



**International
Journal of Society, Culture & Language
IJSCL**

Journal homepage: www.ijscl.net
ISSN 2323-2210 (online)

Examining the Relationship between “Science” and “Religion” in the Socio-Cultural Context of the Renaissance: A Kuhnian Reading of Bacon’s *New Atlantis*

Mahmoud Reza Ghorban Sabbagh^{1a}

ARTICLE HISTORY:

Received October 2019
Received in revised form December 2019
Accepted December 2019
Available online January 2020

KEYWORDS:

Thomas Kuhn
Paradigm-shift
New Atlantis
Socio-cultural structure
Religion and Science

Abstract

Thomas Kuhn’s model of paradigm shift as an intra-systemic framework to account for changes within the scientific discourse has been adopted by scholars in different fields as diverse as sociology, theology, economy, and education, to name only a few. The present study argues that the same model can usefully be drawn upon to examine the relationship between ‘science’ and ‘religion’ with some reservations during the Renaissance. To further illustrate the interconnection, the study focuses on Francis Bacon’s utopian text *New Atlantis* and shows the way the author is attempting to emphasize the symbiotic co-existence of the two paradigms in an ideal society. However, viewing the work within a larger context, one can see how Bacon’s text seems to be an intermediary link between the Church- and science-controlled discourses. The study also shows that although towards the end of the Renaissance, the scientific paradigm gains in popularity, the religious discourse is also present and makes its presence strongly felt.

© 2020 IJSCL. All rights reserved.

¹ Assistant Professor, Email: mrg.sabbagh@um.ac.ir
Tel:+98-915-5008948

^a Ferdowsi University of Mashhad, Iran

1. Introduction

The socio-cultural context of the second half of the 19th century witnessed the height of the conflicts between science and religion, which can be traced as far back as the late Middle Ages and the Renaissance. A series of scientific achievements pushed the lurking hostility into the surface. Charles Darwin (1859) in his magnum opus *On the Origin of Species* laid the foundation of evolutionary biology. After years of studying and examining the collected data, contrary to what people had come to believe through the Biblical text, he reiterated that different forms of life emerged through a long process of evolution. Thus Darwin agreed with the estimation of the age of the earth demonstrated by Charles Lyell and other geologists who had cast doubt on the Biblical claims which put the age at about six thousand years (Rudwick, 2014). Scientific discoveries as such provided more substantial evidence for people's doubting their religious beliefs. The explicit pronouncement of the conflict thesis, as it is referred to, comes from scientists like John William Draper and his book *History of the Conflict between Religion and Science* (1874).

The terms 'science' and 'religion' have not always been employed and understood in the same way. Max Müller (1882) noted that what was referred to as ancient religion, would have been called 'law' in antiquity. It was through the works of scholars like Tylor (1871) that the concept of 'religion', the way we understand today, gained currency. Before the 19th century, as far back as the time of Aristotle, 'science' was commonly referred to as 'natural philosophy'. In 1687, Newton's famous book entitled *Philosophiae Naturalis Principia Mathematica* [*Mathematical Principles of Natural Philosophy*] shows the way the term was used in the late 17th century. It was also in the 19th century that the two concepts were paired as 'religion and science'.

The purpose of the present study is to examine the relationship between science and religion in the socio-cultural context of the early 17th century. The main focus will be on *New Atlantis* (originally published in 1627), an unfinished utopian text written by Francis Bacon, the leading and influential figure of the modern scientific revolution. The study will

draw on Thomas Kuhn's model of paradigm-shift suggested in his work *The Structure of Scientific Revolutions* originally published in 1962.

The article will be presented in three parts under the following titles: theoretical framework, discussion: Francis Bacon and *New Atlantis*, and concluding remarks. First, Kuhn's views will be introduced in some detail. To examine the relationship between science and religion, *New Atlantis* will then be examined within the socio-cultural context of the time of its publication using a modified version of Kuhn's model of paradigm-shift. The study will be concluded by discussing the implications of the conducted research.

2. Theoretical Framework

Thomas Kuhn, the American philosopher of science, originally published his well-renowned book *The Structure of Scientific Revolutions* in 1962. Ever since its publication, the book has been translated into many different languages and has had a great impact not only in the realm of philosophy of science but also in fields as diverse as philosophy, theology, sociology, and history.

The core catchphrase in the whole book is "paradigm-shift". The way Kuhn uses the concept "paradigm" met with some resistance by critics like Margaret Masterman who argued that Kuhn had used it in as many as twenty-one different senses (Godfrey-Smith, 2003, p. 77). In the postscript to the third edition in 1996, Kuhn accepted that he had employed the concept rather vaguely and suggested two main senses. The first sense which he describes as sociological in nature "stands for the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community" (Kuhn, 1996, p. 175). The second sense, on the other hand, "denotes one sort of element in that constellation, the concrete puzzle-solution which, employed as models or examples, can replace explicit rules as a basis for the solution of the remaining puzzles of normal science" (Kuhn, 1996, p. 175). Godfrey-Smith (2003) labels these two senses as *broad* and *narrow*. He defines the broad sense as "a package of ideas and methods, which, when combined, make up both a view of the world and a way of

doing science” (p. 77). The narrow sense, on the other hand, refers to “a specific *achievement*, or an *exemplar*” of the broader sense like Newton’s laws of motions or Mendel’s experiments with plants that form the basic foundation of modern genetics (p. 77). What is of interest in the present study is the sociological implication of the first sense.

Kuhn’s main argument in his book is to challenge the widely assumed understanding of the way ‘normal science’ works. As a matter of course, researchers working in a scientific field learn the basic principles and they practically show little disagreement over commonly held views. (Kuhn, 1996). The familiar paradigm apparently provides the researchers with the necessary frameworks within which they can understand the subject, solve the problems (i.e., ‘puzzle-solving’) and communicate their findings to their peers. The implicit consensus over the fundamentals which makes the scientific cooperation possible (evidently through the process of “indoctrination”) leads to a deep “faith” in those involved in the procedure (Godfrey-Smith, 2003, p. 84).

Although the paradigm in this sense streamlines scientific transactions, it strictly limits the scope of possible questions that can be posed and reasonably answered within the confines defined by such frameworks. Thus the questions lying outside the defined limits are deemed to be irrelevant.

Accepted theories within a particular paradigm cannot accommodate all the questions and answers that can legitimately be raised. At times there are puzzles that prove to be recalcitrant or there are observations that can hardly be accounted for within the defined limits. In case the existing paradigm fails to provide the satisfactory answer to a question, there emerges what Kuhn terms an ‘anomaly’: “the recognition that nature has somehow violated the paradigm-induced expectations that govern normal science” (Kuhn, 1996, pp. 52-53). Anomalies or counterinstances are thus the first stepping stones that lead the researchers to new discoveries. Initially, the scientific community attempts to find a solution or ‘*ad hoc* modifications’ within the limits defined by the paradigm; if, however, they fail to do so and the problem perpetuates,

the scientists lose their ‘faith’ in the reliability of the paradigm and start questioning its fundamentals. This situation is referred to as the state of ‘crisis’. The crisis urges the scientific community to look for a new paradigm to tackle the emerging issues. However, Kuhn maintains that scientists would rather not give up the old paradigms unless they find new ones simply because they cannot “do so and still remain scientists” (Kuhn, 1996, p. 78). The way tectonic plates move can be a good analogy for the way paradigms work. Tectonic plates are gigantic solid outer layers forming the crust of the Earth. When seismic tensions build up in one plate, it can deform elastically and when the stress is removed the plate is restored to its original shape. The stressed material can be deformed inelastically. In this situation, when the pressure is eliminated, the material retains its new shape. In case the plate is brittle or the pressure too much, the material may break into pieces.

The question now is ‘Can the anomalies in and by themselves change the paradigm?’. According to Kuhn, the answer is in the negative, “a scientific theory is declared invalid only if an alternative candidate is available to take its place” (Kuhn, 1996, p. 77). He then adds, “... the decision to accept [a new paradigm] and the judgment leading to that decision involves the comparison of both paradigms with nature *and* with each other” (Kuhn, 1996, p. 77). Hardly are the scientists initially cognizant of the shift they have ventured to introduce. Among such rare cases, Kuhn refers to Einstein’s experience in proposing his theory of relativity.

What is of interest in the present study, which will be later referred to, is the transition from one paradigm to the next. Although the establishment of the new paradigm involves “reconstruction of the field from new fundamentals” requiring necessary changes in “methods” and “applications”, during the transition phase there will be “a large but never complete overlap between the problems that can be solved by the old and the new paradigm” (Kuhn, 1996, p. 85). The more the new framework proves efficient in solving the problems, the more the scientific community distances itself from the older paradigm. This

can be considered as the advent of a new scientific revolution.

However, the new possibilities and perspectives offered by the new paradigm are not always welcomed by all. Kuhn's (1996) diction here veers towards religion and rhetoric,

Though a generation is sometimes required to effect the change, scientific communities have again and again been converted to new paradigms. Furthermore, these conversions occur not despite the fact that scientists are human but because they are. Though some scientists, particularly the older and more experienced ones, may resist indefinitely, most of them can be reached in one way or another. Conversions will occur a few at a time until, after the last holdouts have died, the whole profession will again be practicing under a single, but now a different, paradigm. (p. 152)

There are a couple of points in the above quotation which need to be attended to. First, the process of adoption of the new paradigm may be a time consuming one. This can be because of the human proclivity to resist sudden changes, especially when one has been exposed to the older paradigm for a long time; as saying goes, 'old habits die hard!' People apparently tend to stick to their habituated beliefs and practices in the same way that they follow the religion they are born into, hence Kuhn's use of the term 'conversion'.

Another stumbling block in the way of accepting the new paradigms is 'persuasion'. When adherents of competing paradigms try to persuade each other, they are inevitably entangled in circular reasoning simply because "Each group uses its own paradigm to argue in that paradigm's defense" (Kuhn, 1996, p. 152). The person who is confessedly arguing to drive his point home within a particular paradigm can explicitly show his reasoning within the restrictions imposed by the assumed framework. However, the point cannot be "made logically and probabilistically compelling for those who refuse to step into the circle" (Kuhn, 1996, p. 94). Kuhn (1996) compares the situation of the scientific

revolutions to the ongoing arguments between different parties involved in a political revolution: "there is no standard higher", he argues, "than the assent of the relevant community" (p. 94).

The new paradigm is not only incompatible but also 'incommensurable' with its older predecessor (Kuhn, 1996). The incommensurability between the pre- and post-revolutionary phases of what can be termed as 'normal' science by their adherents can be discussed at different levels. First and foremost the proponents of the competing paradigms can hardly agree on the possible questions that can be meaningfully posed and adequately answered. The second reason pertains to how the two paradigms use the terms, concepts, and experiments in their own idiosyncratic ways (Kuhn, 1996). The scientific communities favoring either of the two do not use the concepts and terminology in exactly the same way which can evidently give rise to mutual misunderstanding. This paradigm-determined model casts severe doubt on the assumed 'objectivity' and 'neutral' observation which allegedly form the foundation of empirical science; what is usually referred to as the 'theory-ladenness of observation'. It seems that even in experimental sciences, the alleged 'objectivity' depends on the adherents' agreement over the adopted paradigms that can be changed sooner or later.

As mentioned earlier, Kuhn's (1996) model has been successfully adopted and applied by scholars from other fields outside of science. For instance, in the 1980s, M. L. Handa, a sociologist of education from the University of Toronto, introduced the notions of "social paradigm" and "paradigm paralysis" within social sciences. Inspired by Kuhn's paradigm-shift, he explains how social institutions are affected by such shifts especially in the field of education. Later on, Hans Küng introduces his six historical "macro models" in his book *Christianity: Essence, History, and Future* (2003) to classify the shift in paradigms in the history of the Christian thoughts. Such applications show how the model can lend itself well to disciplines other than the one it was basically designed for (i.e., science).

All the studies drawing on Kuhn’s theory have been intra-systemic, examining the potentials of the model within one single discipline (e.g., science, sociology, theology, etc.). The main purpose here, however, is to show how Francis Bacon’s utopian novel *New Atlantis* tries to present an ideal assimilation of scientific and religious paradigms. The present study is inter-systemic in nature and argues that the professed fusion of the two paradigms, as the utopian genre suggests, is nowhere to be found. Textual as well as external evidence provided by Bacon’s other works also show that the novel heralds the advent of a new age in which the scientific achievements and inductive mode of reasoning are about to gain the upper hand.

3. Francis Bacon and *New Atlantis*

In letter XII of his *Letters on England* entitled “On the Lord Bacon”, in answering to the question “Who was the greatest man, Cæsar, Alexander, Tamerlane, Cromwell, &c.?” Voltaire (2005) says, “That man claims our respect who commands over the minds of the rest of the world by the force of truth, not those who enslave their fellow-creatures: he who is acquainted with the universe, not they who deface it”.

Voltaire (2005) considers Bacon’s *Novum Organum* as the ‘scaffold’ and the foundation of the new philosophy. He also refers to Bacon as a pioneer of ‘experimental philosophy’. Andrew Jamison (2006) maintains that “[w]ith Bacon, the making of modern science became programmatic, and in the period of civil war from 1640 to 1660, his writings inspired movements of Baconians, taking part in what Bacon had termed the ‘great instauration’” (p. 50). He is also considered as the inspiring angel of the British Royal Society which was modeled on Bacon’s Salomon’s House in his *New Atlantis* (Ousby, 1993).

Bacon was essentially concerned with the reorganization and rehabilitation of learning. It was in 1620, still at the peak of his political career, that he published his famous *Magna Instauration* or *Great Instauration*. The work covers a wide area ranging from logic and epistemology to natural philosophy. Of the six intended sections, only two were completed. He published the first part, *De Dignitate et Agmentis Scientiarum* (*Nine Books of the*

Dignity and Advancement of Learning), in 1623. This was an enlarged version of his *Proficiency and Advancement of Learning* dedicated to King James in 1605. The second part known as the *Novum Organum* (or *New Organon*) which first appeared in 1620 provides the readers with certain guidelines on how to interpret nature correctly. These two works sum up the principal elements of the Baconian approach, most importantly his famous notion of inductive reasoning. Reuben P. Halleck (1913) argues that,

Bacon was not the father of the inductive principle, as is sometimes wrongly stated; for prehistoric man was compelled to make inductions before he could advance one step from barbarism. The trouble was that this method was not rigorously applied. (p. 132)

He should, therefore, be given the credit for his insistence on the systematic application of the method in science.

3.1. *New Atlantis*

Unlike most of his other works, Bacon’s *New Atlantis*, basically a narrative fiction, has not remained unaffected by his ambitiously scientific mindset. Bacon in this work tries to show how these theories can be built into the structure of an ideal society. Here Bacon, like other proponents of this sub-genre of utopian fiction, is concerned with the structure of a better society on Earth rather than in the afterlife. Bacon is considered to be the pioneer of the genre which came to be called science fiction particularly in his *New Atlantis* (Stableford, 2003). Many of the references to scientific possibilities referred to in *New Atlantis* had been figured out under the influence of Cornelis Drebbel. He was a Dutch inventor who went to England in 1604 and managed to have as his patron King James I. He invented a perpetual motion clock, a diving boat (i.e., the prototype of modern submarines), a scarlet dye, a compound microscope, a self-regulating oven and many more. On the wing of his imagination, Bacon voices the dreams that had to wait for centuries to come true.

The work which was posthumously published in 1627 is apparently the first part of his unfinished dreams of an ideal commonwealth and it had been written in the tradition of

utopian-philosophical works of Plato and Sir Thomas More. Bacon has used the thinly plotted account as an excuse to delineate what his ideal society may be like when his scintillating notions already laid out in his serious works like *Sylva Sylvarum*, *The Advancement* and *Novum Organum* are woven into the texture of reality. Before we deal with our main discussion, it seems that a synopsis of the story can obviate the need for referring to events of the story elsewhere in the article.

Bacon's *New Atlantis* starts when the narrator and his companions, while traveling from Peru to the Orient, lose their course and come upon an unknown island. However, they are discouraged to land and shortly receive a scroll written in Hebrew, Greek, Latin, and Spanish promising any assistance that they might need provided that they do not land. The document is signed with a stamp of cherubim and also bears a sign of a cross. After the narrator and his companions profess that they are Christians and "have not shed blood ... within forty days past", they are allowed to land to receive medical care for the sick crew members. Their gentlemanly behavior earns the favorable attention of the Governor of the House of Strangers who let them know more about his country. The Governor first tells about the time when his homeland embraced the Christian faith. He relates how twenty years after Christ's ascension, the miracle of light converted them into Christianity. Before their conversion, the island had enjoyed the blessing of a bountiful king called Salomona. He had established an 'Order or Society' called Salomon's House which is sometimes referred to as College of the Six Day's Work. The College, "the lanthorn of this kingdom", which "is dedicated to the study of the Works and Creatures of God" (Bacon, 1999, p. 167) provides the islanders with still another source of light, the light of science. Like his namesake, Solomon (the king of ancient Israel), Solamona was a wise leader. Just as Solomon built the Temple, Solamona established his scientific institution for the good of his people. He then tells them how in the past his country traded with China, Phoenicia, and the powerful kingdom of Atlantis. After the destruction of Atlantis by flood and having realized that his country is self-sufficient, the wise king of his country ceased to communicate with foreign lands.

Then for the welfare of people of his country, he founded Salomon's House to study all 'the Works and Creatures of God'. The narrator, on an outstanding occasion, visits a Father of Salomon's House who explains that his society is essentially founded for "the knowledge of causes, and secret motions of things, and enlarging of the bounds of Human Empire, to the effecting of all things possible" (Bacon, 1999, p. 177). The Father then very systematically expounds on what they have done or are going to do; things like the process of refrigeration, the study of soils, grafting, observation towers, powerful telescopes or microscopes, to name only a few. He then says how everyone in Salomon's House is assigned a particular task: traveling, gathering information, compiling the results, finding practical application for what they have found and formulating laws from experimental data. Finally, the Father blesses the narrator and allows him to make the revelations public.

It seems that for Bacon the two paradigms of 'religion' and 'science' have fundamental roles in his ideal society. It does not seem that the two are of the same status in the eyes of the fathers of House of Solamon, though. Bacon in his *Advancement of Learning* does not consider natural philosophy (what we now call science) to be at odds with religion. He considers them as "two clear eyes" which let us look "deeply and wisely into these shadows" (1952, p. 33). However, Bacon admits that "in the matters of faith and religion, we raise our imagination above our reason" (1952, p. 55). Here one cannot depend on the inductive method of reasoning frequently advised by Bacon to be used for natural philosophy; the only way here is 'inspiration and revelation from God'. In his *Novum Organum*, Bacon warns us against the pernicious effects of "superstition, and the blind and immoderate zeal of religion" (1952, p. 124) on natural philosophy. His partiality for the Christian faith does not match the zest he so abundantly reveals in his elaborated accounts of the inductive method in natural philosophy.

Bacon's image of Christian faith appears to be static and limited while natural philosophy as it is described for the narrator in the story is dynamic and limitless in nature. Some scholars have questioned Bacon's sincerity of belief in

what he says concerning Christian virtue. Timothy Howard (1982) Paterson, for instance, argues that “[a]n open avowal of atheism, agnosticism, or even milder forms of heterodoxy would probably have cost Bacon his position, reputation, and livelihood, perhaps his freedom or his life” (pp. 8-9). So in order not to deny himself the chance to be heard or even supported by a great many decent and respectable scholars of his time, Bacon seems to have attached exaggerated importance to the Christian paradigm in his works. The charges of bribery brought by the Parliament against him and his subsequent confession as well as his clever strategies to “ditch” his political rivals evidently reveal that he was not seriously considering Christian morality in practice. Bacon dedicated many of his works like *Novum Organum*, *Great Instauration* and *Advancement of Learning* to King James I. In his *Advancement*, for instance, he especially caters to religious sensitivity of his time. In *New Atlantis*, however, Bacon’s image of an ideal religion is illusory and farfetched. It is intentionally divested of its controversial qualities or, to put it more positively, its inherently dynamic characteristics. Travis DeCook (2008) in his essay entitled “The Ark and Immediate Revelation in Francis Bacon’s *New Atlantis*” argues that, “thus, Bensalemite revelation obviates both the need for humanist philology and textual criticism, through which accurate texts and translations are achieved and the lengthy and occasionally tumultuous councils and debates associated with canon formation” (p. 116).

Historically, Bacon writes his work at the time when the dominant religious paradigm of the Middle Ages has spent most of its potency and the modern scientific paradigm is taking root. ‘Religion’ as the sole framework of ‘truth’ is gradually substituted by the ‘scientific’ paradigm to account for phenomena in the world of reality. However, this does not necessarily mean that all the traces of the religious paradigm have vanished altogether. In this shift from one epistemological phase to the next, certain discursive practices die out while certain others make their presence felt in the context of another dominant paradigm. By now it is obvious that the concept of paradigm as a framework for explanation transcends the boundaries of a certain discipline and enters a

realm that would be given another name (i.e., science) in the coming centuries.

Despite all the seeming differences between science and religion, there are certain fundamental similarities, however. In their incipient stages of development when what we now call myths formed early man’s framework of reasoning, one could hardly tell religion and science apart. Mythology, perhaps the earliest recorded paradigm, is according to M. H. Abrams (2005),

a system of hereditary stories of ancient origin which were once believed to be true by a particular cultural group, and which served to explain ... why the world is as it is and things happen as they do, to provide a rationale for social customs and observances, and to establish the sanctions for the rules by which people conduct their lives. (p. 178)

The definition seems to include our modern notions of science and religion at the same time. As people gradually come to believe that an older paradigm cannot sufficiently account for the ‘anomalies’ in answering their questions, they gradually break away from the older framework. Perhaps one such break can be found in Plato’s hostile reaction to ancient tales of gods and goddesses in the name of philosophy. The new pattern thrived throughout the Middle Ages and was accepted as norms for ethical and philosophical speculations. The next important break set in during the Renaissance in the works of the pioneers of modern science like Galileo, Copernicus, and Bacon. This is the time when the seeming distinction between science and religion can be sensed more than ever before.

Not only does *New Atlantis* delineate what the ideal society should be like, it also reveals certain discursive shifts in the early decades of the seventeenth century. Implied in this shift from one model to the next is a question of power shifting from an old to a new locus. However, it does not always mean that the former has lost all its appeal for its adherents and cannot survive in the shadow of the dominant and evidently more favorable paradigm as Kuhn notices in the shift from one scientific paradigm to the next.

Despite all the differences between Bacon's notions of religion and natural philosophy in *New Atlantis*, one can find striking similarities in the way they exert their sway on the Bensalemites. The paradigmatic nature of religion and natural philosophy in *New Atlantis* reminds one of the idols of the theatre in *Novum Organum*. These idols are essentially based on the notion that the world is a stage (a popular motif in the works of Renaissance poets and playwrights) and they refer to prejudices stemming from philosophical systems: "the Idols of the Theatre are not innate, nor do they introduce themselves secretly into the understanding, but are manifestly instilled and cherished by the fictions of theories depraved rules of demonstration" (Bacon, 1952, p. 113). Kuhn believes that persuasion has a decisive role in establishing the paradigms. Both religion and natural philosophy (the two main pillars of Baconian utopia) rely heavily on *representation* as a strategy to persuade the islanders and the strangers.

In *New Atlantis*, the concept of theatricality in religion is introduced when the Governor of the House of Strangers tells the narrator and his companions about their conversion into Christianity. About twenty years after Christ's ascension, one night a large cross on a pillar of light appeared on the sea. The people of Renfusa rowed out toward the spectacle but when they came within about sixty yards of the spectacle they could go no further. More like the spectacles in an Elizabethan theatre, the boats gathered around the pillar: "the boats stood all as in a theatre, beholding this light, as an heavenly sign" (Bacon, 1999, p. 159). Only the boat carrying a wise man of the society of Salomon's House managed to get closer to find a small ark containing "all the canonical books of the Old and New Testament" as well as a letter from Saint Bartholomew explaining that he had been commanded in his dream to send the ark to the sea so as to bring these people "salvation and peace, and good-will, from Father, and from the Lord Jesus" (Bacon, 1999, p. 161).

The concept of theatricality also plays an important role in the history of science. During the 17th century, nature was frequently referred to as *theatrum naturae* or theatre of nature. Science started to adopt the same theatrical

strategies which had long been employed by the Roman Catholic Church in the form of elaborate religious rituals. The manifestation of this form of visual communication can be found in the Baroque style of architecture. The elaborate designs and overwhelmingly solid structure of the churches did not innocently serve a practical purpose; they surely meant to impress.

Bacon's main purpose in writing the work seems to be the depiction of "idealized representation of a scientific community" (Sargent, 1996, p. 147). The writer seems to have intended to picture "a vivid image of how his [i.e., Bacon's] notion of cooperative research based upon a rational division of labor would result in a great society dedicated to enhancing the lives of its members" (Sargent, 1996, p. 163). Notwithstanding all this, *New Atlantis* like many examples of *theatrum naturae* elicits awe and wonder from the visitors. Latour uses the metaphor of "staging" for lab experiments; what is more important is the spectacle rather than the "truth" (as cited in Coffey, 2004, p. 263). Our discussion on religion, science, and politics naturally leads us to admit that in all cases we should make a distinction between reality and appearance. It seems there are so many factors involved in our telling them apart that one can hardly manage to see them for what they are.

In the final episode, it is interesting that the father does not let the narrator see for himself what they have accomplished; the verbal form of communication keeps the narrator at a safe distance. This indirect form of acquaintance dramatically enhances the state of wonder in the narrator and the reader. The speaker can make much of all the potentials that manipulating the language can offer to further strengthen his position of authority. The narrator is then given the leave to apprise others of what he has been informed. The same indirect and awe-inspiring form of communication can be seen in the pillar-of-light episode. Here also the only person who is allowed to have a more direct contact is a member of Salomon's House; others are merely onlookers.

The ways scientific and religious paradigms are represented merge. The narrator's description of the formalities involved in

visiting one of the fathers of House of Salomon at the end of the story is reminiscent of the sumptuous ambience of churches and palaces,

We came at our day and hour, and I was chosen by my fellows for the private access. We found him in a fair chamber, richly hanged, and carpeted under foot, without any degrees to the state. He was set upon a low *Throne richly adorned*, and a *rich cloth* of state over his head, of blue satin *embroidered*. He was alone, save that he had two *pages of honour*, on either hand one, *finely attired* in white. His undergarments were the like that we saw him wear in the chariot; but instead of his gown, he had on him a mantle with a cape, of the same fine black, fastened about him. When we came in, as we were taught, we *bowed* low at our first entrance; and when we were come near his chair, he stood up, holding forth his hand ungloved, and in posture of *blessing*; and we every one of us stooped down, and *kissed the hem of his tippet*. That done, the rest departed, and I remained. (Bacon, 1999, p. 176; emphasis added)

Bensalem is a monarchy; however, no mention of the present king is made. Instead, the Fathers of Salomon’s House, as referred to above, are apparently entitled to enjoy a number of royal privileges. Gaukroger (2001) argues that “for Bacon, it is the sovereign who, in the image of Solomon, the philosopher-king, directs the work—and that it is the sovereign, rather than those who perform this directed work, who is the natural philosopher par excellence” (p. 131). Natural philosophy and political sovereignty have at least something in common: the former seeks to dominate nature and the latter intends to dominate people. Both of them owe a great deal to representation than reality *per se*.

In *New Atlantis* Bacon is essentially concerned with providing models. In *New Atlantis*, the fashioning of self, as described in Stephen Greenblatt’s *Renaissance Self-Fashioning* (1980), takes on a more social and political coloring. However, upon close scrutiny, one can find that the religious, political and scientific models suggested by Bacon in this

work, however different they may at first seem, for the most part adopt the same strategies to exercise control over their subjects. The emerging paradigms simply provide people with new frameworks of reference which only supply them with an *impression* of reality without ever allowing them to realize the inherently complicated nature of truth.

4. Concluding Remarks

Bacon’s utopian novel, *New Atlantis*, is apparently meant to picture the writer’s aspiration for an ideal society in which the Christian faith and the scientific institution called Salomon’s House jointly form the socio-cultural structure of the state without much interference. It seems that Bacon is designing his ideal society with an eye to his tenet of ‘double truth’, a doctrine advocated by some thirteenth-century Averroists who made a distinction between reason and revelation or philosophy and theology. In case the two contradicted, a group of Averroists gave the priority to reason and the other to faith. Bacon’s natural philosophy and Christian institution in his *New Atlantis* can be considered as corresponding to these two sources of authority (i.e., reason and faith). The doctrine of ‘double truth’ was condemned by the Church during the Middle Ages as for them, the principles of Christian faith were the only source of reference to decide what is true and what is not. It was the same tradition that tried and condemned Galileo Galilei for his insistence on heliocentrism in 1633. However, as time went by and as we come closer to the second half of the 19th century the ‘scientific’ paradigm seems to gain in stature. The relationship between the two paradigms in explaining natural and supernatural phenomena has been far from an easy one: at times one becomes hegemonic and at another time the other. There are also occasions that seem the two have a symbiotic relationship.

The present article shows the way the two seemingly different but inherently related paradigms of science and religion interacted in the socio-historical context of the 17th century England. The article also reveals how the hegemony of the Church in the late Middle Ages is gradually replaced by domination of the scientific paradigm within a time span of

two and half a centuries. Despite the similarities between the way paradigms work within the domains of science and humanities, it should be noted that the concept of 'revolution' which appears in the title of Kuhn's work should be applied to the realm of humanities with care. Therefore, neither the scientific nor the religious paradigms in and by themselves can claim to come up with an ideal model to answer all the common questions shared by the two domains: 'metaparadigm' is nowhere to be found!

References

- Abrams, M. H. (2005). *A glossary of literary terms* (9th ed.). Boston, Mass.: Thomson Wadsworth.
- Bacon, F. (1952). *Francis Bacon: Advancement of learning, Novum Organum and New Atlantis* (R. M. Hutchins, Ed.). Chicago: Encyclopedia Britannica, Inc.
- Bacon, F. (1999). *New Atlantis. Three early modern utopias* (S. Bruce, Ed.). Oxford, England: Oxford University Press.
- Coffey, D. (2004). As in a theatre: Scientific spectacle in Bacon's New Atlantis. *Science as Culture*, 13(2), 259-290.
- Darwin, C. (1859). *On the origin of species by means of natural selection, or the preservation of favoured races in the struggle for life*. London, UK: John Murray.
- DeCook, T. (2008). The ark and immediate revelation in Francis Bacon's *New Atlantis*. *Studies in Philology*, 105(1), 103-122.
- Draper, J. W. (1874). *History of the conflict between religion and science*. New York, NY: D. Appleton.
- Gaukroger, S. (2001). *Francis Bacon and the transformation of early-modern philosophy*. Cambridge, England: Cambridge University Press.
- Godfrey-Smith, P. (2003). *An introduction to the philosophy of science: Theory and reality*. Chicago: The University of Chicago Press.
- Halleck, R. P. (1913). *Halleck's new English literature*. New York, NY: American Book Company.
- Handa, M. L. (1986, March). *Peace paradigm: Transcending liberal and Marxian paradigms*. Paper presented at International Symposium on Science, Technology and Development, New Delhi, India.
- Jamison, A. (2006). Social movements and science: Cultural appropriations of cognitive praxis. *Science as Culture*, 15(1), 45-59.
- Kuhn, T. S. (1962). *The structure of scientific revolutions* (1st ed.). Chicago, IL: University of Chicago press.
- Kuhn, T. S. (1996). *The structure of scientific revolutions* (3rd ed.). Chicago, IL: University of Chicago Press.
- Küng, H. (2003). *Christianity: Essence, history, and future*. New York, NY: Continuum.
- Müller, F. M. (1882). *Introduction to the science of religion: Four lectures delivered at the Royal Institution, in February and May, 1870*. London: Longmans, Green.
- Ousby, I. (1993). *The Cambridge guide to literature in English*. Cambridge, England: Cambridge University Press.
- Paterson, T. H. (1982). *The politics of Baconian science: An analysis of Bacon's New Atlantis* (Unpublished doctoral dissertation). Yale University, Connecticut.
- Rudwick, M. J. S. (2014). *Earth's deep history: How it was discovered and why it matters*. Chicago, IL: University of Chicago Press.
- Sargent, R. -M. (1996). *Bacon as an advocate for cooperative scientific research. The Cambridge companion to Bacon* (M. Peltonen, Ed.). Cambridge, England: Cambridge University Press.
- Stableford, B. (2003). Science fiction before the genre. In E. James & F. Mendlesohn (Eds.), *The Cambridge companion to science fiction* (pp. 15-31). Cambridge, England: Cambridge University Press.
- Tylor, E. B. (1871). *Primitive culture: Researches into the development of mythology, philosophy, religion, language, art, and custom*. London, UK: John Murray.
- Voltaire. (2005). *Letters on England. The project Gutenberg ebook*. Retrieved from <http://www.gutenberg.org/files/2445/2445-h/2445-h.htm#startoftext>