ENCRYPTED TESTIMONY OF BEN JONSON AND HIS CONTEMPORARIES FOR WHO "WILLIAM SHAKESPEARE" REALLY WAS*

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ABSTRACT: Concealed messages in three authentic Early Modern English sources reveal that Ben Jonson (1572–1637) and his contemporaries recognized "William Shakespeare" was a pen name of Edward de Vere, 17th Earl of Oxford (1550–1604). This view is supported and augmented by new, wide-ranging cryptographic testimonial evidence based on a rigorous extension of incomplete and inexact earlier findings of U.S. Patent attorney Ralph L. Tweedale (1904–1977). Compared with their significantly lower occurrence in appropriate controls, the name-identifying block-letter initials *EO* or *EOX* (for **E**dward **O**xenford or the **E**arl of **Ox**ford) formed by the intersection of diagonal alignments of the letters of his name **V-e-r-e** or **E-V-e-r** (with Elizabethan era spelling variants of them) over four consecutive lines of print have been found in original publications of more than a dozen poetical tributes to "Shakespeare." This same two-stage acrostic monogram identity device is also abundant in poetry reliably attributed to Lord Oxford as well as in poems he evidently wrote anonymously or under various pseudonyms including the name "William Shakespeare." By contrast, it is much less often present (by accident) in poems *not* written by him and in poems *not* written about or in tribute to him by others.

KEYWORDS: Contemporary testimony, de Vere identity device, diagonal **v-e-r-e** alignments, *EO* block letters, Lord Oxford poems, Shakespeare authorship.

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TABLE OF CONTENTS

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1. INTRODUCTION

"That every word doth almost tell my name . . ." — *Shake-speare's Sonnets,* No. 76

Despite growing evidence that "William Shakespeare" was actually a pen name of Edward de Vere, 17th Earl of Oxford (1550–1604) [*e.g.*, 3,5,9,10,11,14,20,26,27,33,36,42,44,46,49,52], this view is rejected by most mainstream Elizabethan literature scholars. Among their reasons for not accepting de Vere as the true author of the Shakespeare plays and poems are that tributes and testimonials by contemporaries, especially by Ben Jonson (1572–1637), consistently refer to the author only by the name "William Shakespeare"—traditionally considered to be William Shakspere of Stratford-on-Avon (1564–1616). There is no authentic documentary proof, they maintain, that Oxford or anyone else in his day was ever regarded as the famous poet and playwright "William Shakespeare" [24,28,29,30,35].

But is this really true? As far as we know, William Shakspere never claimed he was the author known as "William Shakespeare." But what if the true identity of "Shakespeare" *had* to remain hidden and *could not* be revealed [12,20,25,26,27,33,36,39,44,42,46,49,52]? What if tributes and testimonials to "Shakespeare" by contemporaries contain more than meets the eye and actually point to Edward de Vere? In fact, there are at least four independent lines of cryptological evidence indicating this is indeed the case. Three of these are on record and will be reviewed briefly here. The fourth, more comprehensive in nature and now newly presented and expanded, was first discovered some years ago by a U.S. Patent attorney, Ralph L. Tweedale (1904–1977) [49], in works of Shakespeare, but his development of it was incomplete and inexact.

Although coded messages were widely used in the time of Shakespeare [4,16,23,44], especially for intelligence gathering and for both official and clandestine communication purposes, previous claims based on cryptology for the identity of "Shakespeare" the author have been largely discredited [16,23,44]. In recent years, however, in view of the high degree of certainty attending valid cryptological findings [4,16,23,44], there has been renewed interest in this approach for resolving the authorship question.

Of the three independent cryptographic testimonials on record, the hidden message in the famous but puzzling eight-line epitaph inscription on the famous Stratford monument, attributed by mathematician David L. Roper [44] and others [3] to Ben Jonson, is the most detailed and compelling. In his cryptanalysis of the inscription, Roper [44] discovered that the mysterious lower six-line portion in English contains a very cleverly designed cryptogram of a type first described in 1550 by the famous Italian philosopher, physician, and mathematician Girolamo Cardano (1501–1576). Embedded in the open cipher text of the inscription is an equidistant-letter-sequencing (ELS) plaintext that Roper was able to solve without need of an external key.

By taking note of hints and clues in the first two lines of the inscription in Latin that point to the true author as Edward de Vere and applying a simple mathematical probe to the six iambic pentameter lines in English that

allowed him to test for various possible names reading vertically downward in an ELS Cardano grille, Roper found that only the name E. VERE/DE together with an unequivocal message in a unique 34-column ELS grille identifying him as "SHAKSPEARE" was present. When the 220 letters of the strangely worded and inconsistently spelled inscription ("STAY, PASSENGER, WHY GOEST THOV BY SO FAST? / READ IF THOV CANST . . .") are laid out in the exact order of their occurrence, they form a 34-column ELS grille of six and a half lines containing two clusters of words on the left reading downward vertically, left to right: HIM SO TEST: HE, I VOW, IS E. VERE DE. And then, on the right, apparently for emphasis, is a third cluster of words reading AS HE (vertically) merging into the misspelled name SHAKSPEARE (appearing horizontally) directly below which, again reading horizontally, is the word NAMED and then (vertically) is the word ME and the inverted initials IB of the apparent author Ben Jonson.

The uniqueness of the 34-column ELS grille has been confirmed by a computer program printout of the exact order of the 220 letters of the inscription in 51 successive ELS grilles ranging from 55 to 5 columns [21a]. Only the 34-column grille contains a plausible candidate name (E. VERE/DE) for Shakespeare and a plaintext message avowing him to be the famous poet and playwright. None of the other 50 grilles contains any discernible message or name of an alternative candidate.

Since Edward de Vere was the 17th earl of Oxford, the choice of 34 columns to devise the grille message evidently reflects the first whole number multiple of his earldom. At the time of the erection of the monument ca. 1622, there is evidence that Jonson was involved in the preparation and publication of the 1623 First Folio of Shakespeare's plays [3,11,33,36,44,46,52]. In 1628, as further evidence of Jonson's authorship of the inscription, Jonson wrote an epitaph for Henry West, 13th Lord La-Ware (1603–1628), opening with the lines: "If, Passenger, thou canst but reade: / Stay, drop a teare for him that's dead"—which, of course, recall the similar opening words in the Stratford Monument inscription [3,44]. By appropriate statistical tests for possible alternative solutions, and in the light of other corroborative evidence, Roper concluded the odds are extremely small (less than 1 in 10^{12} or one in a trillion) that this de Vere decryption of the monument inscription is due to chance [44].

Since the appearance of Roper's discovery, medical psychologist Dr. Bruce Spittle has found an internal key to the ELS grille embedded in the inscription. Only the second line of the inscription in Latin directly above the six lines in English is offset and stands out: it has exactly 34 letter characters—the same as the number of columns in the ELS grille [Spittle, submitted for publication, 2009].

A second, re-examined [11,48] cryptographic witness to Shakespeare's true identity was discovered in the 1930s by Eva Turner Clark (1871–1947) [10]: a Latin anagram on the title page of *Minerva Britanna*, published in 1612, by poet, writer, and artist Henry Peacham Jr (1576?–1643). This book contains over a dozen Latin anagrams with their solutions among the more than 200 poems illustrated with provocative emblematic woodcuts. The anagram in the lower part of the drawing on the title page, however, is not solved for the reader. It depicts a hand, reaching from behind a theater curtain while writing: MENTE. VIDEBOR. (In the mind I [or the "I"] shall be seen). When rearranged, these letters plausibly spell, as Clark pointed out: NOM. TIB_ DE VERE (Your name [is] de Vere).

A telling indication that Peacham was thinking of de Vere as Shakespeare the author in this anagram appears in his later book concerning proper education of English gentry, *The Compleat Gentleman*, published in 1622. In this book and in later editions of it, Peacham listed leading deceased poets of the "golden Age" of Queen Elizabeth I (1533–1603), mentioning first "*Edward* Earle of *Oxford,*" and then other poets, including "our *Phoenix,* the noble Sir *Philip Sidney,* M. *Edward Dyer,* M. *Edmund Spenser,* [and] Master *Samuel Daniel,* with sundry others . . ." but *not* mentioning "*William Shakespeare.*" That Peacham would have omitted so

distinguished a poet as "William Shakespeare" among leading deceased poets of Elizabeth's reign is virtually inconceivable—unless he had already knowingly referred to him as "*Edward* Earle of *Oxford*" [3,10,11,33,36,44,46].

The third piece of cryptographic evidence that de Vere was Shakespeare occurs in the long-unsolved problem of the authorial meaning of the enigmatic dedication by "T. T." (Thomas Thorpe) to *Shake-speare's Sonnets* published in 1609. Noting the unusual layout and wording of this well-known dedication, retired engineer John M. Rollett [27,42] has offered a plausible solution. The original printing of the dedication is in the form of three inverted trapezoids of six, two, and four lines, with a period separating each word or single letter entry in uppercase (with M^{r}. taken as single letter entry). This arrangement suggests an overlay type of Cardano grille—a simple skip-word, null-cipher type cryptogram [4,23]—corresponding, in order, as Rollett later realized, to the number of letters in each part of the name Edward de Vere. Taken successively, the sixth, second, fourth, sixth, and second of the first 20 entries of the dedication read: ". . . THESE . . . SONNETS . . . ALL . . . BY . . . EVER . . ." (*i.e.*, by E Ver). (For further cryptanalysis of this dedication, see [44].)

Rollett assessed the validity of his decryption by applying the same 6-2-4-6-2 skip-word pattern to the first 20 words of "many thousands of paragraphs, probably well over 20 thousand," finding only "one sentence that remotely made any sense at all . . . and [it had] not the slightest relevance to the rest of the paragraph" [42]. On the basis of this empirical test and other considerations, he estimated that the odds are less than "one in 100 million" this decryption of the authorial message in the dedication is due to chance.

2. NEW CRYPTOGRAPHIC EVIDENCE

The fourth type of cryptographic evidence for Shakespeare's Oxford authorship is now presented here. Broader in scope but no less telling than the three single-occurrence examples just cited, it consists of a two-stage internal acrostic monogram identity device, apparently without precedent, found in original printings of poems written by Oxford-Shakespeare and in poetical tributes by contemporaries to him.

As already mentioned, Ralph L. Tweedale [49] discovered the presence of such a device in works of Shakespeare some years ago, but his development of it was incomplete and inexact. It consists of unobtrusive diagonal alignments or acrostics of the four letters of the Vere surname extending downward or upward through four contiguous lines of print in some of the works of Shakespeare, especially his sonnets. However, as shown here for the first time, these alignments also occur in Edward de Vere's known poems signed with his initials and in certain poems about him in such a way as to form *EO* or *EOX* block letter initials of his name, **E**dward **O**xenford or the **E**arl of **Ox**ford. *Strikingly, this same two-stage monogram identity device is also present in more than a dozen poetical tributes to "Shakespeare" by contemporaries, including Ben Jonson, but rarely or far less often (presumably by accident) in commendatory poems that are not about Oxford-Shakespeare.*

Although not obvious at first glance, and therefore ideal as a cryptographic identity device, these diagonal **Vere** alignments or acrostics (DVAs), as they extend through four consecutive lines of single stanzas in original printings, faithfully follow a very simple set of rules to form the name-revealing block letter initials *EO* or *EOX*. Besides the usual spelling of the name **Vere**, DVAs also make use of the alternative spelling **Veer,** found, *e.g.*, in the 1562 will of Oxford's father, in writings of his famous uncle Arthur Golding [18], and in Oxford's March 10, 1579 (1580 new style) annuity to Robert Hales [6].

Along with the letter **u,** frequently interchanged for **v** in Elizabethan printing, the letter **w**, often printed at the time as two juxtaposed **v**'s (and also to represent English transliterations of two **v**'s in Latin anagrams) is also used, thus providing six four-letter DVA combinations: **v-e-r-e**, **v-e-e-r**, **u-e-r-e**, **u-e-e-r**, **w-e-r-e**, and **w-e-e-r**.

In addition, three further variations of the contraction **E Ver** (for **E**dward **Ver**e) are also allowed: **e-v-e-r**, **e-u-e-r**, and **e-w-e-r**.

As illustrated in Figure 1 below taken from the Table on the next page, when DVAs meet or intersect as they are read downward or upward through four consecutive lines of print in single stanzas or paragraphs, they can form name-identifying block letters. In this way, the *same* four letters, **v-e-r-e**, together with their just-mentioned variants, produce the second stage of a two-stage acrostic monogram identity device that is not readily detected unless specifically looked for.

A. IN POEMS BY LORD OXFORD

Tweedale [49] evidently thought de Vere began using DVAs in the year 1593 when the name "William Shakespeare" first appeared in print in the dedication to the long narrative poem *Venus and Adonis*. He likewise proposed they were used in some of Shakespeare's plays and in his *Sonnets* to form block letters of the name *OXFORD* and, in sequence, the name *WILLIAM SHAKESPEARE*. Without elaborating, he also mentioned the occurrence of DVAs in the 1623 First Folio prefatory tributes to Shakespeare by Ben Jonson and interpreted them to mean that Jonson knew that "Shakespeare" was really Lord Oxford in disguise. However, he apparently did not consider the possibility that their use may have begun well before 1593, nor did he recognize their occurrence to form *EO* or *EOX* block letters as reported here. Fortunately, a fair number of Oxford's poems have survived that contain *EO* or *EOX* block letters formed by DVAs and are subscribed "*E. O.*" or "*E. Ox.*" (for **E**dward **O**xenford or the **E**arl of **Ox**ford) or are otherwise attributed (with some disagreement [29]) to Lord Oxford, mostly from his earlier years. These poems are listed in the Table on the next page, wherein is recorded the occurrence of block letters formed by DVAs that can be gleaned from microfilm facsimiles of original published editions or in faithful printed transcriptions from contemporary manuscripts. (For sources, see [7,29,33].)

The occurrence of *EO* block letters formed by DVAs in one of de Vere's authentic sonnets is illustrated in Figure 1 below with poem No. 21 in the Table, which begins: "Who taught thee first to sigh…" Although known earlier in manuscript, this sonnet was first published in 1593 in *The Tears of Fancie*, or *Love Disdained*, a collection of sonnets ascribed to Thomas Watson (c. 1557–1592). As seen in Figure 1, DVAs are read as diagonal lines pointing downward or upward as they pass through four consecutive lines of print and go through or touch, in turn, each letter of the DVA. Here, as in later examples, a circle is drawn around the first letter of each DVA.
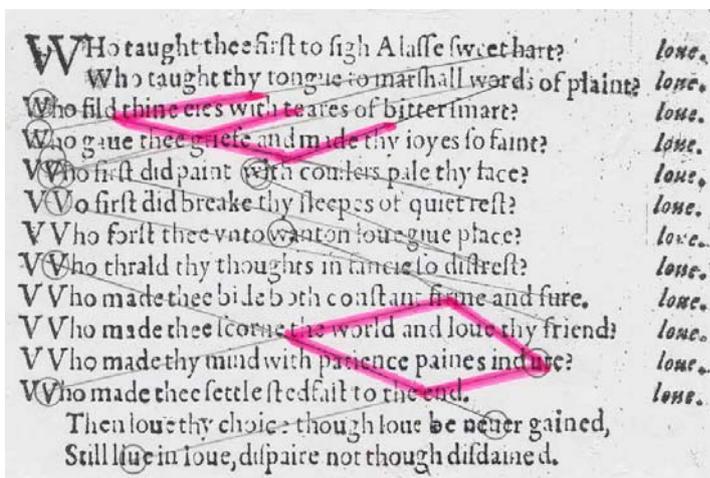

Figure 1. Facsimile of *E*dward *O*xenford's sonnet in *The Tears of Fancie* (1593) showing $E^{Ru}O$ block letters (shaded) formed by eight of the 14 diagonal Vere alignments or acrostics (DVAs). As in the other figures, a circle is drawn around the first letter of each DVA.

The shaded block letters *E* and *O* are formed by the intersection of eight DVAs—four for the *E* (in this case pointing upward to the right, labeled in the Table below as E^{Ru}) and four for the *O* (with the latter appearing as a quadrilateral). Each DVA is used only once; unneeded DVAs are ignored; and unused portions of them are discounted.

Table. Block letters formed by diagonal Vere alignments (DVAs) in original printings or printed transcriptions of MS versions of poems by Lord Oxford. Right (*R*) or left (*L*) orientation of the block letter *E*, slanting up (*u*) or down (*d*), shown in superscripts. When the *E* orientation can be read as *R* or *L*, the superscripts are shown as *Ru/Ld* or *Rd/Lu.*

No.	Opening words (modern spelling)	Total lines/ stanzas— syllables per line	Block Letters	DVAs needed/ found
1	A crown of bays	26/7—8,6,12,14	$X\,E^{Lu}\,OX$	12/16
2	A day, a night	18/3—10	$T\,E$	6/8
	(*stanzas conflated*)	*18/1—10*	$V\,T\,E^{Rd/Lu}\,O$	*12/14*
3	Even as the wax	18/3—12,14	Uncertain	?/35
4	Faction that ever	24/6—12,4	None	0/2
	(*stanzas conflated*)	*24/1—12,4*	$E^{Rd/Lu}\,OX$	*10/13*
5	Fain would I sing	18/3—10	$E^{Ld}\,OX$	10/13
6	Fraud is the front	18/3—14	$E^{Rd/Lu}\,OX\,E^{Ru}\,OX$	20/22
7	I am not as I seem	32/4—8	$E^{Rd/Lu}\,L\,O$	10/13
8	If care or skill	30/5—10	$E^{Rd/Lu}\,X\,L\,O$	12/16
9	If women would be	18/3—10	$E^{Rd/Lu}\,X\,O$	10/13
11	My meaning is to	10/3—12,14	$H\,H$	6/7
	(*stanzas conflated*)	*10/1—12,14*	$E^{Rd/Lu}\,OX$	*10/17*
12	Sitting alone upon	22/3—14	$E^{Ru/Ld}\,OX\quad E^{Rd/Lu}\,OX$ X	22/26
13	The laboring man	26/1—10	$E^{Rd/Lu}\,OF\,OX$ $E^{Rd}\,OF\,OX$	34/40
14	The lively Lark	28/4—8,10	None	0/2
15	The trickling tears	36/6—10	$H\,E^{Rd/Lu}\,X\,X\,O$	15/18
16	Were I a king	12/2—10	$E^{Rd/Lu}\,OX$	10/11
17	What cunning can	42/7—6	$T\,X$	4/10
18	What thing is love	24/4—10	$E^{Rd/Lu}\,OX$	10/16
19	When wert thou	14/1—12,14	Uncertain	?/30
20	Whereas the heart	16/1—14,8,6	$E^{Rd/Lu}\,O$	8/11
21	Who taught thee	14/1—10	$E^{Ru}\,O$	8/14
22	Wing'd with desire	36/6—10	$E^{Rd/Lu}\,OX\quad E^{Rd/Lu}\,OX$	20/23

6

Interestingly, when conflated into a single stanza, a slightly different earlier version of the sonnet in Figure 1 as preserved in the Rawlinson Poetical MS 85 has two sets of E^{Rd} OX block letters formed by 20 of the 23 DVAs that are present. As can be seen in the foregoing Table, two-thirds (15/22, or 68.2%) of the poems ascribed to Oxford (mostly signed "*E. O.*" or "*E. Ox.*") have *EO* or *EOX* block letters formed by DVAs. Except for poems Nos. 1 and 5 with left-facing E^L block letters, all the *E* block letter point normally to the right (E^R) or, depending on where the "backbone" line occurs, equivocally to the right or left ($E^{R/L}$). In poems Nos. 7, 8, 9, and 15, block letters *X* or *L* intervene between the *E* and the *O*. When the three shorter poems Nos. 2, 4, and 11 are conflated into often-used single stanzas, they also have *EO* or *EOX* block letters formed by DVAs, thus giving *EO* block letters in 18/22 or 81.8% of the poems. The four poems without *EO* block letters either have long lines with too many extraneous DVAs that give uncertain block letter readings (Nos. 3 and 19) or have short lines that do not readily lend themselves to incorporate enough DVAs to form block letters (Nos. 14 and 17).

Of special interest is poem No. 13 in the Table because of its discernible repetition of an *E OF OX* block-letter sequence occurring in only 26 iambic pentameter lines of print. Titled "*The Earl of Oxenforde* to the Reader", this poem was prefaced to Thomas Bedingfield's translation of *Cardanus Comforte* published in 1573. The formal probability for these five block letters with two *O*s appearing by chance in the order *E O F O X* is $1/(5!/2)$ or $1/60$. When they occur twice in this order in the same poem, the probability drops to $(1/60)^2 = 1/3600$ or $p < 0.0003$.

B.   IN WORKS OF "SHAKESPEARE"

The occurrence of *EO* block letters formed by DVAs in original printings of certain works of Shakespeare is also worth noting. Thus, in the original 1609 printings of the 154 *Shake-speare's Sonnets* (when reformatted to eliminate page breaks within individual sonnets), 99 (64.3%) of them have *EO* or *EOX* block letters of variable size and shape with 21 having normal right-facing E^R, 72 with equivocal right- or left-facing $E^{R/L}$, and six with only left-facing E^L orientations. (For DVA and block letter details of all 154 sonnets including eight additional pairs of sonnets with sequential *EO* or *EOX* block letters, see Supplementary Table 1 [21b].)   As an example, Sonnet 82, shown in Figure 2 below, has $E^{Rd/Lu}OX$ block letters formed by 10 of the 15 DVAs with only limited interference from extraneous (unneeded) DVAs surrounding the block letter *O*. (In Tweedale's work [49] more than half the DVAs in *Shake-speare's Sonnets* were overlooked or not indicated.)
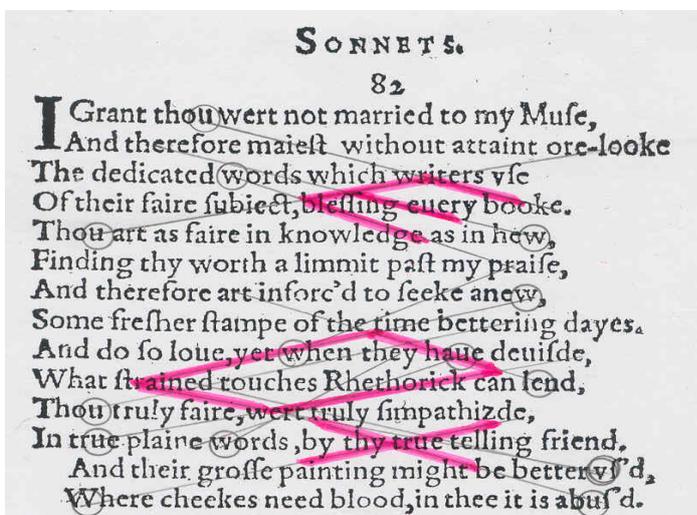

Figure 2.   Facsimile of Sonnet 82 in *Shake-speare's Sonnets* (1609) showing $E^{Rd/Lu}OX$ block letters formed by 10 of the 15 DVAs.

For further comparison, as will be elaborated later, among 35 of 38 sonnet sequences or cycles nominally written by or ascribed to authors other than the Earl of Oxford (or "Shakespeare") that appeared between the years 1557 and 1633, only 122 (7.39%) of 1,650 sonnets in the 35 sequences contain EO or EOX block letters formed by DVAs. This random frequency is so much smaller than the 64.3% occurrence (or even 60.4% if the six EO sonnets with unambiguous E^L orientations are not counted) in *Shake-speare's Sonnets* that, by comparison, the higher frequency in the latter is *extremely unlikely* to be due to chance (as assessed statistically by the Chi-squared test, $p < 0.00001$).

In the original 1593 printing of the narrative poem *Venus and Adonis*, $E^{Ru}OX$ block letters formed by DVAs are present successively in the three opening stanzas of the 199 six-line stanzas. In the even longer 1594 poem *The Rape of Lucrece*, a set of $E^{Rd}OX$ block letters occurs entirely in the first of the 265 seven-line stanzas. The short dedication by "William Shakespeare" to Henry Wriothesley that prefaces *Venus and Adonis* has $E^{Ru}OX$ block letters, and the similar dedication for *Lucrece* has $E^{Ru/Ld}OX$ block letters. Similarly, $E^{Ru}OX$ block letters are present in the first, third, and fourth stanzas, respectively, of the 47 seven-line stanzas of the disputed-authorship [8,50] poem *A Lover's Complaint* "BY WILLIAM SHAKE-SPEARE" appended to *Shake-speare's Sonnets* of 1609. Likewise, $E^{Ru/Ld}OX$ block letters are present in the 14-line prologue sonnet to the anonymous "*Newly corrected, augmented, and amended*" 1599 quarto edition of Shakespeare's play *Romeo and Juliet* but *not* in the earlier 12-line version of the prologue to the 1597 quarto of this play. The block letters $E^{Ru}OX$ occur twice on the opening page of the 1598 quarto of *Love's Labour's Lost*, the first play published bearing the name "W. Shakespere" as the author and labeled "Newly corrected and augmented." As a final example, E^ROX block letters are repeated three times in the prefatory epistle titled: "A neuer writer, to an euer reader. Newes" that appears in the 1609 quarto of *Troilus and Cressida*, "Written by William Shakespeare."

C. IN POEMS ABOUT LORD OXFORD

At this point the reader might wonder, despite the statistically highly significant difference in their occurrence in *Shake-speare's Sonnets* compared to other sonnets of the period, whether EO and EOX block letters are ever really present by design or are simply artifacts or chimeras—the result of linguistic, stylistic, or even printing idiosyncrasies. With nine possible DVAs, fortuitous formations of EO and EOX block letters of different shapes, sizes, and orientations of the letters E and O as well as X are bound to occur, as already seen, especially when more DVAs are present than are needed to form them. It is only fair to ask therefore: Can it be determined whether EO or EOX block letters formed by DVAs are ever really present by design rather than by accident?

As just noted for *Shake-speare's Sonnets*, one obvious test—which will be further explored later—is to examine and compare how often the device occurs in other control poems of the period. A related test, also already mentioned, will now be considered in more detail. It consists in noting the abundant occurrence of EO or EOX block letters having almost exclusively E^R or equivocal $E^{R/L}$ but few, if any, unambiguous E^L orientations formed by DVAs in poems about, or in tribute to, Lord Oxford, in particular by one of his most famous contemporaries, Edmund Spenser (1552?–1599).

Spenser's apparent knowledge and use of this cryptographic device as a subtle way of referring to de Vere is reflected in at least three of his allegorical poems. Thus, in his 440-line iambic pentameter poem written in eight-line stanzas, *Muiopotmos*: or *The Fate of the Butterflie*, imprinted in 1590—a work held by some to be an allegorical portrayal of Oxford as the butterfly "Clarion" [1,9]—E^ROX or $E^{R/L}OX$ block letter sequences are repeated 11 times in the 55 stanzas with eight of them appearing in a closely-linked pattern in the first 22 stanzas. An appropriate control is Spenser's 688-line, 86-stanza poem in the same meter and form titled *Virgil's Gnat*

(evidently not about Oxford), published in 1591 but written a decade or more earlier. This poem, a paraphrase translation of Virgil's *Culex*, has just two irregularly spaced *EO* or *EOX* block letters in the first 22 stanzas, and only seven more that are scattered erratically in the remaining 64 stanzas. Although the overall frequency of *EO* or *EOX* block letters in the two poems (11/55 vs. 9/64) is not significantly different statistically, the fourfold greater occurrence of these block letters in the first 22 stanzas of *Muiopotmos* compared with their occurrence in the first 22 stanzas of *Virgil's Gnat* has a suggestively small p value of 0.07 by either the Chi-square test with the Yates correction or by Fisher's exact 2 X 2 Chi-square test.

In Spenser's *The Teares of the Muses*, also published in 1591, along with *Muiopotmos* and *Virgil's Gnat* as part of his *Complaints, Containing sundrie small Poems of the World's Vanitie*, the block letters E^{Rd}, *O*, and *X* occur successively in the six-line iambic pentameter stanzas 3, 7, and 10, respectively, of the section on *Thalia* (the Muse of Comedy). In the *Thalia* verses, several lines refer specifically to "Our pleasant *Willy, . . .* from whose pen / Large streames of honnie and sweete Nectar flowe", who has been identified as Oxford-Shakespeare [1,9,26,33,36,46]. As controls, among the other eight six-line stanza sections of *The Teares of the Muses*, five—*Clio* (History), *Melpomene* (Tragedy), *Calliope* (Heroic poetry), *Urania* (Astonomy), and *Polyhymnia* (Sacred Music and Dance)—have *OX* and *XO* block-letter patterns but no *EOX* sequence as in *Thalia*.

In his long allegorical poem, *The Faerie Queene* (1590, 1596), written in his nine-line stanza form, Spenser portrays a "noble knight" named Sir "*Scudamour*" (lit. "the shield of love"), who, on the basis of evidence presented in the next paragraph, has been proposed to represent Lord Oxford. Introduced at the end of Canto 6 of Book III of *The Faerie Queene*, Sir *Scudamore* (later spelled "*Scudamour*") and his encounters are the subject of much of Canto 11 and the closing verses of Canto 12 of Book III as well as parts of Cantos 1, 5, 6, 9, and 10 of Book IV. Since E^R or $E^{R/L}$ *OX* block letters are present in 27 (93.1%) of the 29 passages of 2 to 4 stanzas in these cantos that include or refer to the name "*Scudamour*" (initially "*Scudamore*"), it is obviously plausible to identify "Sir *Scudamour*" as Lord Oxford. By contrast, in passages of similar length in *The Faerie Queene* involving other personages, *EO* and *EOX* block letters are present less than 20% of the time, thereby indicating that the high 93.1% frequency in the "Scudamour" passages seems *very* unlikely to be due to chance.

Earlier evidence for identifying "Sir *Scudamour*" in *The Faerie Queene* as Lord Oxford stems from the opening line ("*L'Escü* d'amour, the shield of perfect love,") of a poem in *A Hundreth Sundrie Flowres* (1573) titled: "The absent lover (in ciphers) disciphering his name, doth crave some spedie relief as followeth." This poem, the last in a series of 16 poems in *AHSF* subscribed "*Meritum petere, grave*" ("to deserve praise is a serious matter"), has been assigned on various grounds as having been written by young Oxford [1,5,32,36,51]. In support of this assignment, this 36-line, six-stanza poem in iambic pentameter has the block letters $E^{Rd}OX$ formed successively by DVAs in the first three stanzas and $E^{Rd/Lu}O$ block letters in the last two stanzas.

Finally, what appears to be a direct use of this monogram identity device by Spenser occurs in his dedicatory sonnet to "the right Honourable Earle of Oxenford" at the end of Book III of *The Faerie Queene.* As seen in Figure 3 on the next page, this sonnet has $E^{Rd}OX$ block letters formed by 10 of 13 DVAs. Three (18.8%) of the other 16 dedicatory sonnets in *The Faerie Queene* have less well-defined *EO* or *EOX* block letters. This frequency for random occurrence falls in the same range found in some of Spenser's shorter sets of sonnets printed in his 1591 *Complaints, i.e., The Visions of Bellay* (3/15 = 20.0%), *Ruines of Rome: by Bellay* (4/33 = 12.1%), *Visions of the world's vanitie* (1/12 = 8.3%), and *Vision's of Petrarch* (1/7 = 14.3%). Among Spenser's well-known longer set of 89 *Amoretti* sonnets published in 1595, eight (9.0%) have apparently random *EO* or *EOX* block letters with an E^{Rd} in No. 15, an E^{Ld} in No. 64, and $E^{R/L}$ patterns in Nos. 2, 21, 39, 55, 81, and 88.
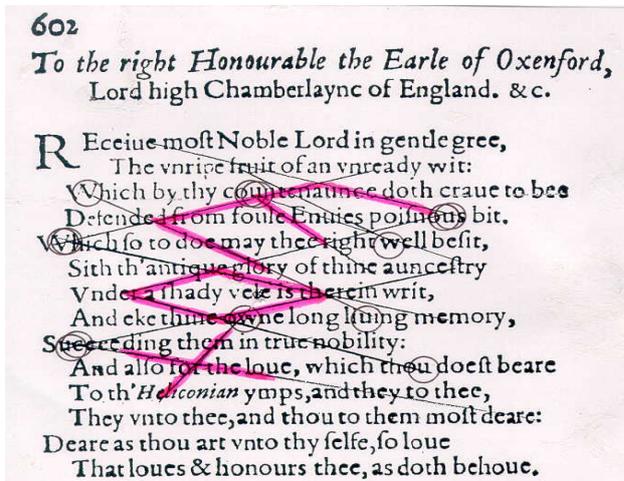
Figure 3. Facsimile of Edmund Spenser's dedicatory sonnet to Lord Oxford at the end of Book III in *The Faerie Queene* (1590, 1596) showing $E^{Rd}OX$ block letters formed by 10 of the 13 DVAs.

Another example of a direct poetical tribute to Lord Oxford containing $E^{R/L}OX$ block letters is Henry Lok's sonnet dedicated "To. . . the Earle of Oxford" that begins: "If Endor's widow had power to raise. . ." This sonnet by one of Oxford's former servants is the twelfth in a series of 60 dedicatory sonnets appended to Lok's *Christian Passions* verses on *Ecclesiastes* published in 1597. Of the remaining 59 sonnets taken as controls, seven of them (11.9%) have random *EO* or *EOX* block letters formed by DVAs.

D. IN TRIBUTES TO "SHAKESPEARE"

As the foregoing examples indicate, *EO* and *EOX* block letters formed by DVAs as a device to identify Lord Oxford appear to have been recognized and used by at least two of his contemporaries. The next crucial question is: Do such name-identifying block letters occur—and how often—in poetical tributes of the time to "Shakespeare"?

Among the earliest of such tributes is that by John Weever (1573–1637), his Epigram 22 sonnet of "The fourth weeke. *Ad Gulielmum Shakespeare*" in his *Epigrammes in the oldest cut, and newest fashion* published in 1599. As shown in Figure 4 on the next page, this sonnet contains a clear set of $E^{Rd}OX$ block letters. Only one other poem (No. 21 of "the first weeke") in this collection of 85 mostly short epigrams has (apparently random) *EO* block letters. In 1614 Thomas Freeman, evidently a pen-name of de Vere's illegitimate son Edward Vere (or Veere) (1581–1629) [33], published a similar poetical tribute to "Shakespeare" with $E^{Rd/Lu}O$ block letters in his Epigram 92 sonnet "*To Master W: Shakespeare*" in the *Second Bowle* of his *Rvnne, And a great Cast*, which otherwise lacks *EO* block letters.
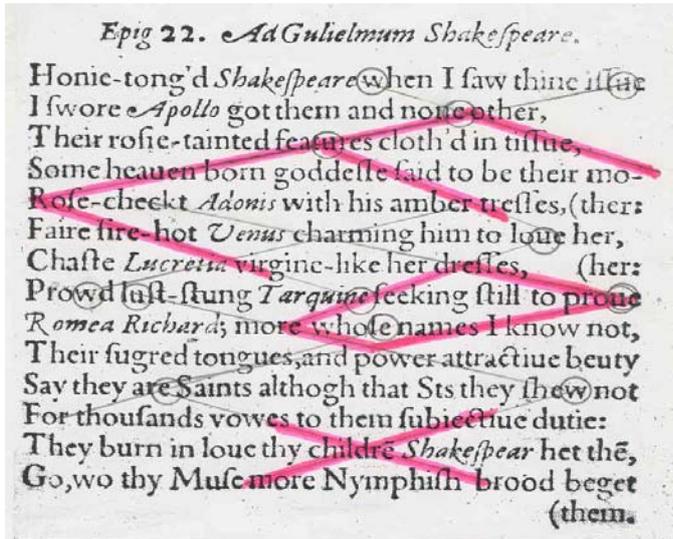
Figure 4. Facsimile of John Weever's sonnet in praise of "Shakespeare" in his *Epigrammes* (1599) showing $E^{Rd}OX$ block letters formed by 10 of the13 DVAs. Note that restoration of ther to mo- of mother at the end of line 4 supplies the letter r required to complete the downward-pointing DVA on the upper right.

Seven years earlier, William Barksted (1577–1620) published his *Myrrha the Mother of Adonis*, an 896-line iambic pentameter narrative poem, in which the last of the 112 eight-line stanzas has the revealing lines in the past tense: "His song was worthie merrit (*Shakspeare* [sic] hee) / sung the faire blossome . . ." suggesting that the author was no longer living. This closing stanza has an overlapping pattern of $E^{Rd/Lu}OX$ block letters formed by the 10 needed DVAs that are present. Among the other 111 stanzas, only four (Nos. 34, 60, 76, and 103) have EO (but no EOX) block letters, a frequency of only 3.6%, in agreement with random expectation for such short stanzas.

Remarkably, EO block letters are present in all the prefatory commendatory poems in the celebrated first and second folios of Shakespeare's plays. In the First Folio, published in 1623, Ben Jonson's short 10-line iambic tetrameter poem, "To the Reader." facing the controversial "figure" engraving of "William Shakespeare," has 16 DVAs, eight of which form $E^{Rd/Lu}O$ block letters (see the upper part of Figure 5 on the next page).

Jonson's famous 80-line iambic pentameter eulogy to "The AVTHOR MR. WILLIAM SHAKESPEARE" has the block letters E^{Rd} OF OX on the first page and $E^{R}OX$ repeated three times on the second page. In the opening lines of this effusive encomium, Jonson evidently paraphrased part of a four-stanza, 24-line iambic pentameter commendatory poem by "Ignoto" at the end of Book III of *The Faerie Queene* in praise of Edmund Spenser [9,26,33,46]. This Ignoto poem has $E^{Ru/Ld}O$ block letters in the first stanza and $E^{Rd/Lu}O$ block letters in the last stanza, thereby pointing to Lord Oxford as the author (*cf*. later evidence herein for Oxford as Ignoto) and, as implied by Jonson, his identity with "THE AUTHOR MR. WILLIAM SHAKESPEARE."

Also in the First Folio of 1623 as well as in the Second Folio of 1632 are $E^{Rd}O$ block letters in the commendatory sonnet "Vpon the Lines and Life of the Famous Scenic Poet, Master VVILLIAM SHAKESPEARE" by Hugh Holland (1563–1633) and in the 22-line tribute in iambic pentameter "TO THE MEMORIE of the deceased Authour Maister W. SHAKESPEARE" by Leonard Digges (1588–1635). Even the short eight-line iambic pentameter tribute "To the memorie of M.*W*. Shake-speare" by "I.M." (most likely John Marsten, 1576–1634 [20,44]) has a set of $E^{Ru}O$ block letters (with a fan-shape E) formed by the eight DVAs that are present. With the possible exception of Jonson's 18-line poetical tribute "To SIR HORACE VERE" (Oxford's cousin) in his *Epigrammes* of 1616, none of the other poems by these three authors in praise of others appear to contain EO or other meaningful block letters formed by DVAs.

11

In the Second Folio, Ben Jonson's ten-line iambic tetrameter poem "To the Reader." has the two-letter indentation in the First Folio altered to a one-letter indentation. As seen in the lower part of Figure 5 below, this change results in fewer DVAs that then form a different, not quite perfect $E^{Rd/Lu}O$ block-letter pattern. Besides retaining the testimonials of the First Folio with their EO block letters, the Second Folio has three new poetical tributes. The first is an encomiastic iambic pentameter poem in 38 rhymed couplets: "On Worthy Master Shake-/speare and his Poems." This tribute, subscribed "*I. M. S.*" (for In Memoriam Scriptoris? [22] or possibly for the song writer John Milton Senior?), contains five $E^{R}OX$ or $E^{R/L}OX$ block-letter groupings formed by 50 of 64 DVAs. The second is the anonymous eight-line iambic pentameter tribute in four rhyming couplets in the style of (and possibly by) Jonson shown in Figure 6 on the next page containing $E^{Rd/Lu}OX$ block letters formed by 10 of 11 DVAs. The third is the famous unsigned poem by John Milton Jr. (1608–1674), a 16-line "Epitaph on the admirable Dramaticke Poet, VV. SHAKESPEARE" that has $E^{Rd}OX$ block letters formed by 10 of 13 DVAs.
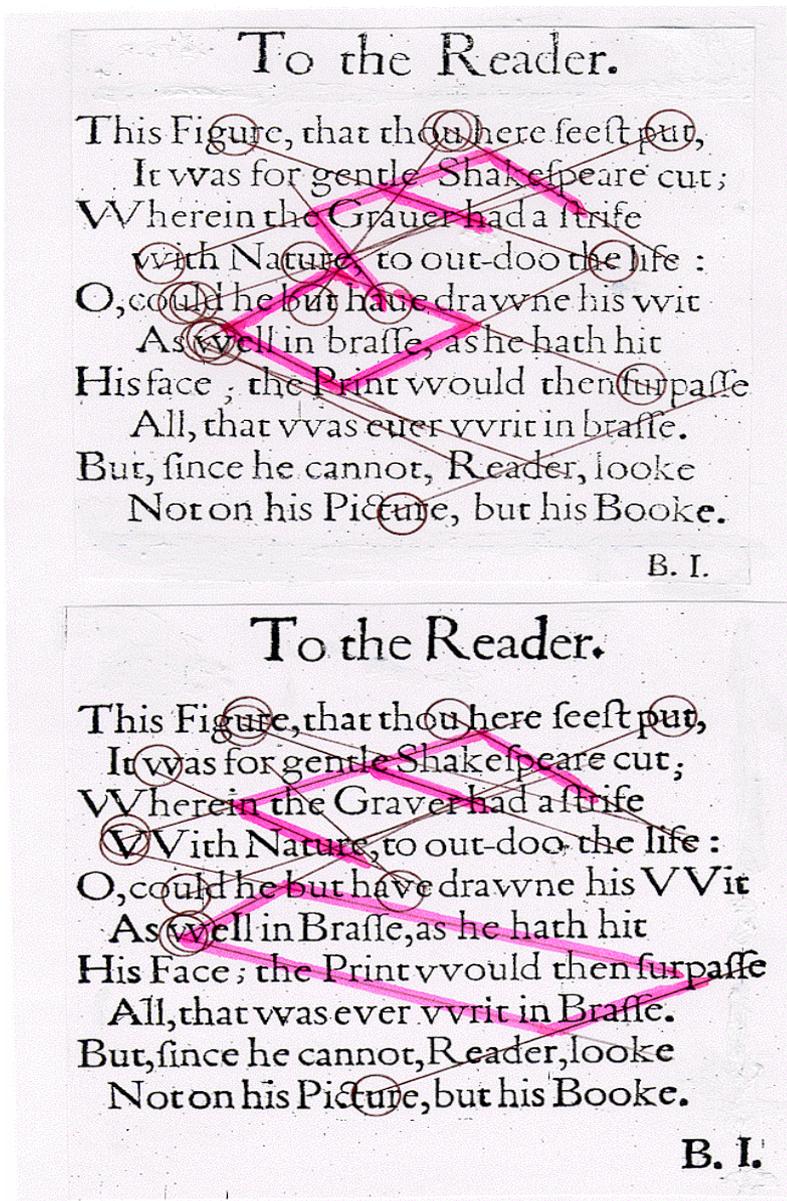

Figure 5. Facsimile of Ben Jonson's poem "To the Reader" in the 1623 First Folio (upper) and 1632 Second Folio (lower) showing the effect of change in indentation on the $E^{Rd/Lu}O$ block-letter pattern.
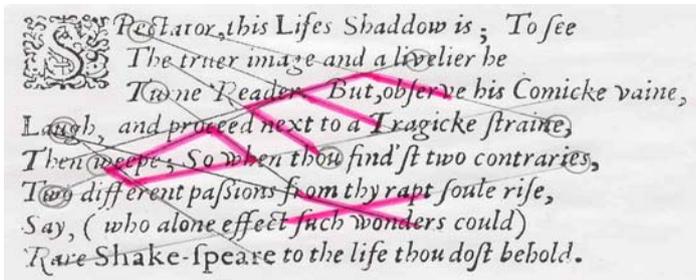
Figure 6. Anonymous eight-line prefatory poem in the 1632 Second Folio paying tribute to "Shake-speare" showing $E^{Rd/Lu}OX$ block letters formed by 10 of the 11 DVAs.

Although not a poem, another notable tribute to Shakespeare is the short dedication by stationer Thomas Walkley (fl. 1618–1658) to his 1622 quarto edition of Shakespeare's play *Othello*, wherein he speaks warmly of "The Author . . . whose name is sufficient to vent his worke." This 11-line prose dedication, averaging 11.1 syllables per line, has 13 DVAs, of which 10 form $E^{Rd/Lu}OX$ block letters. By contrast, Walkley's similar short dedication to his 1619 quarto of Beaumont and Fletcher's play *A King and No King* has only three non-block-letter forming DVAs, and the same is true of his dedication to his 1628 publication of *Brittain's Ida*, which he incorrectly attributed to Edmund Spenser.

In *Poems: VVritten by Wil: Shake-speare. Gent.*, published in 1640, there are additional testimonials with EO block letters. Beneath a frontispiece engraving of "Shakespeare" facing in the opposite direction from the engraving in the first two folios of the plays—on which it was obviously modeled— is an eight-line parody of the first part of Ben Jonson's 80-line folio poem to "The AUTHOR MR. WILLIAM SHAKESPEARE." Although it lacks enough DVAs to form EO block letters, it is subscribed with Jonson's inverted initials "I. B." (for the publisher John Benson, d. 1667). A prefatory 14-line commendatory poem in seven rhymed couplets, "Of Mr. *William Shakespeare*", signed by John Warren (d. 1631), has nine DVAs with eight of them forming $E^{Ru}O$ block letters. Facing this poem is the beginning of a 28-line, two-page prose dedication "To the Reader" signed "I. B.", which has $E^{Ru}O$ block letters formed by eight of 14 DVAs. This dedication is followed by a glowing 68-line tribute in rhyming couplets, "Vpon Master WILLIAM SHAKESPEARE, the *Deceased Authour, and his* POEMS" by "Leon. Digges" with a complicated array of at least 53 DVAs creating an uncertain block letter pattern.

Also present in this 1640 publication of Shake-speare's *Poems* is a peculiar 16-line eulogy containing $E^{Rd}O$ block letters pointing to de Vere as Shakespeare that was written many years earlier and signed "*W.B.*" (William Basse, 1583–1635) "*On the death of* William Shakespeare, *who died in Aprill*, Anno Dom. 1616." John Milton Jr's 16-line "Epitaph on the admirable Dramaticke Poet, VV. SHAKESPEARE" that first appeared in the Second Folio, but here signed "*I. M.*", is also reprinted while retaining slightly modified $E^{Rd}OX$ block letters. An anonymous 32-line testimonial in rhymed couplets titled: "*An Elegie on the death of that famous Writer and Actor*, M. William Shakespeare" rounds out these poetical accolades with a further set of $E^{Ru}OX$ block letters.

In all these tributes by many different contemporary authors to "Shakespeare," it is noteworthy that the orientation of the letter E in the EO and EOX block letters uniformly faces normally to the right or, as can be seen, equivocally, to the right or left. If present by accident, the block letter E in these tributes, when unambiguous, would be expected to face about equally to the right or left. However, the fact that it faces (or can be seen as facing) consistently to the right strongly indicates it is present by design and not by accident.

13

Moreover, with so many tributes by different authors, it is difficult to argue that the presence of *EO* and *EOX* block letters in them is entirely due to linguistic, typographic, or other accidental idiosyncrasies rather than design. Still, because the letters in DVAs comprise, on average, about 25% of the letters in English literature [4] (**e** = 13%, **r** = 6%, **u** = 3%, **v** = 1%, and **w** = 2%)—with the most common letter **e** appearing twice and in combination with **r**—it is clear, as already noted, that DVAs, with their nine different spellings, are also likely to occur fortuitously to some extent, especially in texts with more than ten syllables per line. Further examination was therefore undertaken of a wide variety of poems of the period for *EO* block letters formed by DVAs as additional controls and also as a potential probe or ferreting tool to help identify other poems by or about Lord Oxford.

E.   IN OTHER POEMS OF THE PERIOD

Among the 757 different poems in seven well-known Elizabethan poetical miscellanies, the first editions of which were published during Oxford's lifetime, 175 (23.1%) of them contain *EO* or *EOX* block letters formed by DVAs. (For DVA and block letter details for each poem in these miscellanies, see Supplementary Tables 2–8A [21b].) If all 17 of the 14-line sonnets printed in three or four stanzas in these miscellanies are conflated into single stanzas, this number of 175 poems with *EO* or *EOX* block letters increases to 192 (25.4%). Of the various *EO* poems in the miscellanies, only 11 are directly attributed to Lord Oxford. The one poem signed by "W. Shakespeare" ["On a day, (alack the day,) . . ."] has $E^{Rd/Lu}O$ block letters. Except for a few poems by known authors, most of the other poems with *EO* block letters are either unsigned or are subscribed by intriguing pen names with practically only $E^{R}O$ or $E^{R/L}O$ block letters, like "My Luck is Loss" (5/5 with *EO* or *EOX* block letters), "Ignoto" (10/22), "Shepherd Tony" (4/7), "Anomos" (27/69), and "Melophilus" (10/10). Although they vary in form and theme, these pen-name poems and many of the unsigned ones with E^{R} or $E^{R/L}$ block letters have lyrical qualities and distinctive linguistic, lexical, syntactical, and other stylistic features characteristic of Oxford's (and Shakespeare's) known poetry. Many of them, especially the large number by "Anomos" (lit. "outside the law"), have long been hailed by literary scholars as some of the finest poems of the period [43].

A striking example of one of these pen-name poems appears in the poetical miscellany *Brittons Bowre of Delights*, published in 1591 (see Supplementary Table 4 [21b]). Signed "Trentame," but generally attributed to Oxford [3], the poem is an exquisite eight-line acrostic tribute to Elizabeth Trentham, a lady of the court, whom de Vere married in late 1591. Opening with the line "Time made a stay when highest powers wrought . . .," the poem consists of two iambic pentameter quatrains with the first letters of the lines spelling TRENTAME. Remarkably, it has two sets of *EOX* block letters ($E^{Ru/Ld}OX$ and $E^{Rd}OX$) formed by 20 of the 24 DVAs that are present.

By comparison, the presumably random occurrence of *EO* or *EOX* block letters (with about equal right and left unambiguous orientations of the block letter *E*) in poems in the seven miscellanies that are fairly certain to have been written by *other* authors is less than one-seventh or ca.15% of their occurrence in the poems subscribed by Oxford and the above pen names. However, because the poems in these miscellanies differ greatly in form, style, length, lines per stanza, and syllables per line, it is also obvious that more reliable comparisons would be with poems of the same form and length, such as sonnets, of which there are many sequences of the period by various authors.

As noted earlier on page 8, among 35 of 38 sonnet sequences or cycles nominally written by or ascribed to authors other than Oxford that appeared between the years 1557 and 1633, 122 (7.39%) of the 1,650 sonnets in the 35 sequences contain *EO* or *EOX* block letters. Random occurrence of *EO* and *EOX* block letters in these

122 sonnets is indicated by the fact that almost equal numbers of them have unambiguous E^R (29) and E^L (27) orientations, while the remaining 64 have equivocal $E^{R/L}$ orientations. (For details on all 38 sequences containing a total of 1,780 sonnets, see Supplementary Table 9 [21b].) The other three of the 38 sonnet sequences (*Diella* by R.L, *Emaricdulfe* by E.C., and *The Tears of Fancie*, or *Love Disdained* by T.W. (= Thomas Watson, d. 1592) comprise 131 sonnets with 60 (45.8%) of them having *EO* or *EOX* block letters—42 with $E^{R/L}$ and 18 with E^R but *none* with E^L orientations. (For details, see Supplementary Tables 9A, 9B, and 9C [21b].) The exclusive unambiguous E^R block letter orientations, without any E^L orientations, in these three sequences clearly point to design rather than accident, *i.e.*, that Oxford may have written or was involved in writng them. In agreement with the *EO* block letter findings indicating Oxford's connection with these sonnets, many of them have close linguistic and stylistic resemblances to *Shake-speare's Sonnets* [5,47],

Compared with the three foregoing sonnet sequences, an even higher percentage (81.8%) or 27 of the 33 sonnets in the 1573 publication, *A Hundreth Sundrie Flowres* (*AHSF*, referred to earlier on page 9), has *EO* or *EOX* block letters with *only* unambiguous E^R or equivocal $E^{R/L}$ orientations. (For details, see Supplementary Table 10 [21b].) Although George Gascoigne (1534?–1577) is widely regarded as the principal author of *AHSF* with its various intriguing, mostly Latin, posies [38,40], Oxford's primary role in its production was advanced in 1926 by Bernard M. Ward (1893–1945) [32,51] and recently reaffirmed on linguistic grounds by Brame and Popova [5]. Obviously, if most of the sonnets in *AHSF* are by Oxford, he was writing more than a few sonnets while still very young. As might be expected, many other poems in *AHSF* also have E^RO or $E^{R/L}O$ block letters formed by DVAs, thereby again pointing to Oxford's authorship.

F.   IN ADDITIONAL EXAMPLES

From what has been presented, other poems, especially sonnets, that are by or about Lord Oxford, might be expected to have a fairly high frequency of *EO* block letters formed by DVAs. By contrast, as seen here, an average random or fortuitous occurrence of 15% or less of such block letters is found in poems *not* by or about him. Some additional examples of the apparent use of *EO* block letters as an internal de Vere-Oxford identity device follow.

The first example occurs in the exquisite sonnet titled: "*Phaeton to his friend Florio*," commending John Florio (1553–1635) for his *Second Frutes*, an exemplary Italian-English language instruction manual published in 1591. This sonnet, written in the Italian style, begins: "*Sweete friend whose name agrees with thy increase*," and is proposed to be by "Shakespeare" [17] or by Lord Oxford [3,5,47]. It has $E^{Rd/Lu}OX$ block letters formed by 10 of 15 DVAs, with the *X* located neatly inside the *O*.

The second example is an intriguing English style sonnet beginning: "The restless swallow fits my restless mind," which is inscribed in a cartouche in the lower right-hand corner of a famous "Pregnancy Portrait" in the British Royal Collection. Painted by Marcus Gheeraerts the Younger around the end or turn of the 16th century, this portrait throughout most of its existence has been thought to represent Queen Elizabeth I in a "fancy dress." From a careful study of the painting and its alterations, plus the strong linguistic resemblances to poem No. 13 in the Table on page 6 (*cf.* the similar 26-line poem with two sets of E^ROX block letters in *AHSF*: "The hateful man that heapeth in his mynde . . ."), the cartouche sonnet has been reasonably ascribed to Lord Oxford [2; *cf.* 37,44]. Support for this conclusion is found in the occurrence of $E^{Rd/Lu}OX$ and $E^{Ru/Ld}OX$ block letters formed by 20 of 25 (or 26 DVAs, depending on the indentation of the closing couplet) in the sonnet when it is conflated into a single stanza in a printed transcription retaining the original spelling.

15

The third example (included in one of the 38 sonnet sequences listed in Supplementary Table 9 [21b]) is the "Sonnet Decifring [describing] the Perfyte Poete" appended to eighteen-year-old King James VI of Scotland's *Essayes of a Prentise* published in 1584. Evidently pointing to Oxford as the subject, this sonnet has two sets of $E^{Rd}O$ block letters formed by 16 of the 20 DVAs that are present. For comparison, as indicated in Supplementary Table 9 [21b], only the second sonnet of James's 15 sonnets in his *Essayes of a Prentise* has (apparently random) EO block letters (as $E^{Rd/Lu}O$).

The fourth example consists of the three prefatory sonnets to the 3020-line poem, *The Tragicall Historye of Romeus and Juliet*, first published in 1562 and reprinted during de Vere's lifetime as late as 1587. Although the title page states that the story was "*written first in Italian by [Matteo] Bandell[o] and nowe in Englishe by Ar. Br.*", the poem is actually "a very able translation" [34] of Pierre Boiastuau's French version in his *Histoires Tragiques*. Since Shakespeare's play *Romeo and Juliet* adheres closely to the story line of this poem, the notion that Oxford wrote the three prefatory sonnets with one having an $E^{R/L}O$ and two having an $E^{R}O$ block letter pattern is not unreasonable. Although the extent to which young Oxford may have been involved in the composition and publication of the *Romeus and Juliet* poem in 1562 is uncertain [19], it is known that he was already fairly proficient in French at that time [3,14,19,26,33,36,46]. Moreover, in *Epitaphes, Epigrams, Songs, and Sonets* of 1567 by George Turberville, there is, at the end, a 46-line "Epitaph on the death of Maister Arthur Brooke drowned on passing to New Haven." This poem extols the poet-author/translator of *Romeus and Juliet* and has four sets of $E^{R}OX$ block letters formed by 40 of 48 DVAs, thereby indicating that it was probably actually written about or by de Vere. By contrast, other poems in Turberville's *Epitaphes* appear to have only random DVAs.

The fifth example consists of two unsigned English-style sonnets on f.18v in the Rawlinson 85 Poetical MS with the opening lines: "My wayning ioyes, my still increasing greife" and "The dreye days when I must take my leave." Each of these sonnets contains $E^{Rd}OX$ block letters formed by DVAs. Other sonnets and poems in the collection assigned to various contemporary courtier poets, *e.g.*, Sir Philip Sidney (1554–1586), Sir Edward Dyer (1543–1607), and Sir Walter Raleigh (1552–1618), do not contain EO or EOX block letters formed by DVAs.

The sixth example is a moving eulogy to Queen Elizabeth by "Infelice Academico Ignoto", that appeared in the 1603 "*Epicedium*, A FVNERAL Oration, upon the death of the late deceased Princesse of famous memorye, Elizabeth . . ." The first of the 13 four-line stanzas in iambic pentameter contains a clear block letter E^{Ru}, and the second stanza contains a block letter O, both neatly formed by DVAs. Except for another block letter O formed by DVAs in the ninth stanza, the remaining stanzas contain only either random or no DVAs.

The seventh example occurs in a warm commendatory Italian-style sonnet in the 1605 quarto of Ben Jonson's play *Sejanus, His Fall*. Suggestive of the exclamation "*Sweet Swan of* Auon!" in Jonson's 80-line eulogy to "The AUTHOR MR. WILLIAM SHAKESPEARE" in the First Folio, this sonnet is signed "*CYGNVS*" (the "Swan") and has $E^{Rd}OX$ block letters formed by 10 of 13 DVAs.

The eighth and final example, challenging a conventional authorial assignment [43], involves a series of poems in *A Poetical Rapsody* published in 1602. Among 19 poems in this miscellany supposedly written by Walter Davison while still in his youth, 14 are fairly mature amorous sonnets, of which 12 have EO block letters with apparently *non*-random orientations of the block letter E—five have E^{R} and seven have $E^{R/L}$ orientations, but *none* have E^{L} orientations (see Supplementary Table 8 [21b]). Although this fact does not prove that Oxford wrote these sonnets, it clearly supports the possibility that he did, since it is unlikely that *only* E^{R} and $E^{R/L}$ but *no* E^{L} orientations of the block letter E would occur purely by chance in this many sonnets by a single author.

16

3. CRITICAL ASSESSMENT

Although other examples can be given, it is now appropriate to conclude and evaluate the validity of this research. As noted at the outset, this two-stage acrostic *EO* monogram identity device based on diagonal alignments of the four letters of the name Vere appears to be unique. If a similar or related device were known in 16th- or early 17th-century English literature, especially in view of its simplicity, DVAs or similar letter alignments to form block letters would almost certainly have been discovered long before Tweedale [49] did. Even so, the presence of DVAs by design, specifically to form *EO* or *EOX* block letters, is strongly hinted at by the "*E. O.*" and "*E. Ox.*" signatures to poems by Oxford in the Table on page 6 containing *EO* or *EOX* block letters, apart from their occurrence in other works by Oxford and by "Shakespeare."

Locating all the DVAs manually with a transparent ruler or straightedge, as performed here, can be very tedious, and, despite every effort, a few (*i.e.*, in the Supplementary Tables [21b]) have probably been overlooked. Finding them by a digital computer-scanning technique that retains the exact original position with reliable character recognition of each letter in original printings would be ideal, but this has not yet proved feasible. Clearly, a critical key requirement for successful independent replication of this work is to locate *all* the DVAs that are present in original published text facsimiles or exact printed transcriptions of manuscript versions. With later printings, as in the Shakespeare Third Folio of 1663–64, DVAs are easily lost because of even minor changes in spelling and typography.

Equally important is the correctness of *EO* block letter assignments derived from DVAs compared with those in controls and the expected random left- or right-facing orientation of the block letter *E* in them. Further support for the reliability of these determinations can be seen in the low frequency of *EO* block letters in additional control poems of unquestionable authorship. Thus, in manuscript-based printings of the early 19th century sonnets by John Keats (1795–1821), who held the traditional view of Shakespeare's authorship, only four (6.25%) of his 64 known sonnets have *EO* or *EOX* block letters formed by DVAs.

A possibly even more appropriate set of modern controls is *The Marie Sonnets* collection composed a few years ago by Elwood L. Miller [31] in memory of his sister Marie (d. March 4, 1994). These sonnets were written with the spirit and style of *Shake-speare's Sonnets* very much in mind—*but without any awareness* by Miller of DVAs or Tweedale's work. Among the 150 sonnets in this privately printed collection, only 16 (10.67%) have *EO* or *EOX* block letters, which closely agrees with the 7.39% frequency noted earlier in the 35 control sonnet sequences of the Elizabethan-Jacobean era. As expected for random occurrence of the *EO* block letters, a nearly equal number of the 16 *Marie Sonnets* with *EO* and *EOX* block letters have unambiguous E^R (four) and E^L (five) orientations, while seven have equivocal $E^{R/L}$ orientations.

Among the poetical tributes to "Shakespeare" containing *EO* or *EOX* block letters, the 16-line prefatory epitaph poem by John Milton Jr. deserves further comment. According to his own record, Milton (b. 1608) wrote this poem in the year 1630 at age twenty-two and was not yet known as a poet. How, then, did this impressive accolade—his first published poem in English—happen to appear in the Second Folio of 1632? Its publication there is proposed [15] to have been arranged through Milton's famous court musician friend Henry Lawes, whose patron and collaborator was one of the Oxford-circle [3,33,44] Herbert brother sponsors of the First and Second Folio. Although no manuscript copies are known, the tribute, as republished by Milton in 1645 and again in 1673 [13], has changes in line spacing and spelling resulting in partial loss of the *EO* block letters. Thus it is unclear whether the *EO* block letters in the earlier 1632 and 1640 printings of Milton's epitaph to Shakespeare are there by his design or not. Until his death in 1674, Milton does not appear to have ever expressed any doubt

or hint about Shakespeare's true identity. For comparison as further controls, among Milton's 19 known sonnets, only two (13.3%) of the 15 sonnets he published during his lifetime [13] have *EO* block letters (with $E^{Rd/Lu}$).

Another concern about DVAs and block letters formed by them, if present by design, is exactly how the writer, whoever he or she was, might have gone about incorporating them in the final text. If a preconceived pattern or template was involved, then the placement, size, and orientation of the block letters might be expected to show more uniformity and regularity than they do. Therefore, to the extent DVAs *are* intentional, their final incorporation may often be the result of secondary or revisionary stages of composition. In fact, this appears to have been exactly the case, for example, in the 1599 revision of the 1597 prologue to Shakespeare's play *Romeo and Juliet* mentioned earlier on page 8.

A further question is how accurately diagonal letter alignments are preserved in printed transcriptions of manuscript copies. Actually, the correspondence is usually quite good, as can be seen by application to published examples [13,41,45,49]. Even so, typographic coordination between the author or editor and printer would clearly have been desirable. However, to illustrate the ease with which incorporation of DVAs might have been implemented without undue literary constraints, the present author wrote two English-style sonnets in longhand about these discoveries, using words and phrases with the requisite letters **e**, **r**, **u**, **v**, and **w** located in approximate positions to produce DVAs that would form $E^{R}OX$ block letters. After the handwritten versions were transcribed onto a word processor and printed in modern Roman type, only a few minor changes were required to obtain the DVAs needed to form the intended $E^{R}OX$ block-letter patterns shown in Figure 7 below.
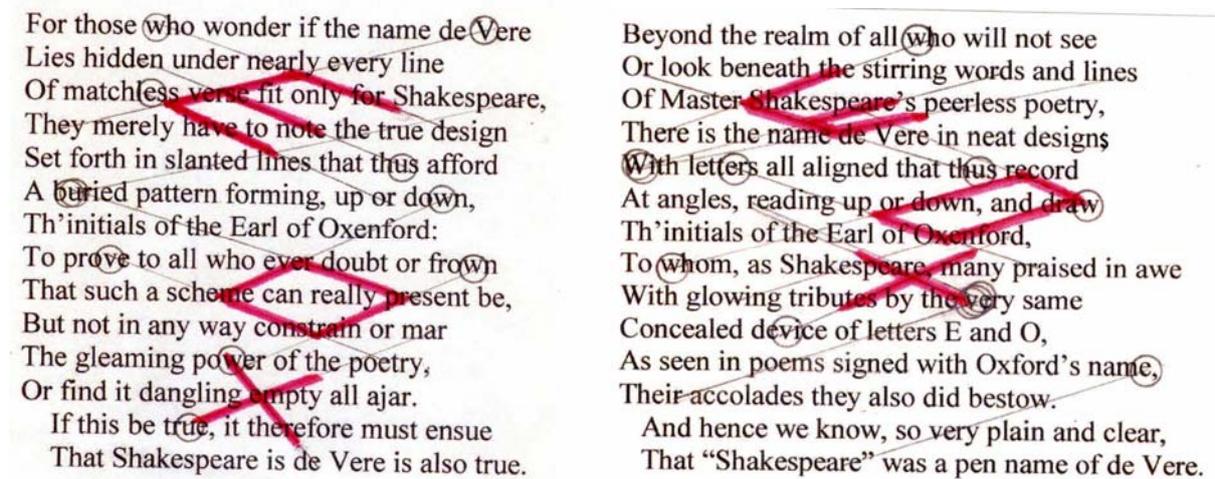

Figure 7. Two sonnets by the author illustrating intentional incorporation of DVAs needed to form $E^{Rd}OX$ or $E^{Ru}OX$ block letters.

Although the circumstances are unknown as to how the unique two-stage acrostic hidden identity monogram device reported here might have come about, young Edward de Vere was clearly familiar with the work of the famous Italian writer, mathematician, and physician Girolamo Cardano mentioned in the Introduction. In 1573 de Vere arranged for publication of Thomas Bedingfield's translation of *Cardanus Comforte*, a philosophical portion of Cardano's enormous literary output. By then, Cardano's writings on secret codes and probability aspects of games of chance had become fairly well known in upper ranks of British society and were therefore almost certainly familiar to Lord Oxford. How much Oxford was influenced by this aspect of

Cardano's work can only be conjectured, but his openly expressed desire for literary fame was ultimately well served, as seen here, by evidently embedding a cleverly concealed two-stage acrostic identity device in his poetry and plays that was apparently recognized by a considerable number of his contemporaries.

Whatever prompted or compelled Oxford to write anonymously and under various pen names and why, even after his death, this fact remained hidden, are important questions that have been and continue to be addressed intently by various authors [3,12,14,25,26,33,36,39,42,44,49,52]. However, these important matters lie beyond the immediate scope of this research, the purpose of which has been to investigate whether a hidden monogram device was actually used by Oxford-Shakespeare and in connection with him by others.

4. CONCLUDING SUMMARY

In agreement with recent cryptographic findings by Roper on the hidden de Vere plaintext authorship message in the Stratford monument inscription [44] and by Rollett on a shorter similar message in the dedication to *Shake-spears's Sonnets* [27,42], as well as the earlier discovery by Clark of the de Vere name solution to the Peacham anagram in the title page of Minerva Britanna [10,11,48], the research presented here provides new, long-sought evidence from authentic contemporary sources showing that Edward de Vere, 17th Earl of Oxford, was the author of the plays and poems written by "William Shakespeare." As a major extension of Tweedale's incomplete and inexact work [49], facsimiles of authentic original printings of poetical testimonials to "Shakespeare" have a significantly much higher frequency of diagonal Vere alignments or acrostics (DVAs) that meet or intersect to form *EO* and *EOX* block letters with normal, right-facing orientations of the letter *E* than can be accounted for by chance, thus providing a direct indication that contemporaries recognized that "William Shakespeare" was actually a pseudonym used by de Vere and wished to preserve this fact for posterity.

This same two-stage acrostic monogram identity device is also present in key works of "Shakespeare" as well as in many authentic poems by or about Lord Oxford and in various pen-name and anonymous poems that are reasonably ascribed to him. It occurs statistically much less often, however, in control poems that are not by or about him. Thus these new, broadly based cryptographic results augment and confirm the validity of three independent cryptological findings for Shakespeare's Oxford authorship already on record.

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21

7. BIOGRAPHICAL SKETCH

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Emeritus Professor Albert W. Burgstahler, University of Kansas, and Professor Jundong Wang, Shanxi Agricultural University, at the Datong Visitor Entrance to the Great Wall of China, Thursday, October 4, 2007.