

Francis Bacon's Alphabet of Nature and The Triple Tau:

How an obscure 1679 publication shows Bacon's Initiative Method in action and suggests an early origin for Royal Arch Freemasonry

1. *"The glory of God is to conceal a thing, but the glory of the king is to find it out"*

The Advancement of Learning (1605), adapted from the Book of Proverbs

2. *"Let the first difference of Method then be this : it is either Magistral or Initiative. Observe however that in using the word "initiative," I do not mean that the business of the latter is to transmit the beginnings only of sciences, of the former to transmit the entire doctrine. On the contrary I call that doctrine initiative (borrowing the term from the **sacred ceremonies**) which discloses and lays bare the very mysteries of the sciences."*

3. *"Another diversity of Method there is...Let the one then be distinguished as the Exoteric method, the other as the Acroamatic... The intention of it (ie the Acroamatic method) however seems to be by obscurity of delivery to exclude the vulgar (that is the profane vulgar) from the secrets of knowledges, and to admit those only who have either received the interpretation of the enigmas from the hands of the teachers, or have wits of such sharpness and discernment as can pierce the veil."*

De Augmentis Scientiarum (1623)



Illustration 1. History of the Royal Society Frontispiece

1. Introduction

1.1 Francis Bacon and The Great Instauration

At the beginning of the 21st Century, Francis Bacon (1561-1626) is an almost a forgotten figure. Yet he was once regarded as a seminal influence in the development of modern science and the society that depends on it. The above image is the frontispiece from Thomas Sprat's work *The History of the Royal Society of London* (1667). Bacon is pictured on the right (Viscount Brouncker, on the left, was the first president of the Royal Society and King Charles is represented by the bust in the middle).

The Latin words written beneath Bacon on the chequered floor say *Artium Instaurator, Restorer of the Arts*. This is a reference to Bacon's Great Instauration, a project meant to restore and recreate the arts and sciences which Bacon believed had flourished in the ancient world but been lost through time. Bacon compared this work to rebuilding Solomon's Temple, or the Temple of Wisdom.

Bacon's work may be divided into two parts: exoteric and esoteric. The exoteric or public part involves a vast, collaborative scientific endeavour based on experiment, information sharing and analysis, which has come about much in the way he envisaged. In view of his criticisms of superstitious occultism and the pretentiousness of oral traditions, it may surprise some that he also saw a role for an esoteric or reserved tradition, but it is a fact that he did so. There are few demonstrable and incontrovertible examples of Bacon's Initiative and Acroamatic methods in operation. This paper shows one, which is important for two main reasons

- I) It shows Bacon as a precursor of the age of the computer
- II) It sheds surprising light on the history of Freemasonry and its relationship to early modern science

Point I) is covered in as-yet unpublished research. This article demonstrates Point II).

1.2 About This Research

The present article is an excerpt from an unfinished PhD on the religious and Hermetic aspects of Francis Bacon's scientific writings. This research was begun under the supervision of Graham Rees, the leading expert in this field, in 1996, but the research as a whole remains unpublished.

My particular interest is in Bacon's science and its relationship to Hermetic philosophy and early modern science. Yet among various 'peripheral' findings, I have found grounds for several corrections to popular views of the history of Freemasonry and Rosicrucianism. When my work is published in its entirety, I hope to have the opportunity to document and reference these peripheral findings in full. For now, it is sufficient to note that many historians of science have never read Bacon's works, nor the large quantity of relevant 16th and 17th Century literature in which research is grounded. No doubt many other significant findings await those who approach this literature from an interdisciplinary perspective.

1.3 Summary of Key Findings In This Paper

- A collection of Francis Bacon's unpublished writings published in 1679 by Thomas Tenison, future Archbishop of Canterbury, suggests strongly that Royal Arch Freemasonry was already in existence in 1679, in a recognisable form.

- The term Triple Tau is presented in a prominent manner near the start of the manuscript called the *Abecedarium*. The Triple Tau is a central symbol of the Royal Arch. Taken in context with many other pieces of evidence from Bacon's writings and those of his followers, the chances of this being mere coincidence are vanishingly small.
- The evidence is not strong enough to associate Bacon himself with Freemasonry, nor to push the Royal Arch back earlier than the post Restoration period from the 1660s onwards.
- But the Royal Arch (or an earlier form of this rite) must have spread widely enough that one or more initiates in 1679 wished to associate Bacon's science with Freemasonry in a way that would be unmissable to "those in the know", and meaningless to others.
- Whether or not Bacon had anything directly to do with Freemasonry, Bacon's philosophy and Speculative Freemasonry share significant assumptions. If Bacon was not a Freemason, he was in a broader sense the most 'Masonic' of all philosophers.

1.4 About the book *Baconiana*

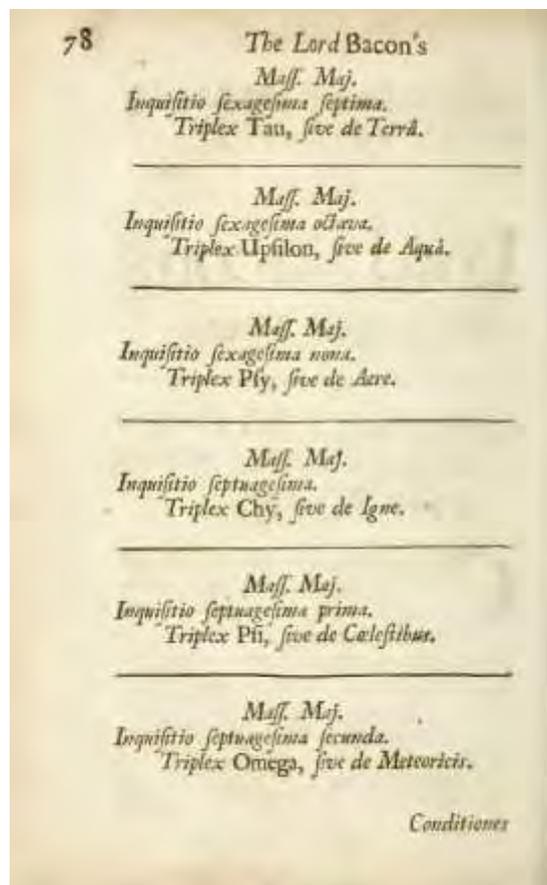


Illustration 2. *Baconiana* page 78

A posthumous collection of some of Francis Bacon's unpublished writings appeared in 1679 under the name *Baconiana*. These papers were published by Thomas Tenison, later Archbishop of Canterbury, who had received them in a chain of transmission going back directly to Bacon.

One of these writings is called *Abecedarium Novum Naturae*, and it appears to be an excerpt from a longer philosophical writing. The basis of the work is a catalogued series of research projects, coded by numbers and letters of the Greek Alphabet.

The first of these research projects or “Inquisitions” named in the *Abecedarium* fragment in Baconiana is named the 67th *Inquisition* and designated as Triple Tau, or Terra (Earth). An *Abecedarium* is an ABC book, which fits with Bacon's pervasive metaphor that science is learning to read in the Book of Nature and that to do that we must first learn Her letters, to some degree “becoming like a little child”. (I explain more about Bacon's metaphor of the Alphabet of Nature and the ABC book, and its scientific and religious connotations, in a related as yet unpublished article).

An apparently complete version of the manuscript of the *Abecedarium* was sent to Paris, where it languished until the end of the 20th Century. However even if Tenison in fact possessed a complete copy identical to the Paris manuscript, it appears that starting the excerpt with “Triple Tau, or Terra” was deliberate, a useful contrivance. (The capital initials of these words themselves form 3 Ts, or a Triple Tau, in the Latin original).

Bearing in mind Bacon's strategic use of targeted means of information dissemination (outlined later in this paper), which recognises the value of concealment, direction and misdirection, I suggest that either Bacon or one of his followers presented this as a deliberate “fragment” in order to achieve several ends.

Firstly, the 12 Inquisitions described in the *Abecedarium* fragment give enough information to reconstruct the incomplete Part IV of Bacon's Great Instauration, elucidate its link with the *Novum Organum* of Part II, and to build the logic machine or intellectual engine it implies. There was enough information in Bacon's published writings by 1679 to reconstruct his entire Alphabet of Nature from just these 12, but by withholding the first 66 Inquisitions without explanation, Bacon or his executors compelled highly motivated readers to do the work themselves, this being an example of the Initiative Method.

Secondly, by highlighting “Triple Tau” and “Terra” so blatantly the editors released a significant clue into the public domain, with implications for the book's readers in 1679 and for readers today.

The Triple Tau is a key symbol in a Masonic tradition called the Royal Arch. This could be mere coincidence, but when the quantity of proto-Masonic symbolism in Bacon's writings and title pages and frontispieces is factored in, alongside the the presence of Freemasonry among the founders of the Royal Society, it is unlikely to be coincidental (see Illustration 4).

This appears to be an example of the well known principle of creating a forest to hide a tree. It gives “plausible deniability” because the editor could simply say “sadly the first 66 Inquisitions are at present missing. There is no more significance that this fragment starts with Triple Tau than with, say, Double Beta or Single Kappa.” Except of course, there are no comparable symbols described by a mutliplier and a Greek letter, like Triple Tau.

It is important not to exaggerate or misconstrue this finding. It does not prove that Francis Bacon was a Freemason nor that his science is intrinsically Masonic. Both of these may turn out to be partially true, but evidence is lacking. If we knew for certain that Bacon had specified in his will that Triple Tau be highlighted in this way, this would support the argument that he was aware of Royal Arch Freemasonry and that it existed as early as the 1620s. But it is possible that it was only his executors in 1679 who deliberately mutilated the manuscript in this fashion.

On either hypothesis, I believe the *Abecedarium* demonstrates beyond reasonable doubt that in 1679 there were already Royal Arch Masons. In addition, this implies that Freemasonry had spread and diversified sufficiently that Tenison and/or his circle wished to show to the “sons” that Bacon's work was closely relevant to Freemasonry and to draw attention to the deep compatibility between the Great Instauration and Freemasonry.

2. Francis Bacon and Proto-Freemasonry

2.1 Clarifying Bacon's Relationship with Freemasonic Symbolism and Aspiration

Much speculative and conspiratorial nonsense is written about Freemasonry and Rosicrucianism, and Bacon has not escaped being associated with certain wild theories. In Bacon's case, these arise from an anachronistic reading of his thought and of Masonic symbolism. It is true that there are numerous elements in Bacon's writings that *seem* Masonic, such as

- The aim of science - to rebuild the Temple of Wisdom
- The use of the language of architecture and building as metaphor throughout Bacon's writings
- The pervasive use of Biblical and Hermetic symbolism to demonstrate the spiritual purpose of science
- The focus on good works and practical endeavour
- The focus on King Solomon as the epitome of the philosopher and wise ruler

However, this is to put the cart before the horse. These were relatively widespread themes in the early 17th Century milieu. They were to some degree associated with the Stuarts and with Freemasonry in Bacon's lifetime, but they were not unique to any secret society. In many respects they represented a phase in Renaissance Philosophy which was in the process of waning, and preserved by Speculative Freemasonry when they had otherwise 'gone out of fashion'.

If anything, the strongest case that can be made is that Francis Bacon was such a powerful proponent of the particular blend of Biblical, hermetic and scientific thought that was uniquely possible in his time, that later traditions like Speculative Freemasonry were bound to be influenced by his work.

We do not yet know how Freemasons thought about the Craft before 1717, and it is likely there was considerable divergence. We also do not know whether Bacon participated in some secret society with rites similar or identical to later Freemasonry.

Yet in view of the extraordinary influence that Bacon's thought had on the thought of late 17th Century and then the Enlightenment, my thesis that the Royal Arch and its symbolism of the Triple Tau were established in certain Masonic (or proto-Masonic) circles by 1679 casts important light on the history of the relationship between Freemasonry and science.

2.2 Vision of the Scientist: Lone Mathematical Genius or Cooperative Decoder of Nature?

Francis Bacon's former reputation as the 'father of modern science' may seem strange to many of us today, including scientists and historians of science. After all, he did not make any of the great discoveries or theoretical breakthroughs that are normally given as examples of the transition from

the pre-scientific to the scientific epoch. Yet it was his description of how science ought to function that is closer than any previous thinker's vision to how science developed.

It is still commonly stated that Bacon's contribution to the development of science was to criticise superstition and abstract thinking, and to suggest that true science involves conducting lots of experiments based on what the senses reveal, from which laws of nature can be derived by Induction. If this were all Bacon had achieved, it would be deeply unimpressive, because

- I. there were others before and after Bacon who did experiments, and the question remains what kind of experiments should be done and how they should be interpreted
- II. Scientists well know that theories do not just emerge from countless experiments. Hypotheses are developed, tested and then refined. Karl Popper called this the hypothetico-deductive method and it is a truer description of how science normally works than the crude idea of Induction falsely ascribed to Bacon
- III. Theory and advanced mathematics play an essential role in science, particularly in physics; and science often develops for decades before theories identified as valid can be tested experimentally. A mere experimenter is not a scientist.

However, a close reading of Bacon's major works shows clearly that Bacon was advocating essentially the same process as the current hypothetico-deductive method. From preliminary experiment and research the scientist derives provisional axioms (theories or laws) which she then tests through new experiments. Bacon gives a very clear outline of the method in *Novum Organum*, although it seems that none of his scientific followers clearly understood this.

The main reason why Bacon's method was neglected and eventually forgotten is probably the influence of Isaac Newton, who proceeded in a completely different way to Bacon.

- I. Bacon advised deferring generalisation and pure mathematics until sufficient data and lower axioms (ie practical and implementable scientific findings) had been established. But Newton presented universal mathematical Laws of the utmost generality, independent of practical findings and virtually untested in practice.
- II. Newton incorporated principles from his occult interests (especially alchemy) into his science. Hence Newton's invention of Indigo to bring his number of colours in the rainbow up to the magical number 7.
- III. Where Bacon advocated a communal, fraternal quest for knowledge in a spirit of cooperation and for the common good, Newton was very much the lone genius, proud and competitive who trusted more in his mathematical ability than in testing his science against practice. Although the progress of science and technology depends upon collective and peer-reviewed research, the popular model of the scientist is still closer to Newton or Einstein – as if genius had nothing to do with the need to verify theories and submit to peer review.

2.3 Religion, Science and Rosicrucianism: Bacon's Middle Way

This last point is Bacon's single most important contribution to the history of science. His vision of science as a fraternal endeavour 'to the Glory of God and the Relief of Man's Estate', based on a rational experimental method which is tested against experience and progresses slowly but surely, was the vision that inspired the Royal Society and became the template of organised science throughout the scientific world.

To a remarkable degree, Bacon's diagnosis of what needed to change was correct and his predictions have been fulfilled. He even states in *Novum Organum* that it is likely that his method will be misunderstood, but that as long as collective experimentation focused on practice is carried out, this does not matter in the long run. Organised science is eventually bound to discover the truths of nature simply from the sheer quantity of data and the consequent identification of axioms.

Bacon's Induction was ahead of its time and misunderstood, but the template for organised science outlined in *New Atlantis* became the basis for the Royal Society. Like a computer program composed of human beings, the increasing global network of scientists started to 'do' Baconian science, despite the continued fixation on the idea of the 'lone genius'. *New Atlantis* presents the vision of a scientific yet pious priesthood or brotherhood on the island of Bensalem engaged in collective scientific research for the good of humanity.

As I will discuss in a future paper, it is the invention of the computer that has finally made Bacon's method both intelligible and viable. But how could Bacon have had such a prophetic and penetrating view of the sociology of science?

Individual scientists may be fascinated by 'knowledge for knowledge's sake', but religion, political science and spiritual or occult movements usually see a greater purpose to the individual and collective development of knowledge. To give a brief description of a vast subject, there were two utopian models of knowledge that were particularly influential at the beginning of the 17th Century. One was the Rosicrucian Movement which proposed a kind of Christian alchemical philosophy, rooted in Protestantism. The other was Bacon's science, which adapted the vision of a tolerant, individualistic and spiritual Christianity but distinguished itself from the Rosicrucian writings through numerous attacks on occult and Hermetic authors and by advocating a rigorously experimental science.

The direct utopian ambitions of the Rosicrucian movement were tragically dashed by the failure of Frederick V and Arabella Stuart (the Winter King and Queen of Bohemia) to preserve their reign, and the ensuing 30 Years War. Moreover, even those sympathetic to the idea of magical or alchemical Christianity were challenged not merely by religious and political opposition, but also by the rise of various materialist and rationalist philosophies that directly contradicted such Hermeticism and Rosicrucianism. In this changing epoch, Francis Bacon was almost unique in offering a 'middle way' between religion and material science.

2.4 Baconian Science, Freemasonry and the Royal Society

We know that during the last days of Charles I's reign and into the English Civil War, small circles continued to meet and discuss philosophical subjects. A notable member of these circles was John Wilkins, who became Bishop of Chester. The work of these circles eventually gave rise to the Royal Society.

A full history of philosophy and science in England between the time of Bacon's death in 1626 and the founding of the Royal Society in 1662 has yet to be written. But it is clear that Bacon's Great Instauration formed its basis. It is very legitimate to ask 'why' – as stated above, Bacon was not representative of other scientists or philosophers. Although a thinker and writer of genius, he was no Copernicus, Kepler or Galileo: it is not clear why his prestige was such that his vision could take such a powerful and early hold.

I suggest the main reason is that the Baconian concept of science as a fraternal, practical and benevolent institution appealed to those who either belonged to fraternal associations or wished to do so. In an age where England and Europe continued to suffer under endless religious war,

ignorance and bigotry, the idea of working for tolerance and the good of humanity in small idealistic groups must have been powerful. It is obvious that Freemasons could easily identify the concept of the Great Instauration and the vision of the Isle of Bensalem with the goals of their own fraternity.

Elias Ashmole, the antiquarian and philosopher, is the first attested example of a man initiated into Freemasonry in England (in 1646). Another important patron of the new learning was Sir Robert Moray, a Scot and Freemason. Moray was also the patron of Thomas Vaughan the Welsh writer on alchemy and twin brother of Henry Vaughan the poet. Vaughan translated the seminal Rosicrucian document the *Fama Fraternitatis Rosae Crucis* (1614) into English, and also referred to Bacon as an authority.

By the time that Bacon was portrayed on the frontispiece of Sprat's *The History of the Royal Society of London*, his concept of an Instauration or Restoration was already pervasive. The idea of science as being akin to a great rebuilding project must have been particularly popular not just following the Restoration (a near translation of Instauration) but also following the Great Fire of London, when cognoscenti of the time such as Sir Christopher Wren and Robert Hooke were directly involved in the programme of rebuilding.

As such, it is fundamentally unimportant whether Bacon was a Freemason, a member of some other Society, or simply a lone genius. Similarly I do not intend to argue that science was created by Freemasons, nor that all the early significant scientists were Masons. Even if some early scientists were Freemasons and a Masonic style of philosophy was influential, it is undeniable that many great scientists were not Masons, and modern science was born from a variety of influences. However, I do claim that Bacon's systematic metaphor of science as Rebuilding the Temple of Wisdom and all the associated language of architecture and mystery religion cannot be ignored. The distinctively Baconian concept of the Great Instauration anchors a Masonic or Quasi-Masonic concept right at the heart of organised science as well as casting new light on the history of the Royal Arch itself. Bacon himself put it best of all in a phrase that sounds more than a little Masonic:

“But the course I propose for the discovery of sciences is such as leaves but little to the strength and acuteness of wits, but places all wits and understandings nearly **on a level**”

3. Archbishop Tenison, The Unveiling, and the Royal Arch

3.1 The beginning of the unveiling

“And those who have true skill in the Works of the Lord Verulam, like great Masters in Painting, can tell by the *Design*, the *Strength*, the *way of Colouring*, whether he was the Author of this or the other Piece, though his name be not on it.”

[Baconiana, ed. Thomas Tenison]

Thomas Tenison is remembered as an Archbishop of Canterbury who crowned two monarchs and endowed schools, including Archbishop Tenison's School, Lambeth which still exists and is near to the Archbishop's seat at Lambeth Palace.

Born in 1636 Tenison was ordained in 1659. Beyond the life of an active 17th Century cleric, Tenison clearly had connections to circles engaged in humanistic endeavours outside theology and the work of the Church of England. Before taking Holy Orders Tenison had undertaken some training in

medicine, and this alone would have drawn him into contact with circles where science, philosophy and occultism were studied.

The year after the publication of *Baconiana* in 1679, we find Tenison taking up a prestigious post at St Martin in the Fields, presented by Charles II. He attained the rank of Bishop of Lincoln in 1691 and Archbishop of Canterbury in 1694, retaining this role until his death in 1715.

One of Tenison's bequests to Lambeth Palace Library was the voluminous correspondence of Anthony Bacon, Francis' brother. Anthony was an Elizabethan diplomat, which is also to say spy, who spent much of his career working in Europe. Both Anthony and Francis had a lifelong involvement in intelligence work, and in the 1590s put these talents to use as leaders of the Earl of Essex's faction. As an agent, Anthony Bacon's employer was Sir Francis Walsingham, head of Elizabeth's intelligence network.

There is no reason to suppose that Tenison was only concerned with Bacon's writings due to the chance event of the papers coming to him through a bequest. It was not uncommon for clergy to take an interest in scientific and humanist concerns. Indeed, as already mentioned, Bacon's chaplain Dr. William Rawley was his executor and controlled his posthumous literary estate. Another cleric deeply connected with the origins of modern science was John Wilkins, later the Bishop of Chester, who published significant works of early science fiction, cryptography and philosophy, each showing the influence of Bacon.

Tenison's statement quoted above is very remarkable, suggesting that there were works available in the late 17th Century written by Bacon but attributed to someone else. There are references to Bacon suggesting that he was a 'concealed poet', dating from the 1590s, but as far as I am aware, Tenison's is the first statement by a reputable figure after Bacon's time clearly affirming that Bacon was a concealed, and masterly, author.

Dr. William Rawley had hinted that there was some kind of mystery associated with Bacon and both Rawley and Tenison refer to Bacon's deliberate intention to withhold certain writings for particular times and places. It has never been suggested that Tenison was a fanciful or imaginative man, and it is hard to see a reason why he would have wished to invent stories or build up Bacon's prestige. Indeed it is most likely that he would never have made this remark unless there was support for it in the collection of papers, which passed from Bacon to William Rawley, to John Rawley and thence to Tenison.

3.2 Tenison, Freemasonry and the Beginnings of Science

The Freemason's Monthly Magazine Vol 4 1845 names Tenison as a Freemason. This does not prove that he was, and all such claims prior to 1717 should be treated with some caution. However, the almost blatant way in which the phrase Triple Tau is highlighted in *The Abecedarium*, if noticed by later Masons, would surely have tempted Royal Arch readers to conclude that not only that Tenison, but most likely Bacon were Masons, and that Freemasonry specifically the Royal Arch are closely connected with Bacon's project. This in turn would have alerted them to philosophical antecedents long before 1717. The possibility that they were wrong and that this was mere coincidence would not have stopped readers used to codes, ciphers and secrets from making this assumption.

Whether or not Tenison was a Freemason, he represented the strand of Anglicanism that shares the values of tolerance, practicality and opposition to fanaticism with the Enlightenment era focus on these same values by many authors associated with Freemasonry. In a century marred (as had so many centuries in the Christian era) by religious and political war, enlightened clergy such as

Archbishop Tenison and Bishop Wilkins must have seen the value of a science that inculcated moderation and focused on utility. Correspondingly, tolerant and broad-minded clergy must have been welcome to free-thinking and progressive circles, less than a century after the execution of Giordano Bruno and the imprisonment of Galileo and other scientists for challenging the authority of the Roman Catholic Church on matters of science.

Note also the three terms Design, Strength and way of Colouring bears a suspicious similarity to the 3 Pillars of Masonry – Wisdom, Beauty and Strength. A “Design” needs to embody Wisdom, and Colouring gives Beauty.

4. The Triple Tau

4.1 The Triple Tau and Multipurpose Symbolism



Illustrations 3. Triple Tau (enclosed within triangle and circle)

the structure of the 3 Degrees of Apprentice, Journeyman and Master Mason have formed its basis since at least the foundation of the United Grand Lodge of England in 1717.

Almost as far back as 1717, we find references to the Royal Arch, though some branches of Masonry regard it as a continuation and culmination of Master Mason and others see it as a separate 'side degree' of which there are many in the various Masonic traditions.

However it is viewed, the Royal Arch is one of the most important and earliest attested elements beyond the 3 Craft degrees. Already in the mid 18th Century, a split between “Antients” and “Moderns” was developing. A leading advocate of “Antient” Freemasonry, the Irishman Laurence Dermott provided some of the earliest public remarks on Royal Arch Masonry. The main theme of the Ritual Drama of the Royal Arch is that of rebuilding Solomon's Temple. And one of the main symbols of this Rite is the Triple Tau.

Conventional histories of Freemasonry are careful not to stretch Masonic evidence back beyond the beginnings of real commentary from the 18th Century onwards. In particular, there has not been much discussion of early forms of the Royal Arch.

But adding our knowledge of Freemasonic circles associated with early modern science and the Royal Society; Vaughan's interest in Bacon and patronage by Moray; the allegation that Tenison himself was a Mason; and Bacon's pervasive, almost obsessive use of the metaphor of the Instauration as rebuilding The Temple of Wisdom, to the evidence of the Triple Tau, it is plausible to suggest that something very like The Royal Arch as known to the 18th Century was already in existence in the 17th. Add its association with the "Antient" tendency and we can suggest that the Royal Arch may be one of the oldest components of Speculative Masonry. It may even be older than some parts of the Craft Degrees.

One final argument that Masonic historians might consider is that the Royal Ark Mariner degree contains symbolism which is very plainly demonstrated in various frontispieces of Bacon's late works and in particular in his posthumous *New Atlantis*. The Biblical and Masonic use of the symbols of the Royal Ark and the Royal Arch are connected in ways that go beyond the remit of this paper.

4.2 The Abecedarium Fragment

The *Abecedarium* fragment's chief relevance is that it is a prime example of Bacon's method of the semi-covert transmission of information: he endorses this in his writings, but scholars not previously identified any confirmed examples of its use by Bacon or his followers. The cleverness of the fragment is that, by appearing in its mutilated (or apparently mutilated) form by starting at the 67th Inquisition it accomplishes three things that it would likely not have achieved if the Paris manuscript had been published *in toto*.

- I. It forced Bacon's motivated scientific readers to assemble his various remarks about "abstract physics" and the Alphabet of Nature, to insert the first 66 Inquisitions. The relevant lists are contained in different forms in different works, and understanding and sifting these is an important part of grappling with Bacon's unique form of atomism
- II. It makes the use of the "logic machine" implied by the *Abecedarium* easier to understand, by pairing readily understood terms like Earth and Water with Qualities like Durable and Transitory, so we can understand it is a device for generating research questions like "what makes fire durable?" This is in the tradition of Lull's *Ars Magna*, and Bruno's *Art of Memory*.
- III. It enables the phrase Triple Tau to be placed prominently at the beginning of the list, to highlight the Royal Arch connection. Whereas if buried at number 67, it might have given Masons pause for thought, but would be more likely to be shrugged off as mere coincidence in a long and tedious form of cataloguing.

I expand upon points I) and ii) in the companion article to this paper, where I outline reasons for seeing Bacon's science not just as a historical oddity that was soon made irrelevant by Newton, but on the contrary, more relevant than ever in the age of the Computer and Big Data.

5. Public and Private Literature in Bacon's Writings and Milieu

5.1 The Relative Importance of Printed Books and MSS

At any moment during his long literary career, Francis Bacon was at work on a number of manuscripts. In fact, if it had not been for the historical accident that Bacon experienced a tragic fall from his office as Lord Chancellor on a charge of corruption (which arguably involved a miscarriage of justice) many of these would never have seen the light of day, as Bacon had the free time to publish many of his greatest works between his fall in 1621 and his death in 1626. Instead of appearing in magnificent Latin in large printed books, these would have remained manuscript drafts, the result of his thought and experiment in his leisure hours.

In Bacon's day and for some decades after, the manuscript remained an important method of sharing information. In some areas, such as the controversial disciplines of magic, alchemy and the newly arising sciences, the manuscript remained more important than the printed book. In Elizabeth I's reign, for example, there was in effect a form of state control, even censorship, of book publication. Religious publications still formed a significant quantity of all printed books. Much poetry was only circulated privately in manuscript forms, and a significant quantity of literature was first published anonymously, or pseudonymously.

Scholars collected, copied and disseminated manuscripts. Bacon was actively involved in this process throughout his life, even employing secretaries to assist with this (whom he referred to on one occasion as his "good pens").

5.2 Bacon's Literary Career

Though well-connected and the son of Lord Chancellor Sir Nicholas Bacon, Francis was born a commoner. Recognised as a child prodigy who went up to Cambridge at the age of 12 and left without completing his degree, complaining that the University had nothing to teach him. Like others of his background and gifts, the natural career path was that of lawyer and statesman. He had early experience as a courtier attending the diplomatic mission of Sir Amyas Paulet to the French Court at the age of 16; this marked the beginning of a lifelong interest in cryptography and what we would now call Information Science.

Francis Bacon followed the legal route, yet although he was a good lawyer and skilled orator, his greatest gifts were literary and intellectual. Despite Queen Elizabeth's liking of poetry and literary artifice, the approved culture of her reign was distinctively Puritan and grave. Bacon was an indefatigable reader, researcher and writer throughout his career and his political enemy Robert Cecil was able to use this against him by slyly insinuating that Bacon was a 'speculative' man. In the Puritan and Machiavellian world of Elizabeth's Court, the judgement of a writer or philosopher was not to be trusted on matters of politics and statecraft.

Although an Member of Parliament and a trained lawyer, by his 30s, Bacon's career was slow to develop: he was significantly underemployed for a man of his intelligence and energy. Drawn into the world of court factions and intrigues in the final years of Elizabeth I's reign, his main active role seems to have been as chief adviser and sometime speech writer for the Earl of Essex, a favourite of Elizabeth who was later executed for treason.

At this time, Bacon began to compose various works on natural philosophy (the science of that time) as well as moral and political philosophy. He is also known, through his own admission and that of others, to have penned works poetry and drama, though the question of their existence and/or identity has remained controversial.

From his early years, Bacon had the extraordinary and prophetic intuition that the Aristotelian philosophy which had dominated academic philosophy for almost two millennia was not fit for purpose. Science as we know it did not exist. Bacon saw many of its key elements, but there were no books nor any methodology on which he could base his thoughts. As such, he began experimenting with proto-scientific works. These were as much speculative as philosophical because Bacon saw that it was not enough to perform experiments; what was needed was what we now call the scientific method.

A number of manuscripts going back to the turn of the 17th Century show his initial attempts to present this new form of natural philosophy. While these were still in development, Bacon did not sanction most of them for publication. Others though essentially complete were never intended to reach the public in his lifetime.

His first great philosophical work *The Advancement of Learning* (1605) presented a scheme for a systematic approach towards scientific knowledge, not just of nature but the humanities and religion as well. It is one of the great masterpieces of philosophy in the English language, probably unmatched to this day in its scope and elegance. It contained a framework subtly based not just on academic categories but on the Hermetic philosophy so popular among those influenced by John Dee.

However there were no worked examples of science in this book. Nor was Bacon destined to have the time to focus on philosophical writing because from 1605 onwards he was steadily advanced by King James through a series of ennoblements and career progressions until by 1618 he was Viscount St Alban, the Lord Chancellor and arguably the most influential political figure in England.

Bacon had issued certain small works of natural philosophy, and had repeatedly critiqued previous kinds of philosophy. While pointing to the need for a new science, he had given little evidence of his own positive views. The first major presentation of his considered alternative was 1620's *Novum Organum*, where he gave a preliminary insight into his method and a partially worked example.

In Bacon's time, Latin was still the international language of philosophy and intellectual exchange. For this reason, he published his last and major works in Latin (including Latin translations of portions of his earlier English writings). Ironically, Bacon's attempt to link his new science to the old through the use of Latin language and Biblical and Hermetic symbolism has meant that to this day hardly anyone has understood the method contained in *Novum Organum*. Countless inaccurate University summaries of Bacon's method show that many professional thinkers have a fundamentally false concept of Bacon's Induction (in the course of research towards a PhD from 1995-1998, I did not find a single academic author who had correctly and completely characterised Bacon's view of the scientific method. Hopefully this has changed in the intervening years).

In some ways the fault lies squarely with Bacon. Yet it would have been hard for anyone who was not an experienced cryptographer at that time to grasp his ideas. In the age of the computer, anyone can understand Bacon's ideas. Ironically the people who can understand Bacon have no cause to read him, as the conventional summaries do not bring out this aspect of his thought.

5.3 The Great Instauration – 6 Parts, 2 Pillars and the Way Between



Illustration 4. *The Advancement of Learning* 1640 title page

Bacon modelled his Restoration of Science, his Great Instauration on God's Creation of the World in six days. Accordingly, his Instauration has six Parts. He published works relating to three of these Parts, making his concept of them clear. The other three parts are veiled – fragments relating to them appeared in certain printed books, but most were kept in private manuscripts. It is clear that this was a deliberate design, as shown by this title page from the 1640 edition of *The Advancement of Learning*. Although this edition was published after Bacon's death, the symbol is consistent with book illustrations from several of his works published in his lifetime, showing the symbolism of the Pillars of Hercules, and the ship sailing through and beyond them.

The first three parts are represented under Pillar surmounted by the Sun and the last three under the Pillar surmounted by the Moon, thus belonging to the 'night' realm of concealment. The polarity of Sun-Moon is also associated with that of Oxford-Cambridge and Science-Philosophy. These Pillars and the associated symbolism are not an arbitrary addition to Bacon's writings, but echo symbolic language throughout his writings. The symbolism should be easily understood by anyone acquainted with the pictorial language of Qabalah or Freemasonry.

5.4 After the Fall – The Baconian Enlightenment Postponed

One reason that Bacon's philosophy and indeed his life remained under a shadow was the humiliation and disgrace of his banishment from Court and London following a charge of corruption, specifically of taking bribes.

Despite the unlikelihood that Bacon had entirely clean hands in a corrupt Jacobean Court, it seems that his fall was engineered politically. There were others, including his accusers, whom history proves to have been far more corrupt; but Bacon had fallen foul of King James' favourite (and likely lover) the Duke of Buckingham. It is evident from correspondence between Bacon and King James that the King expected Bacon to 'go quietly' and Bacon, protesting his innocence, expected to be exonerated after going through the formality of resignation, but that this did not happen.

Those interested in the question of Bacon's alleged corruption and the Machiavellian political situation can read Nieves Matthews' *Francis Bacon: The History of a Character Assassination*. (For the more adventurous and patient reader there is a mine of supplementary information in the writings of Alfred Dodd, but be warned that Dodd was a fanatical believer in the claim that Bacon wrote the Shakespeare plays. If one can sift out the credulity and hero worship from Dodd's writings, there is a useful quantity of historical information that can be separated from Dodd's thesis.)

After Bacon's tragic political fall in 1621, his active career was over and he spent most of the remainder of his life at the family seat of Gorhambury at St. Albans, where he completed his literary masterpieces, as the central light of a literary and cultural group including Ben Jonson, George Herbert and other notables.

The intellectual and political climate had changed, not just in England. The defeat of the Winter King and Queen in Bohemia and the failure of the hoped for Rosicrucian Utopia dismayed Bacon, especially as King James had failed to intervene to support his own daughter.

Bacon had criticisms of the many superstitious elements in the occult traditions (which still remain in the esotericism of the present day). His writings were carefully positioned so as to be in broad agreement with the Rosicrucian manifestos, yet critical enough of occultism and heresy to avoid charges of heresy or partisanship that might have hindered his political career. Or indeed resulted in his execution if a future Monarch had embraced a fanatical religious opposition to any occult views.

Although many future occultists blithely associated Bacon with the Rosicrucian movement (and they were not wholly wrong to do so) Bacon's own standpoint was distinct. He believed that religion and science were totally compatible, and both necessary; the space where Hermetic Philosophy or occultism occurs is a legitimate space, but it is generally marred by a combination of pseudo-science and pseudo-religion. The correct way of reacquiring the Wisdom of the Ancients, of which occultism is a flimsy remnant, is through the correct application of religious life and thought, reflection and scientific experimentation, keeping them separate where necessary but also clarifying their relationships with each other.

It is evident that Bacon considered he had special knowledge which could not be demonstrated through this new scientific method, at least in his own time. His work on subtle matter ("spiritus") forms a large part of this knowledge. The preparation of the *Abecedarium* manuscript belongs to this period and was intended for those ready to go deeper than the first levels of empirical science, but like other works containing significant 'occult' clues – notably the *New Atlantis* – it was not published in Bacon's lifetime.

5.4 Authorship & Dissemination of Information in the Early Modern Era

As mentioned above, Bacon had a strong interest in what we now call Information Theory and in the art of effective communication. As a lifelong student and practitioner of cryptography, he was interested both in the techniques and the overall philosophy of how to conceal and reveal information – and in particular how the same information can be concealed from some and revealed to others.

At the present time, our assumptions about authorship and the purpose of publication are so far removed from Bacon's time that it is useful to state clearly the differences:

- Having one's name on a printed book read by the maximum number of people was not the goal of many writers, nor was it necessarily possible
- For students of philosophy, science or magic, manuscripts were often much more important. Many of these circulated privately and were explicitly intended *not* to be published.
- Very few kinds of books were available in Bacon's time, and for some time after. These were largely books on religion and morals, some technical works, and relatively little fiction and poetry.
- The idea that strangers would wish or would have the right to read one's private thoughts and creations, like poetry, was a strange one. In the rigidly hierarchical world of Elizabethan and Jacobean England, the idea that a Courtier would want the approval of commoners for their private writings, or required payment, would have seemed absurd.
- “Writer” was not a career, certainly not a dignified one. Books were produced by tenured professionals such as philosophers, theologians or doctors.
- Theatre was not a dignified profession, certainly not for a university educated person or someone wanting an official career. William Shakespeare was able to publish plays with his own name on them, and make a lot of money, precisely because there was no class taboo on someone from his social class publishing and claiming authorship of literature.
- Much as in the contemporary music, film and television businesses, multiple authorship and the collective reworking of material was common; in addition, the modern concept of copyright did not yet exist
- In the Elizabethan Age there was in effect a system of state censorship.
- With controversial or heretical manuscripts it could be dangerous to be named as an author, hence many works appeared anonymously or pseudonymously. This was harder to achieve with printed books, but was occasionally done.

In short, similar to the way in which the Internet encourages parodies, “mash-ups”, reworking or even theft of material, the manuscript-based literary culture of the Elizabethan age was governed by the flow of manuscripts and the ways in which they could be used: for study, enjoyment, creativity or payment.

5.5. Targeted Transmission, and the Posthumous Life of Bacon's *Abecedarium*

Dr William Rawley was Bacon's Chaplain and literary executor. Rawley evidently had a large corpus of unpublished manuscripts, some fragmentary and some more or less complete. In the decades after Bacon's death, various new works gradually appeared (one important collection was the *Resuscitatio* which appeared in several editions).

Anyone motivated to study the onward transmission of Bacon's writings in detail should consult the superb contemporary *Oxford Francis Bacon* editions. The *Abecedarium* itself has been published with commentary in Volume VI, edited by Graham Rees. For present purposes, it is sufficient to note that the philosophical and literary culture of Britain was different from that of other European cultures. It seems that Bacon and/or his executors carefully targeted both the private dissemination of manuscripts and the publication of printed books. One such 'hub' of publication was Holland, with its tolerance and openness to natural science, but others went to France (*such as the Abecedarium*), or into the safekeeping of private individuals.

The method of using alphabetic and combinatorial methods as philosophical or scientific tools was never as popular in England as in mainland European traditions. It has significant roots in Lull's Art and the work of Giordano Bruno (whom Bacon may have met during his visit to England). It later appears in another form in the work of Leibniz, who in turn shows the influence of Bacon's thought. And it shows distinct affiliations with the esoteric traditions of Judaism (Qabalah) and Islam (Sufism).

It is not clear why Bacon did not write at greater length about the Alphabet of Nature in his published works. One possible reason is that he did not wish his interest in a semi-Qabalistic method to be used to classify his work as "occult" to the detriment of his science. Another is that he wished to reserve parts 4-6 of his *Instauratio* for later ages than his own. Whatever the reason, the only known complete manuscript of the *Abecedarium* has remained largely neglected to the present day.

Graham Rees performed sterling work in demonstrating Bacon's abiding obsession with "spirits" and his attempt to develop what Rees called a semi-Paracelsian Cosmology using the categories of Sulphur, Mercury and Salt. This is interesting to historians of science. But it seems nobody has noticed that, looking at the *Novum Organum* as an early form of Computational Art, the *Abecedarium* is the first draft of a "program" for identifying the hidden laws of Nature at a molecular and even atomic level. I will be publishing a clear description of the method in due course, and it remains to be seen if any scientific establishments are motivated to build the databases required to run Bacon's method on contemporary computers.

6. Concluding Thoughts on Francis Bacon, Secrecy and Occultism

6.1 Francis Bacon and Secrecy

Bacon frequently criticised the tendency of occultism to claim secret knowledge and special transmissions. Not only did he regard this as imposture, the tendency of charlatans to resort to mystification. More importantly, he foresaw that science would require a vast collaborative effort of information sharing based on trustworthy experiment and communication.

Nonetheless, Bacon was a secretive man by temperament, profession and necessity. In the dangerous political climate of Elizabethan England, this was essential to his survival, not just because of his interests and career but also because of his probable homosexuality.

The circumstances surrounding Bacon's fall were probably the main reason that Rawley referred to the need not to “trend too near on the heels of truth” - much as sensitive State information is reserved for several decades at the present time.

Yet concealment is also a Divine Art as shown by the quotation which began this paper. Another saying associated with Bacon and his work was “Hidden Truth is Brought forth by time”, and following the principle that one should copy nature, he also adopted the method of concealing or obscuring truths at the same time as challenging his followers to uncover them. This was part of the “Initiative Method” and also the “Acroamatic Method” mentioned above.

6.2 Bacon as Reformed Hermeticist

As outlined, Bacon shared many presuppositions with the Secret Societies and Occult Philosophies of his time. But this emphatically does not mean that he can be fitted into any existing label, such as Rosicrucian, alchemist, Hermeticist or Freemason.

Bacon was very individualistic and had basic disagreements with every single one of the scientific, philosophical and occult movements of his time. This was largely due to the breadth of his interests and his willingness to challenge almost any old ideas in the realm of nature and the intellect (he never challenges Scripture, nor the possibility of Divine Revelation and Inspiration, but critiqued everything in the domain of the intellect).

As an intellectual with scientific and Hermetic interests, Bacon was in a delicate position. To give a very brief summary of Bacon's stance on what we would call Hermeticism or Occult Philosophy – he believed implicitly in the key elements of occultism: Angels, the subtle matter called Spirit, Plato's Forms and so on. However, he believed that almost all the information available in books of his time was wrong. He also thought he knew the reason for this – for centuries, people had been thinking without rooting their thoughts in experience. This applied both to science and what we would call religion.

For nature, Bacon envisaged extensive experimentation and the identification of the true laws of nature. But Bacon also thought there were sources of experience going far beyond what the science of his time used.

Even in the realm of nature, Bacon believed in ‘spiritus’, a subtle ethereal matter pervading the tangible realm. This is actually the key to his entire scientific philosophy. But Bacon had an insoluble exegetical problem: he devoted many pages of destructive critique to philosophies based on what he claimed were imaginary, unreal beings. Yet he believed unquestioningly in many things invisible to the senses, in the domain of religion as well of science.

For example, he said there is no such as “the element of fire” – a key part of occult philosophy for many centuries. He also denied reality to the “Prime Mover” of ancient astronomy.

The science of his time derived the message that scientists should stick to what they can observe and deride the concept of realities beyond the senses. This was never Bacon's belief, but he would have been hard pressed to explain why he was convinced that ‘spiritus’ was real and that he knew how it operates in bodies and in nature.

Francis Bacon often used expressed Protestant sentiments, both in his religious writings and by extension in his philosophy, and felt that philosophy needed as thorough a Reformation as Christianity had undergone. Perhaps the best term to describe Bacon's scientific aspiration is

Reformed Hermeticism. In short Bacon wanted to accomplish for science – including the domain of spirits, Forms, human and religious philosophy - what Luther's Reformation had accomplished for Christianity. As Luther had returned Christians to the Scriptures and away from the intellectual nit-picking of Scholasticism, so Bacon wanted to return scientists to Nature. His vision of what this Restored Ancient Wisdom would be like was more like a scientific update of Hermeticism than anything else.

The Rosicrucians called for the General Reformation of the Whole Wide World. Making allowances for the elements in the later Rosicrucian movement that Bacon would have called superstitious and outmoded, this is very close to Bacon's lifelong goal. And even without special knowledge from secret societies or private revelations, Bacon's scientific method was meant to restore and make this knowledge and power available to everyone, just as Christianity offers salvation to all.

The *Abecedarium* Fragment is this a rare example of Bacon's Reformed Hermeticism in action and its relevance to Masonic history must be seen in this context.