from the Pauline and Johannine traditions are given in scripture about its cognitive dimension and the ultimate end. The Pauline view emphasizes on the enigmatic and imperfect character of faith—capable only a glimpse of its object remotely, suggesting lack of epistemic transparency. This does not amount to blindness as opposed to sight (walk by sight—2 Corinthians 5:7) but rather to 'vision' which transcends mere unilateral subjective sight. The apparent downplay of intellectualism of faith is an emphasis on the role of the will (Nichols, 2009, 05). The Johannine view on the other hand writes along the cognitive lines of faith, presenting it as a new spiritual faculty of seeing (John 1:14; 11:40; 14:8-9) capable of a preliminary apprehension of an end (beatific)/fundamental (eternal life) state. John treats faith and knowledge as quasi-synonymous (John 6:69), laying emphasis on its illuminative and mystical character.

Thomas Aquinas' definition of faith as 'the habit of mind whereby eternal life begins in us, causing the mind the assent to things that do not appear' (ST. IIa. IIae., q. 4, a. 1.) is a combination of the Pauline (not by sight) with the Johannine (eternal life/vision). His statement that 'the light of faith causes *to see* the things that are believed' (to see that the things believed are credible) which emphasizes the visionary aspect is fully Johannine. In popular culture faith is seldom treated as rational, but it is so in the NT. "Always be prepared to give an answer to everyone who asks you to give the *reason* for the *hope* that you have" (1 Peter 3:15). *Reason* here is an *apologia*, a *logos* (coherent explanation/rational account), and *hope* is the key dimension of the biblical concept of *pistis* which is the cognitive dimension of faith an intellectual openness to which *apologia* and *logos* closely akin.

Augustine's two complementary maxims: *Intellige ut credas* (understand that you may believe) and *Credo ut intelligas* (believe that you may understand) further explains the scientific dimensions of faith. The *first* maxim: *understand that you may believe*, asserts the unworthiness of an act of faith if it lacks a reasonable and prudent character, and sees faith as a result of humans having rational souls, if not for which they could not even believe, and faith would be impossible. The *second* maxim: *believe that you may understand*, refers to contemplative understanding which is an advanced kind of understanding that preconditions faith (Nichols, 2009, 08). In *De praedestinatione sanctorum* 2, 5 Augustine defines the act of faith as 'pondering with assent' meaning 'no one believes anything unless *first thought* that it ought to be believed'. Here the word *assent* implies a willingness to resolve the pondering in a particular direction with commitment or adherence to a paradigm. When faith is defined this way as a precondition for the process of human cognition, its necessity is seen as an inevitable epistemological step in the singular process of human knowledge without which practicing science is impossible.

4.4. Faith as hermeneutics of observation

The methodological gap between science and religion due to the absence of faith in the method of science implies a limitation, and it is because of this limitation that science functions predictably, reliably, workable and successful. Empirical science, by its very nature, is limited to those aspects

of reality that can be studied using experimental control (Artigas, 2001, 08). On account of this empirical limitation in science, God and spiritual dimensions will forever remain outside of its method of experimentation. Human experience goes beyond the scientific knowledge of the empirical method, because scientific knowledge is not an outcome of ordinary human observation but controlled systematic observation accompanied by intentionality. An illustration of intentionality is the deliberate suspension of spiritual aspects from scientific observation. Intentionality means bracketed, controlled, focused observation which is neither neutral nor pure but theory laden. You won't see something unless you know what you are looking for, because of the sheer nonexistence of theory independent sense data (ibid., 09).

Theory or hypothesis is not the observed reality of the natural attitude, but the vision of what the observer hopes to see. It reminisces the words: "faith is confidence in what we hope for and assurance about what we do not see" (Hebrews 11:1). Observations of the empirical sciences are hermeneutical work that begs for inventive interpretation, and it implies that the objects of our observations are the constructs of our theories. The paradigm of Kuhn reminds us that the objects of scientific observation are immersed in a matrix of intersubjective relations and are products of such relations where interpretations presuppose a paradigm (Kuhn, 2012, 122) capable of adding to, or removing from, observations, somewhat replicating a faith vision. This type of deliberate control and manipulation of natural human experience is well exhibited by attitudes of disenchantment and demystification which aim at deliberate suspension of the metaphysical attitude within natural human experience.

4.5. Boundary questions

Demarcation principle that distinguishes science from pseudo-science suggests the existence of clear distinctions and boundaries that can clearly separate science from non-science. Are these boundaries real and how do we know that they really exist? Such demarcations are made visible whenever science makes metaphysical interpretations of its data. At its boundaries science raises religious questions that it cannot answer (Barbour, 1990). Such boundary questions are the outcome of the methodological gap created between science & religion by definitions of secularism. Interpreting these boundaries as *walls* (conflict) or *bridges* (dialogue) is a matter to be discussed under the Philosophy of Science. Faith in science is most visibly manifested by these grey areas where boundary questions emerge under three different categories: 1) Subjective connections, 2) Particular overlaps and 3) General presuppositions (Artigas, 2001, 03).

1) Subjective connections

To understand these questions, we need to accept that scientists are human beings. It is to make science objective, that the subjective views of individual scientists caused by their personal sensibilities are always left aside from scientific work. Thus, science is made objective by the exclusion of theological and philosophical questions that occur personally within the human scientist on account of its methodology. This exclusion of the subjective human elements from scientific data is done to avoid stimulating metaphysical questions with faith implications (ibid., 16) Scientific data, hence, can stimulate metaphysical thoughts, and science is a catalyst having capacity to set off metaphysical attitudes.

2) Particular overlaps

These questions in science become visible from the use of science by both believers and non-believers alike. Such use of science to solve metaphysical questions is pseudo-scientific (ibid., 19). What is meant by overlaps is the use of scientific data within metaphysical or theological arguments such as natural theology's proofs for the existence of God, or the new atheists use of evolution to deny the existence of God—which are arguments in line with 'God of the gaps' theory. There are phenomena that are too odd or too big to fit into any pattern of scientific explanation that can lead to fundamental questions, like why anything exists at all? Such questions expose the limit and reach of scientific explanations indicating boundaries.

3) General presuppositions

The third category contains the most suitable boundary questions (ibid., 21). They focus on historical factors that played a role in the development of science. The role of faith through metaphysics and theology has played a role in the development of science. These are the most suitable for a dialogue between science and religion, rather than 'God of the gaps' arguments. According to Compte's law of three stages of human intellectual development, the historical development towards positive knowledge necessarily passes through the two prior stages of theology and metaphysics (Bourdeau, 2023). The theological and the metaphysical stages are not obstacles from which the scientific mind struggles to break free from, rather they are the sources that produce and nurture scientific knowledge. Notions of light, space, time, motion developed first in mythology and the theological contributions to such notions of pre-scientific metaphysical origin necessarily preceded science.

4.6. Presuppositions as faith in science

Every particular science presupposes certain basic notions which strictly belong to the philosophical order, and which therefore lie beyond the scope of science itself. Implications of science, which is what proceeds from scientific data, in a curious way seems to easily point out beyond science itself (Polkinghorne 1987, 63). This also reflects something about what precedes science from which such data is obtained and has made possible the successful use of empirical methods. While implications or insights point to the achievements of science, presuppositions refer to the foundations of science that have made such achievements possible. The foundational elements that make up a cultural matrix or a paradigm upon which science is practiced are the presuppositions of science that imply faith in the existence of a natural order that could be explained by science. In other words, it says that there are beliefs that underlie the development of empirical science which are by their nature extra scientific (Artigas 2001, 28). Only metaphysics can ascertain what these absolute presuppositions are in science.

A *presupposition* is 'informally, any suppressed premise or background framework of thought necessary to make an argument valid, or a position tenable' or 'a proposition whose truth is necessary for either the truth or the falsity of another statement' (Blackburn 1994, 300). To 'assume' or to 'presume' is to take something for granted as a basis for an argument. It means a necessary preceding condition, an antecedent, something *a priori*, or believed in advance of actual knowledge. They are used as primitive notions or axiomatic principles to begin an investigation

(Artigas 2001, 29). In science a presupposition is a 'belief' which precedes science but helps science to progress. They are accepted without questioning to begin an investigation in science but cannot be proved through the same investigation.

Scientists can afford to carry out science with indifference to presuppositions, excluding them from the principles, axioms or postulates of scientific theories because they are only preconditions of science and not science *per se* (ibid., 20). On the one hand they consist of subjective beliefs of the scientist, and on the other, objective statements or principles that provide the basis for scientific theories. These beliefs and statements together make objective 'states of affairs,' that exist in nature, in the human being, and in society respectively. These beliefs or presuppositions are of three types: 1) Natural order, 2) Human abilities, and 3) Scientific values. These three types respectively explain the ontological, epistemological and ethical presuppositions at work in science.

1) Natural order

There exists a natural external world that has its own consistency and is intelligible and rational (Jaki 1966, 348). Even though it is a necessary condition of the scientific enterprise that all scientists believe in the existence of order and rationality in nature, it can still be denied in the ordinary practice of science. If we accept the existence of a natural order then we can also seek to understand its origin and meaning (Martinez 2011, 23). The meaning of this order in nature implies the existence of an intelligible dimension in nature—a real teleology present in the natural world, verifiable based on ontological realism. It is on this presupposition that scientific constructs such as hypothesis, concepts, laws and theories are possible in theoretical science.

2) Human abilities

If there exists order and an objective rationality in nature, it corresponds to our human cognitive capacity to know that natural world, even if our knowledge is always imperfect. This is an epistemological dimension, that shows the effects of perceiving the world because of the rational action of God (ibid.). Nature can be read and understood by human intellect, producing arguments and proofs, evoking the metaphor of the *book of nature* that reveals God's works as a creator (Tanzella-Nitti, 2019). This also presupposes the capacity that human reason has, to search for the truth which is based on epistemological realism (Artigas 2001, 50). It is on this presupposition that the scientific method works enabling humanity to transcend ordinary knowledge through the formulation of theory and hypotheses that can be empirically tested to be verified or falsified.

3) Scientific values

The third presupposition is based on the two previous presuppositions, that the world is ordered and rational, and that this order and rationality is open to the human mind. It says that science is a goal-directed activity in which methods are employed to obtain specific results, and that these scientific goals can and should be achieved, because they possess a value, which makes scientific activity a worthwhile enterprise that deserves our efforts. This is an ethical presupposition which refers to values in science (ibid.). Science wouldn't have been pursued if there was no value seen

in the type of knowledge it produced with valuable practical application. It is on this presupposition that teleological dimensions in science such as goals, ends and targets are fixed.

These presuppositions are related to empirical science as its necessary conditions. The three general presuppositions of natural order, human abilities and scientific values even though philosophical by nature, they do certainly have theological import. Historically they were derived from theological notions, which implies that historically science has theological and metaphysical roots to begin with.

5. Discussion and Conclusions

The pioneers of modern science such as Copernicus, Keplar, Galileo, Descartes, Newton, Kant, had to rely on some kind of faith, expecting that nature would be intelligible and that they could manage it by using the new methods. Because of the way in which the new mechanistic science presented itself in the 17th century, as a substitute for the Aristotelian philosophy of nature, divine action was presupposed in their deterministic worldview. Fixed laws of nature (ontological) and of human knowledge (epistemological) were postulated as the basis for the principles of natural science which were considered as a branch of the tree of knowledge which had its roots in metaphysics (ibid., 31). These presuppositions provided means for science to transcend itself, as they are a part of science that can be used within philosophical and theological contexts to discover the meaning of science (ibid., 34). Many scientists have agreed on the necessity of philosophical faith in science that these presuppositions indicate.

Karl Popper admits that metaphysical faith in the existence of regularities in the world is a faith he shares and without which scientific action is hardly conceivable (Popper 1990, 252). David Miller on similar lines admits that science cannot get started without some assumption or presupposition of order and regularity in the world (Miller 1994, 15). Hermann Weyl saw that science would perish without ‘a supporting’ transcendental faith in truth and reality (Artigas 2001, 36). Albert Einstein was convinced that without the belief that it is possible to grasp reality, without belief in the inner harmony of our world, there could be no science (Jaki 1966, 348 ff). Paul Davies admits that scientists take it for granted that we live in a rational, ordered cosmos subject to precise laws that can be uncovered by human reasoning (Davies 1993, 20). These testimonies imply that the methods and basic concepts of science have metaphysical roots.

Faith as *pistis* is not blind, irrational belief in something that is logically impossible. It is a deduced conclusion from premises that are evaluated and considered with reason and experience which enables a ‘vision’ (in the Pauline sense) in the mind of the observer, as it is in the instance of constructing a hypothesis in science, based on many auxiliary pieces of quasi-evidence. Augustine’s two maxims closely resemble the two elementary methods of induction: *Intellige ut credas* (from observation to hypothesis) and deduction: *Credo ut intelligas* (from hypothesis to observation). Here *faith* stands for the *hypothesis* in science, which is not a direct observation, but a logically constructed possibility based on many indirect observations and calculations supported by creative imagination and the views of other scientists who had gone before.

According to the Johannine view of faith, rationality in the world, which affirms ontological realism, necessarily corresponds to epistemological realism which enables intelligibility, simplicity, symmetry, causality in nature perceptible to human intellect. The mind and the eyes of a scientist are trained to see theoretically, and it is neither neutral nor natural. This is clearly implied in the Thomistic definition of faith as 'the habit of the mind (theoretical), causing the mind to assent to things that do not appear'. Atomic, quantum and particle physics deal with many hypothetical models without directly observing them yet their presence predicted through successful results. This rigorous training of the mind in faith and reason happened during the Medieval times in Europe for centuries, in the context of Christian prayer and contemplation leading to the Renaissance and the Scientific Revolution. "The Middle Ages formed one long training of the intellect of Western Europe in the sense of order" (Whitehead 1967, 11), which instilled scholastic discipline in the mind that gradually led to the formation the scientific method beginning from the 12th century AD, and culminating in the 16th century AD.

There's a role of faith in the practice of science, and this faith is philosophical in the form of assumptions or presuppositions for which ontological and epistemological realism is necessary. This implies that there is a mind-independent reality, which cannot be discovered directly without presuppositions, assumptions and postulates that necessarily must precede all predictions. Such presuppositions or 'faith' in science are visible in the three dimensions of *goal-directed human activity*, which implies values (ethical), use of the *scientific method*, which implies the human ability to know beyond ordinary sense knowledge (epistemological), and finally *scientific constructs*, which implies a rational natural order (ontological), in science. Scientists are completely oblivious to the extent of denying the existence of such presuppositions to guard the autonomy of science from metaphysics, philosophy and theology (Artigas 2001, 52).

From an objective point of view, these presuppositions are the basis of the whole scientific enterprise. Science can't explain why and how science works, it is taken for granted (Davies 1993, 49). But its success is an outcome of the *rationality* and *intelligibility* of the world, which has made science a *value worth pursuing*. In its practice, science as a human endeavor, can never rid itself of faith, though it may not be in the divine, but at least in its own methods and results. The ultimate goal of science is not simply to produce knowledge but to discover the truth that knowledge signifies. Faith in science as a means to the discovery of truth is the final validation and vindication of science itself—to make humanity believe!

My recommendation is that the secular–religious separation can and should be maintained methodologically for the autonomy and growth of both disciplines respectively, and it should be a dialogue than a conflict. Religion should not be seen as the enemy of science, where this separation becomes an all-out political war between the two disciplines, in perpetual conflict, disrupting human social progress at every level. Neither should it be exaggerated to such extents as whether science should be used to suppress, control and wipe out religion, which is unwarranted and extreme political behavior rather than intellectual decency or democracy. Science and religion represent the opposites of the common human nexus of knowledge which are necessary for the growth and balanced development of human knowledge and society.

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