

**A SCIENTIFICALLY BASED EXAMINATION
OF A MAJOR MYSTERY IN ENGLISH LITERATURE:
THOMAS THORPE'S PREFACE TO "SHAKE-SPEARES SONNETS"**

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This essay follows a paper trail that leads from censorship in Elizabethan England to the curious preface written in 1609 by Thomas Thorpe: publisher of 'Shake-speares Sonnets'. The consequences are potentially far-reaching. Central to the enigmatic wording of Thorpe's preface is a probability model, which effectively reveals a secret that the publisher's asyntactic language was employed to conceal. The result of this interaction between language and mathematics can be seen to bind together many loose ends of a longstanding mystery, and present it as a single unified explanation; one, which has the capacity to seriously challenge any rational alternative.

Professor Gerald Kilroy has provided a fitting description of the period in English history, leading to the year 1609, when Thomas Thorpe published the first edition of SHAKE-SPEARES SONNETS. **"Never have books or writing or letters been as dangerous as they were between 1581 and 1606: proclamation after proclamation forbade seditious writings; books were seized in midnight raids, and men were questioned for copying poems. Stephen Vallenger lost his ears for printing one work ... and subsequently died. Writing went underground, between the lines, into the paper and into code; far from suppressing language, the state's actions seemed merely to put value on writing."**^[1]

Both writers and publishers felt the full force of this censorship. In 1600, Dr. John Hayward was found guilty of treason and imprisoned in the Tower. His crime was to have written the *Life and Raigne of King Henrie IV*, which was deemed seditious, because it retold the story of Richard II's deposition. Two years earlier, Tom Nashe and Ben Jonson were sent to the Fleet prison for seven weeks for their part in writing *The Isle of Dogs*: a play considered "**lewd**" and "**seditious**".^[2] This was the occasion Jonson was brought before Richard Topcliffe, the head of Elizabeth's secret police, and a man reported to be "**the cruellest tyrant of all England**".^[3] Topcliffe was permitted to use his own torture chamber, converted from a strong room in the basement of his house in Westminster churchyard. 'Topcliffian practices' were to become a euphemism for the methods he used to extract information.

Edmund Spenser was another writer targeted by the censor for depicting Lord Burghley in an animal fable as a power-hungry fox. His punishment was exile to Ireland. John Marston and George Chapman, contemporaries of Shakespeare, were arrested for having inserted just two paragraphs in *Eastwood Ho* that were held to be "**slanderous**". They subsequently reported that their punishment was to be disfigurement; for they were to "**have their ears cut and their noses.**"^[4]

In 1603, Jonson was again arrested and brought before the Privy Council to be accused by the Earl of Northampton of "**popery and treason**",^[5] on account of his play *Sejanus his Fall*. Roland Jenks, an Oxford printer, suffered the loss of his ears for a seditious tongue. Ralph Emerson's fate was still worse. For trying to retrieve some books that had been impounded he was repeatedly tortured, and

then imprisoned for nineteen years before being released in a paralysed state. John Stubbe and his publisher William Page were each sentenced to the severing of a hand for daring to make known an opinion concerning the marriage proposed between Queen Elizabeth and Prince François de Valois. The amputation was performed publicly with a butcher's knife placed at the wrist, which rested on a chopping-block. A mallet was then used to hammer down the blade until the hand came away. Nor was mutilation confined to only those guilty of the written word. It was also the penalty for a loose tongue. Witness John Stow's account of what befell a group of people he witnessed undergoing their punishment in 1601. **"The last of June Atkinson a Customer of Hull, was set on the Pillory in Cheape, and with him three other, to wit, Wilkinson, Alson, & Cowley brought thither on horseback, with their faces towards the horse tails and paper on their heads. They were there whipped on the Pillory, and lost their ears, by judgement given in the Star Chamber, for slanderous words by them spoken & written against the Lord Treasurer [Lord Burghley] and others of the council."** ^[6]

It is occasionally asked – If Shakespeare was the penname of Edward de Vere, 17th Earl of Oxford (the subject of the 2011 film *Anonymous*), why have no documents been found alluding to this? Mutilation, imprisonment, exile, and even possible death are powerful inhibitors, especially if there was nothing to be gained by defying authority. But reticence also applies if it were the wish of Oxford and his descendents that his theatrical and literary connections were private matters, and should remain so. In which case, given that Lord Burghley was both grandfather to Oxford's children and head of censorship at the time Shakespeare – were he Oxford – was most productive, this lack of any documentation has a plausible explanation.

But even with a plausible answer to this question, two more are raised. What was so secretive about Oxford's written work that his identity could never be publicly revealed; even to the extent of allowing another to take credit for it? And was anyone tempted to seek a way of making it known to future generations; perhaps using a practice referred to by Kilroy that was rife at the time – **"code"**?

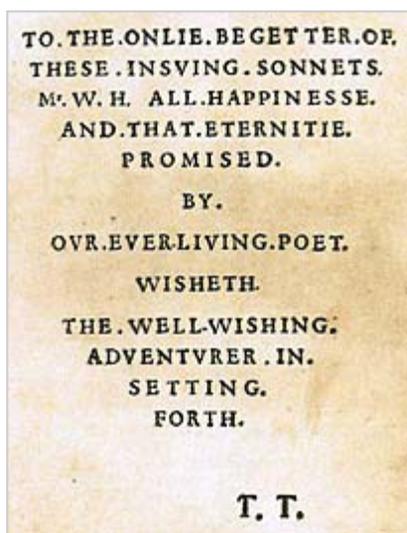
"Cryptology is usually and properly considered to be a branch of mathematics," ^[7] said William F. Friedman. It was during WWII that Friedman achieved lasting fame, when together with three co-workers, Kullback, Rowlett and Sinkov, who specialized in mathematics and linguistics, he broke the Japanese Purple Code. It was several years after the war, while giving a lecture on cryptology, that the Folger Shakespeare Library approached him to help respond to the growing interest aroused by a movement claiming that Sir Francis Bacon had secretly encoded into the plays of Shakespeare, references to himself as the author. Friedman, with the aid of his wife Elizebeth, also a competent cryptologist, accepted the offer made by the Folger; and together, they disproved all coded references to Bacon in their 1957 book, *The Shakespearean Ciphers Examined*. ^[8]

This book has had both a fortunate and unfortunate effect. It certainly removed the deadwood that had accumulated around the authorship question, but it also acted as a deterrant to pursuing research in the direction of cryptography. The Bacon movement may have been misguided in their choice of an alternative for Shakespeare, but they were certainly correct in discerning that when a society is suppressed by censorship, a resentful and defiant literati will often seek underground methods to ensure they are heard. Shakespeare's identity, if this were the penname of Oxford, would be ascertained with certainty if one or more of his contemporaries had encoded this information somewhere: and in a manner that had survived, unchanged, over the passage of four centuries.

But where to look? David Kahn, former editor of *Cryptologia* and author of *The Codebreakers The Story of Secret Writing*, provided a possible clue. When writing upon the subject of Equidistant Letter Sequencing (ELS) as a method for concealing secret messages in an otherwise innocent piece of text,

he considered its drawback: **“the method’s chief defect, of course, is that awkwardness in phrasing may betray the very secret that that phrasing should guard: the existence of a hidden message.”** [9] Kahn was referring to the difficulty encountered when attempting to conceal the letters of a message, one at a time, equally spaced apart, in a passage of innocent looking text. To succeed, it is often unavoidable that when ensuring the letters of the concealed message fit neatly into the narrative that hides their secret, there will be giveaway signs in the awkwardness of phrasing that became necessary. This clumsiness in grammar can then betray the fact that a secret exists within its content.

Is there anywhere one can find an **“awkwardness in phrasing”** that has survived 400 years; having also been written by a contemporary of Shakespeare? Thomas Thorpe’s preface to the Sonnets is the most obvious choice. French historian Louis Gillet dismissed it as no more than a **“few lines of**



gibberish”. [10] Sir Sidney Lee observed how the words **“are fantastically arranged and in odd grammatical order.”** [11] Leslie Hotson was more direct, declaring the dedication to be so **“preposterous”** it could only be **“a cryptogram”.** [12]

By the early 1990s, Dr John Rollett had reached a similar conclusion. It was during his inspection of Thorpe’s phrasing that he made two interesting discoveries concerning Henry Wriothesley, 3rd Earl of Southampton, the youth most often quoted as the ‘Fair Youth’ and subject of Shakespeare’s sonnets. The name HENRY could be read vertically on a 15-column grille containing the letters of Thorpe’s text, and the name WR•IOTH•ESLEY, albeit in three parts, could also be read vertically on a similarly constructed grille with 18 columns.

This, together with a further discovery he made, when he first observed that Thorpe had divided his text into three triangular bands of 6, 2, and 4 lines, which; when applied to the 6th, 2nd, and 4th words of the text, read: **“These Sonnets All By E Ver The Forth”.** Historians will understand the relevance of ‘the forth’. De Vere was the most senior member of King James’ Privy Council, and was always the first to sign decrees passed by the council. His signature came after the three ex officio members: the Archbishop of Canterbury, the Lord Treasurer and the Lord Keeper. These discoveries caused considerable interest towards the close of the last century, and Rollett’s findings were recommended for publication **“by three experts in cryptography from American Academia and Intelligence (the USA National Security Agency)”.** [13] The science editor of *The Times* in London also wrote an article on the subject (31/12/1997). But to date, Rollett’s detection has never been sufficiently analysed for its probability content. It is a task long overdue.

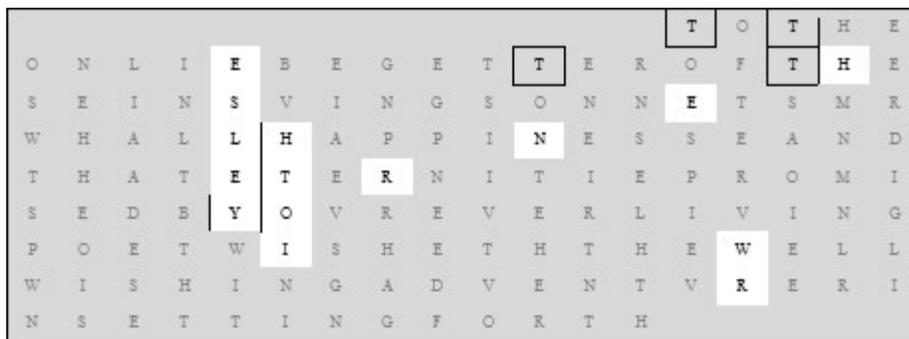
By examining Thorpe’s text, it is noticed that it contains only one letter ‘Y’; this, the 82nd letter; and that both HENRY and ESLEY end with that same letter ‘Y’. It is therefore legitimate to ask: Have these two parts of Henry Wriothesley’s name been deliberately encrypted into Thorpe’s preface; or, are they there by chance? The answer to which, is that all 9 letters will occur by chance, with each letter equally spaced apart so that both HENRY and ESLEY end on the 82nd letter, once in approximately twenty-two trillion attempts.*

Within the sciences, a probability of this magnitude would be expected to have a predictive quality; and this is no less true for literature. Consequently, because HENRY and ESLEY are both parts of Henry Wriothesley’s full name, the prediction is that the missing part of his surname also occurs on the 18-column grille to connect with ESLEY. In fact, IOTH actually occurs adjacent to ESLEY, with the 4 letters equally spaced apart as predicted: in perfect accord with ESLEY. The letters IOTH never again appear

together on a grille of any dimension. They are unique to the 18-column grille. This close proximity between two parts of Wriothesley's name is highly significant in cryptology, because an encrypter will always seek to obtain the maximum possible closeness for the words used in the intended message: knowing that a coherent flow of language signals the authenticity of what has been encoded. The golden rule for an authentic decryption is, *the whole must be connected by a meaning that unites the parts.*

The remaining two letters, WR, are found vertically together in the 15th column, which is especially relevant to this cryptogram. Because when both surname and forename are placed on the same grille, 15 directs attention to the 15 spaces that occur between the letters in HENRY.

When Thomas Thorpe wrote his preface to *Shake-speares Sonnets*, he not only mystified readers by its lack of grammar, he also set them wondering why he had initialled it, instead of completing his



name, as he had done before on other publications; for this was then customary practice, as it is now. The strong answer is that he was privately signalling that these initials were those accompanying each

of his encryptions; which to the Elizabethan and Jacobean mind, would have seemed an obvious and necessary means of authenticating a secret statement. His initials, "T.T." can be seen on the grille with both 15 and 18 spaces between each of the significant letters; and, notably, at the foot of the preface.

A further feature, which was remarked upon by Dr. Bruce Spittle, concerns the sum and difference of the two numbers used for the encryption. $18 + 15 = 33$, $18 - 15 = 3$. Both 33 and 3 are relevant to the subject of the cryptogram. HENRY WRIOTHESLEY EARL OF SOUTHAMPTON comprises 33 letters while 3 is the number of Southampton's earldom. In this way, both 15 and 18 complement the subject's identity, while also suggesting a key to the unlock the secret contained in the preface.

The *Encyclopaedia Britannica* is explicit upon the subject of cryptography. **"Cryptographic systems are generically classified (1) by the mathematical operation through which the plaintext information is concealed using the encryption key . . . (2) according to whether the transmitter and receiver use the same key (symmetric cryptosystem) . . . and (3) by whether they produce block or stream ciphers."** [14]

The generic group to which Thorpe's cryptogram belongs is 'transposition', since he has re-ordered the letters to obtain Southampton's name. This re-ordering conforms to a specific mathematical rule, by which the probability for it to occur by chance can, and has been calculated. Thorpe's method also conforms to a stream cipher, which breaks the concealed message into separate parts, and then encrypts each part according to the key or keys used. [15] In the present case, there are just four units to encrypt: HENRY – WR–IOTH–ESLEY. These have been encrypted using the keys 15 and 18.

Equidistant Letter Sequencing (ELS) has a long history, and is referred to in *Sefer HaBahir*: a book written in the first century A.D. by Nechunya ben HaKanaah, a Jewish scholar living in the Judean town of Emmaus. The method re-emerged in the eleventh century when Rabbenu Tam made reference to it in his writings. Two hundred years later, the subject was revived by Rabbenu Batchya ben Asher of Saragossa, a student of Rabbi Solomon ben Abraham Adret (1235–1310): a first class

scholar and owner of a huge library in Spain. But it was Girolamo Cardano (1501-1576), who introduced an improvement. He devised a faster method of encrypting secrets by using a template with holes cut out to reveal the letters on the page beneath, which spelled the secret concealed by the main narrative. This method removed the time-consuming task of spacing letters at an equal distant apart within a piece of innocent cover text. ^[16] Thorpe's two encryptions, both keyed to obviate the need for a template, are therefore a combination of ELS and Cardano's method; for which the publisher likely received assistance from one of the codebreakers employed by Sir Francis Walsingham, the Queen's spymaster. Johannes Trithemius's *Steganographia* contains an example of ELS. It was written c.1499, but not published until 1606. Before then, manuscript copies had been circulating across Europe. In 1563 John Dee travelled to Antwerp to make his own copy, for he referred to it in a letter dated 16 February, sent from Ghent to Oxford's guardian William Cecil, in London. ^[17]

Having verified Thorpe's intention to conceal Henry Wriothesley's name; for there can be no other interpretation that justifies the numerical evidence supporting it, the literary world is faced with the question of why this degree of secrecy was thought necessary? The content of the sonnets appears to provide the answer. They were written to an unnamed youth in what has more than once been termed homo-erotic language (refer: G. G. De Wailly, 1834; Augustin Filon, 1883; H. M. Stanley, 1897; Thomas Neal, 1897; Samuel Butler, 1899; Jean A. A. J. Jusserand, 1909; Albert Moll, 1910; Frank Mathew, 1922; Friedrich Gundolf, 1928; G. W. Knight, 1929; Herbert Thurston, 1930; E. Landau, 1930; Louis Gillet, 1931; Francis Birrell, 1933, &c.). ^[18] They are, commented, C. S. Lewis, former Cambridge professor of medieval and renaissance literature, **"too lover-like for that of ordinary male friendship."** ^[19] Joseph Pequigney, in his detailed study of the Sonnets, agreed. The relationship, he wrote, **"is decidedly amorous-passionate to a degree and in ways not dreamed of in published philology, the interaction between the friends being sexual in both orientation and practice."** He then went on to say, **"that verbal data are clear and copious in detailing physical intimacies between them."** ^[20] We therefore have evidence from a wide range of scholars, covering a century of comment; with each, united in agreement that Shakespeare's sonnets possess a homosexual content.

In 1563, Queen Elizabeth had decreed by statute that sodomy was a crime punishable by death. ^[21] This would be reason enough to conceal the name of that young nobleman from public comments. Reason enough also for the sonnets not to have been published. And reason enough for John Benson, thirty years after their first publication, to defuse their homo-erotic content by an occasional change to the youth's gender; thereby enabling the poetry to conform to the moral standard of his readers.

Could the son of John Shakspeare of Snitterfield, a hilltop village 4 miles north of Stratford-upon-Avon, have written these poems to the young Earl of Southampton? Award winning historian Peter Ackroyd, was emphatic. **"The 'lovely boy' and object of the poet's passion has been identified with the earl of Southampton. In the late sixteenth century, however, the impropriety of addressing a young earl in that manner would have been quite apparent; to accuse him of dissoluteness and infidelity, as Shakespeare accuses the unnamed recipient, would have been unthinkable."** ^[22]

But this same objection does not apply if **"These Sonnets [were] All By E Ver The Forth"**. Under James I, Oxford became the highest ranking member of the Privy Council; his seniority entitling him to appear as the *fourth* signatory on all official documents. It followed those of the three ex-officio officers: the Archbishop of Canterbury, the Lord Keeper and the Lord Treasurer, and was always the first signature at the head of the titled members of the Council. ^[23]

If an improper relationship had developed between Southampton and Oxford, then the fact that Henry Wriothesley was Queen Elizabeth's ward, living under the guardianship of Her Majesty's chief councillor Lord Burghley, would be reason for concealing both identities; especially since Burghley was also the grandfather of Oxford's three children. It would also have the seal of approval from Elizabeth and her councillors; even to the extent of censoring publication of the offending material and transferring authorship of the sonnets to someone of a lower class. For, in a society dominated by class distinction, such a person would never be suspected of an intimate relationship with a high ranking member of the nobility. A person, for example, exactly like John Shakspeare's son William.

Burghley had already covered up acts of homosexuality committed by his nephew Anthony Bacon. In 1586, while organizing a spy network for Sir Francis Walsingham in Montauban, Bacon was found guilty of sodomising his page boys, for which the penalty was death by burning. But because of Bacon's titled connection in England, Henri of Navarre (France's future Henri IV), referred the matter to Burghley. In his capacity as head of censorship, Burghley expunged all reference to his nephew's guilt from English records. It was not until 1973 that the truth was discovered, when Daphne du Maurier happened to come across a record of Bacon's crime among a set of French archives.^[24]

From this, it must be evident that Burghley would have done no less for his daughter's husband, including the young earl placed in his charge. According to the evidence given above, Thorpe not only knew the true identity of Shakespeare, but also the dark secret contained in the sonnets; and in an atmosphere of censorship, torture and repression, he encrypted the missing names in his preface.

An almost instant suppression of Thorpe's publication has long been suspected. The typographical errors reveal the haste with which the text was set to print. And the thirteen copies that have survived suggest that only a meagre number were sold. Added to this, there is the fact that no writer of that time was ever motivated to question the identities of the 'fair youth', the 'dark lady' or the 'rival poet'. This silence is remarkable, and in stark contrast to the public interest aroused by the equally puzzling questions raised regarding the identities of Sir Philip Sidney's 'Stella' and Samuel Daniel's 'Delia'. **"Unless Q [Shakes-speares Sonnets] was quickly suppressed, how can one account for the total silence of Sh.'s contemporaries about the mysterious figures of the dark woman, the male friend, and the rival poet? Surely the first of these would have attracted at least as much attention and comment from readers as Sidney's Stella or Daniel's Delia."**^[25]

This question, never answered, cannot be separated from another – Why had it taken so long for this hastily prepared volume of the sonnets to be published, and why did it take another thirty years before a second edition appeared? **"[N]o second edition was to appear in Shakespeare's lifetime, or indeed for another thirty years. By contrast the altogether lesser sonnets of Shakespeare's exact contemporary Michael Drayton, already six times printed by 1609, went into three further editions."**^[26]

When the second edition finally did become printed, the change in the youth's gender, from male to female, made the poems acceptable to readers. The original version, lacking these changes, would then be the reason for their earlier suppression. Moreover, the absence of comment following the first publication of these poems can then be accounted for by the censorship necessary to protect the two high-ranking members of the Queen's court. For, had their intimate relationship been known through the medium of the sonnets, it would undoubtedly have cast a shadow of lasting shame and dishonour onto both families.

Lord Burghley would not have been exempted from this shame; for he was legally responsible for the moral welfare of the younger man who had been placed under his guardianship. It was therefore in Burghley's capacity as head of censorship, and with a motive and the power to change the course

of England's literary history, that he stands accused of diverting attention away from his son-in-law, and approving the transfer of Oxford's plays and poetry to a man far removed from the possibility of an upper-class scandal—William Shakspeare of rural Stratford-upon-Avon. It was the perfect solution for ensuring the censorship of Oxford's work, for as long as it was read.

The consequences of this action have been far reaching, and have led to the acceptance by one generation after another that the plays and poems of Shakespeare were written by a man residing in the English midlands, with a name spelt and sounding similar to that of the penname adopted by Oxford. Undoubtedly this businessman – for historical records offer no details beyond his commercial activities – was complicit in the transfer of authorship. He would therefore have acted as the author's allonym, and been provided with shares in the acting company that produced the author's plays. To the world at large, this would have given an outward appearance of authenticity to his role as a playwright. But it has meant that future generations have been misguided into believing precisely what was intended; to wit, that the plays and poems of Shakespeare were authored by the son of a Warwickshire tradesman.

The Earl of Oxford's written reaction to being suddenly dispossessed of his poetry and plays, with their authorship transferred to another, is revealed by his realisation of what the future held for him – **"My name be buried where my body is, / And live no more to shame nor me nor you!"** These words in Sonnet 72 confirm everything that has been said in this essay. Both he and Southampton had brought shame upon themselves: and for this, his legacy to England's literary heritage was to be transferred to the undeserving authorship of another person. His own destiny would be a grave of fast fading memory. But, while he still lived, knowing that this other person was soon to glow for eternity in the glory of his art; he committed these further thoughts to his removal from the hall of fame. **"I shall live your epitaph to make, / Or you survive when I in earth am rotten; / From hence your memory death cannot take, / Although in me each part will be forgotten. / Your name from hence immortal life shall have, / Though I, once gone, to all the world must die; / The earth can yield me but a common grave, / When you entombed in men's eyes shall lie. / Your monument shall be my gentle verse, / Which eyes not yet created shall o'er read; / And tongues to be your being shall rehearse, / When all the breathers of this world are dead, / You still shall live, such virtue hath my pen."**

Sonnet 81 is a prediction that has long since been fulfilled in its entirety. Oxford foresees very clearly how his verse will now become a monument to his penname, but in the character of William Shakspeare. Death will not extinguish the memory of his poetry, nor the person who is seen to identify with it. Oxford knew his genius with words would live on forever, and his poetry would be admired for generations to come; while he must die forgotten; at most, he would appear as a footnote amongst the titled courtiers serving Queen Elizabeth during her reign. He realised, too, that Shakspeare's life would be told and retold many times over: with never a mention of himself. But the sonnet's prediction is also phrased in confessional mode; and scholars, through their devotion to this man, overlook that fact; believing, as they do, that Shakspeare raised himself from humble beginnings to become the apotheosis of the written word. The sonnet is very clearly addressed, in all but name, to the one man who will become identified by the penname he had written under; that is William Shakespeare. It is this man, whom the poet foresees as the object of his prediction. It is Shakspeare who will receive worldwide acclamation for literature.

The prophecy has long since come to fulfilment. Shakspeare's life story, with the poet's plays and poems interpolated to fit his time in London, has been retold countless times during the centuries that have since passed; while the real author has been totally ignored. During that time, Shakspeare has

become entombed in men's eyes, while Oxford, divorced from his works of genius, and with references to him slurred by the misfortunes that beset him in life, has been left to decay in some half-forgotten burial ground. The poet said this would happen, and its consequences have been far-reaching. It has meant that one generation after another, born into the world following this transfer of authorship, has been misguided into believing precisely what was intended; the Sonnets and plays of Shakespeare, despite their courtly setting, the writer's knowledge of foreign parts and customs, and his insight into State politics, were authored by a man with no known documented ability as a scholar, and no record of any previous expertise with a pen.

But, is it really credible that Burghley would have taken this course of action? William Camden may have answered that question. He was Ben Jonson's headmaster at Westminster School, and remained close to his former student throughout his life. Through this channel, he would have learned how Thorpe had secretly encrypted a State secret into the text of his preface to the Sonnets. And it seems to have had a bearing upon Camden's choice of words, recorded in his opening introduction to the *Annals or History of the Most Renowned and Victorious Princess Elizabeth* (1625). **"As for danger, I feared none, no not those who think the memory of succeeding ages may be extinguished by present power."** [27]

According to Camden, there were forces at work in Elizabeth's reign, intent upon concealing certain matters of state from the knowledge of future generations. Bacon's guilt in France was certainly one subject of concealment. It also suggests another: Oxford's guilt for the same offence in company with the 3rd Earl of Southampton. For this had led to the transfer of his compromising sonnets to the less contentious William Shakspeare; and by virtue of their style, his plays had also been included in the transfer of authorship.

The failure of Stratford's famous resident to supply even one single piece of probative evidence capable of meeting the standard expected of the real Shakespeare was capably expressed by Lord Dacre, Hugh Trevor Roper, Regius Professor of History at Oxford University. Is it not odd, he asked, **"Of all the immortal geniuses of literature, none is personally so elusive as William Shakespeare?"** He then went on to say: **"Since his death and particularly in the last century, he has been subjected to the greatest battery of organized research that has ever been directed upon a single person. Armies of scholars, formidably equipped, have examined all the documents which could possibly contain at least a mention of Shakespeare's name. One hundredth of this labour applied to one of his insignificant contemporaries would be sufficient to produce a substantial biography. And yet the greatest of all Englishmen, after this tremendous inquisition, still remains so close to a mystery that even his identity can still be doubted."** To this, he added the result of his own findings. **"During his lifetime nobody claimed to know him. Not a single tribute was paid to him at his death. As far as the records go, he was uneducated, had no literary friends, possessed at his death no books, and could not write."** [28]

Thorpe would have agreed. By fully considering the combination of evidence provided by historical record and probability: the cryptogram Thorpe inserted into the asyntactic preface that fronts the Sonnets was intended to reveal to a less censorial posterity a State secret. Over the past centuries, that secret has lain unsuspected at the fountainhead of so many mysteries about the poet: his identity; his education; his literary connections; his travels; his relationship with the rival poet, the fair youth; the dark mistress, and why his death was completely ignored. These questions vex even the most ardent scholars of Shakespeare's art by their apparent insolubility. Thorpe's cryptogram indicates where the answers lay.

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NOTES CONCERNING THE PROBABILITY CALCULATIONS:

- (i) Alan Turing's demonstration that every piece of text can be written on a ribbon of successive letters allows the text to be transferred to a ribbon.
- (ii) The ribbon is first cut into 15 sections with each piece pasted beneath the one before. This is repeated for strips of 18 letters.
- (iii) The answer to the probability question is found on the ribbon, not on the grilles.
- (iv) To calculate how many ELS's of 5 letters are possible within the first 82 letters of Thorpe's text, consider 5 letters, each separated by a single skip. These occupy 9 cells. By moving this arrangement along the ribbon one cell at a time, there are 74 possibilities. This procedure is then repeated for a skip of 2 cells between each letter, then for 3, 4, 5, ... up to 19. With 19 cells between each of the 5 letters, the combination occupies 81 of the 82 cells, where there are only 2 arrangements possible.
- (v) Because this procedure involves an Arithmetical Progression, the formula: $T = -4s + 78$ provides the result for each of the 19 calculations. Since the first and last result is known, the formula for summing Arithmetical Progressions can be used: viz, $\frac{1}{2}(19)[74 + 2] = 722$. But, not all terminate at 'Y'.
- (vi) The number of ELSs that can terminate at 'Y' is 19.
- (vii) The probability that an ELS of 5 letters will occur by chance and terminate at 'Y' is therefore $19/722$.
- (viii) The probability that two ELS's of 5 letters will terminate, independently, at 'Y' is $19/722 \times 18/721 = 0.000,657$.

(ix) There are 82 letters to be considered, within which, H, E, N, R, Y, S, L, occur, respectively, 10, 23, 13, 9, 1, 10, 6, times.

(x) To obtain HENRYESLE by chance, is the product of $5/82 \times 14/81 \times 8/80 \times 4/79 \times 1/78 \times 13/77 \times 7/76 \times 3/75 \times 12/74$, which equals, 0.000,000,000, 069

(xi) The Probability that a successful outcome will coincide by chance with the successful outcome of two Arithmetical Progressions terminating at the 82nd letter cell is $0.000,657 \times 0.000,000,000,069 = 0.000,000,000,000,045$.

(xii) This converts to ONE chance in 22,222,222,222,222 (22.2 trillion) trials. If left to chance, and performing one trial every second, one success would be expected to occur in every 704,180 years. Compare this time frame with that of Homo sapiens. Anatomically modern Homo sapiens populations are known from the Middle East as far back as 100,000 years ago.

Hence, it can be accepted that HENRY and ESLEY were deliberately encrypted. This implies the remaining part of the 3rd Earl of Southampton's family surname, WR_IOTH, also on the grille, can be conjoined to ESLEY, and that Lord Southampton was indeed the 'Fair Youth' of the Sonnets. William Shakespeare was too far below the class of Elizabethan nobility to be an intimate companion of a young nobleman under the watchful eye of Lord Burghley and the Court, but the same restriction would not apply to the most senior nobleman at that time, Edward de Vere, 17th Earl of Oxford.

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