

# Early Modern Literary Studies

## *A Lover's Complaint* and the Claremont Shakespeare Clinic

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Under the direction of Ward E. Y. Elliott and Robert J. Valenza, the Claremont Shakespeare Clinic has spent two decades investigating the authorship of plays and poems associated with Shakespeare.<sup>1</sup> Their project began as an attempt to check whether any anti-Stratfordian claimant to the title of “the true author” of the works attributed to “the man from Stratford” wrote in a distinctively “Shakespearean” style. They soon discovered that none did. They went on to consider problems of interest to mainstream Shakespeare scholarship and to make valuable contributions to their solution. Their findings have been largely in accord with orthodox scholarly opinion, which they have, in turn, helped to form: that *1 Henry VI*, *Titus Andronicus*, *Timon of Athens*, *Pericles*, *All Is True*, and *The Two Noble Kinsmen* were co-authored, not by Shakespeare alone; that doubts whether *The True Tragedy of Richard Duke of York* (*3 Henry VI*) is solely Shakespeare’s are also justified; that attempts to ascribe *A Funeral Elegy* and *Edmond Ironside* to Shakespeare were misguided; that *Thomas of Woodstock* is not his either; and that Shakespeare *may* have contributed to the anonymous *Edward III* and *Arden of Faversham*.<sup>2</sup>

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<sup>1</sup> The fullest and most recent published account of their work is Ward E. Y. Elliott and Robert J. Valenza, “Oxford by the Numbers: What are the Odds that the Earl of Oxford could have written Shakespeare’s poems and plays?,” *Tennessee Law Review* 72.1 (Fall 2004): 323–453. It is to the tables presented there that the present article refers. I tabulate the “Oxford by the Numbers” figures for Shakespeare poems as an Appendix. An important earlier report by the same authors was “And Then There Were None: Winnowing the Shakespeare Claimants,” *Computers and the Humanities* 30 (1996): 191–245.

<sup>2</sup> For *Edward III* and *Arden of Faversham*, see Ward E. Y. Elliott and Robert J. Valenza, “Two tough nuts to crack: did Shakespeare write the ‘Shakespeare’ portions of *Sir Thomas More* and *Edward III*? Part 1 and Part 2: Conclusion,” *Literary and Linguistic Computing* 25 (2010): 67–83, 167–77; Elliott and Valenza’s latest results for *Arden of Faversham* allow scenes 4–7 to be possibly Shakespearean (Elliott, ‘Claremont Shakespeare Clinic Report, Sept 19, 2011’, circulated by email). For orthodox views on the plays mentioned, see Stanley Wells and Gary Taylor with John Jowett and William Montgomery, *William Shakespeare: A Textual Companion* (Oxford: Clarendon Press, 1987), pp. 109–44, and, for *Edward III*, Stanley Wells and Gary Taylor, gen. eds., *William Shakespeare: The Complete Works* (Oxford: Clarendon Press, 2nd edn, 2005), p. 267. That Shakespeare contributed to *Arden of Faversham* cannot yet be said to be the “orthodox view,” but a strong case is made by Hugh Craig and Arthur F. Kinney, eds., *Shakespeare, Computers, and the Mystery of Authorship* (Cambridge: Cambridge University Press, 2009), pp. 78–99.

Elliott and Valenza are wrong, in my view, in thinking that the three pages penned by “Hand D” of the manuscript play *Sir Thomas More* are not Shakespeare’s, though on the right track in finding that it comes closer to meeting their test requirements as a post-1600 than as a pre-1600 composition.<sup>3</sup> They also strike me as wrong in rejecting from the canon the 329-line poem *A Lover’s Complaint* and it is their case against the *Complaint* that I want to examine here. The poem was published at the end of Thomas Thorpe’s 1609 Quarto of *Shakespeare’s Sonnets*, where it was printed under a separate ascription to “William Shake-speare.” Yet there has been long-standing debate over its authenticity. Brian Vickers has devoted a whole book to arguing that the *Complaint* is really the work of the poet and writing-master John Davies of Hereford.<sup>4</sup> If he is right, those critics are deluded who regard the poem as integral to a design intended by Shakespeare and duly realized in the Quarto and the ordering of its contents.<sup>5</sup> So whether *A Lover’s Complaint* is or is not Shakespeare’s is a question of some literary-critical consequence. Proof that it is spurious would greatly undermine confidence in the authority of Thorpe’s Quarto and its numbering of sonnets.

Subjecting *A Lover’s Complaint* to the Clinic’s battery of fourteen tests for Shakespearean authorship of poems, Elliott and Valenza judged it most unlikely to be by Shakespeare.<sup>6</sup> For testing poems, they divided texts into approximately 3,000-word

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<sup>3</sup> MacDonald P. Jackson, “The Date and Authorship of Hand D’s Contribution to *Sir Thomas More*: Evidence from ‘Literature Online,’” *Shakespeare Survey* 59 (2006): 69–78; and “Is ‘Hand D’ of Sir Thomas More Shakespeare’s? Thomas Bayes and the Elliott–Valenza Authorship Tests,” *Early Modern Literary Studies* 12.3 (January, 2007): 1.1-36 <URL: <http://purl.oclc.org/emls/12-3/jackbaye.htm>>. Shakespeare’s authorship of Hand D’s pages is also supported by evidence in Craig and Kinney, *Shakespeare, Computers, and the Mystery of Authorship*, pp. 134–61.

<sup>4</sup> Brian Vickers, *Shakespeare, “A Lover’s Complaint,” and John Davies of Hereford* (Cambridge: Cambridge University Press, 2007).

<sup>5</sup> I have argued for Shakespeare’s authorship in four articles: MacD. P. Jackson, “*A Lover’s Complaint* Revisited,” *Shakespeare Studies* 32 (2004): 267–94; “*A Lover’s Complaint*, *Cymbeline*, and the Shakespeare Canon: Interpreting Shared Vocabulary,” *Modern Language Review* 103 (2008): 21–38; “The Authorship of *A Lover’s Complaint*: A New Approach to the Problem,” *Papers of the Bibliographical Society of America* 102 (2008): 285–313; “Neologisms and the Non-Shakespearean Words in *A Lover’s Complaint*,” *Archiv für das Studium der neueren Sprachen und Literaturen* 245 (2008): 288–302. Among major modern editions in which *A Lover’s Complaint* is treated as integral to the Quarto are: *The Sonnets and “A Lover’s Complaint,”* ed. John Kerrigan (Harmondsworth: Penguin, 1986); *Shakespeare’s Sonnets*, ed. Katherine Duncan-Jones (London: Nelson, 1997; rev. edn.: London, Arden Shakespeare, 2010); *The Complete Sonnets and Poems*, ed. Colin Burrow (Oxford: Oxford University Press, 2002).

<sup>6</sup> The Clinic’s publications specifically concerned with *A Lover’s Complaint* are Ward Elliott and Robert J. Valenza, “Glass Slippers and Seven-League Boots: C-Prompted Doubts About Ascribing *A Funeral Elegy* and *A Lover’s Complaint* to Shakespeare,” *Shakespeare Quarterly* 48 (1997): 177–207, and “Did Shakespeare Write *A Lover’s Complaint*? The Jackson Ascription Revisited,” in *Words That Count: Essays in Early Modern Authorship in Honor of MacDonald P. Jackson*, ed. Brian Boyd (Newark: University of Delaware Press, 2004), pp. 117–40. But the slightly revised tables in “Oxford by the Numbers,” on which I draw, are more authoritative, though figures for a fifteenth test, for relative clauses, are not included there because they were obtained for only a small proportion of 3,000-word blocks. *A Lover’s Complaint* passed this test.

blocks. From the raw counts of various features, figures were calculated per exactly 3,000 words or per 1,000 words or per 20,000 words, or they were standardized in some other way. The Claremont figures and profiles for Shakespeare poems are reproduced in an Appendix to the present article. *A Lover's Complaint* failed four tests for 3,000-word blocks, whereas only two of the fourteen poem blocks undoubtedly by Shakespeare—one from *Venus and Adonis* and one from the *Sonnets*—failed even a single test. (It is no more than a confusing coincidence that there were fourteen tests applied to fourteen blocks.) Elliott and Valenza calculate what they call the “discrete composite probability” and the “continuous composite probability” that *A Lover's Complaint* should fail so many tests, and fail them to such an extent, if it were by Shakespeare. But, as they themselves concede, these “are not indicators of the absolute, actual probability that Shakespeare wrote the block in question.” Rather the scores “permit *comparison* of the block in question . . . with an actual Shakespeare block at the edge of his range.”<sup>7</sup> *A Lover's Complaint* emerges as “hundreds of times” less “Shakespearean” than even the worst performing actual Shakespeare block.<sup>8</sup>

The conclusion that *A Lover's Complaint* is not by Shakespeare is, however, not warranted by this evidence. In an earlier article I discussed at some length the “Thisted-Efron New Words” test.<sup>9</sup> But here I want to air some broader reservations and suggest that *A Lover's Complaint's* poor showing relative to the Shakespeare blocks was largely determined by the way in which the tests were devised. In dealing first with drama, the Clinic's procedure was gradually to accumulate data for various features in twenty-nine Shakespeare plays of his uncontested sole authorship, to standardize for a play length of 20,000 words, to determine the range of use over these core plays, and trim the upper and lower limits of “outliers” so as to create Shakespearean “profiles” or parameters within which all or nearly all core

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<sup>7</sup> Elliott and Valenza, “Oxford by the Numbers,” p. 351. Thomas Merriam, “Untangling the derivatives: points for clarification in the findings of the Shakespeare Clinic,” *Literary and Linguistic Computing* 24 (2009): 403–16, has published an astute analysis of the implications of the fact that the Clinic's “probabilities” are “not probabilities as commonly understood” (2–3). Merriam makes several valuable suggestions towards refinement of the Clinic's methodology. He points out that a strong chronological element in the data needs to be taken more fully into account and that the Clinic's “probabilities” wrongly assume that all tests are independent of one another. He demonstrates the advantages of principal component analysis. An important earlier critique, dealing only with the Clinic's work on whole plays, was by Gray Scott, “Signifying Nothing? A Secondary Analysis of the Claremont Authorship Debates,” *Early Modern Literary Studies* 12.2 (September, 2006): 6.1–50; <URL: <http://purl.colc.org/emls/12-2/scotsig2.htm>>

<sup>8</sup> Elliott and Valenza, “Oxford by the Numbers,” p. 426

<sup>9</sup> Jackson, “Neologisms.” Elliott and Valenza list the *Complaint's* T–E New Words score as -33 and the lower limit for Shakespeare's poems as -32. Given that *A Lover's Complaint* has only 2,579 words whereas all but one of the fourteen Shakespeare poem blocks have more than 3,000 words, this scarcely constitutes a “rejection,” even in Elliott and Valenza's own terms.

Shakespeare plays fell but a substantial number of non-Shakespeare plays did not.<sup>10</sup> Later, from the uncontested poems—*Venus and Adonis*, *The Rape of Lucrece*, and the *Sonnets*—and fourteen core plays, fourteen 3,000-word poem blocks and eighty-two dramatic verse blocks were formed, and profiles for poems derived.<sup>11</sup> The profiles were determined by “handfitting.” Their upper and lower limits corresponded fairly closely with the upper and lower limits of the actual ranges for poem blocks, but with some *ad hoc* trimming or extension suggested by the data from the “dramatic verse” blocks.

The procedure makes it inevitable that nearly all fourteen 3,000-word poem blocks pass nearly all of the fourteen tests, and, since the tests were especially chosen because of their capacity to fail a fair proportion of the eighty-six non-Shakespearean poem blocks chosen for comparison, they inevitably do so. But from the way the testing was set up we cannot know how we should expect a poem such as *A Lover’s Complaint* to perform, supposing it is by Shakespeare. The problem is that the determining of the profiles and the judging of how Shakespeare poem blocks perform on them are dependent on the same data. We need a “calibrating” set of Shakespeare poem blocks independent of those from which the profiles were derived. Yet even all fourteen blocks are few from which to generate reliable profiles. Verse from plays cannot help us here, since cross-genre comparisons are notoriously unreliable, a caveat that is substantiated below. Suppose we had only *Venus and Adonis* and *The Rape of Lucrece* from which to derive Shakespearean poem profiles for 3,000-word blocks, and wished to determine whether the *Sonnets* were by Shakespeare, how would blocks from the *Sonnets* perform?

From the eight narrative poem blocks (three from *Venus* and five from *Lucrece*) we can determine our profiles in a strict mathematical way rather than by *ad hoc* “handfitting.”<sup>12</sup> The approved method is to calculate means (arithmetical “averages”) and standard deviations. The latter measure dispersion around the mean. Thus 5, 6, and 7 have the same mean as 2, 4, and 12 (namely 6), but the second set of values has a much greater standard deviation, obtained by squaring each value’s difference from the mean, adding all the squared differences, dividing the total by the number of values, and then finding the square root of the figure that results. In a normal

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<sup>10</sup> The core plays included *Measure for Measure* and *Macbeth*, which each show signs of adaptation by Thomas Middleton, whose interventions are unlikely, however, to have had a significant effect on the results. See Gary Taylor and John Lavagnino, gen. eds., *Thomas Middleton and Early Modern Textual Culture: A Companion to The Collected Works* (Oxford: Clarendon Press, 2007), pp. 383–98 and 681–3.

<sup>11</sup> *The Phoenix and the Turtle* was considered too short to be used.

<sup>12</sup> Merriam, “Untangling the derivatives,” also stresses the desirability of determining profiles according to mathematical rules.

distribution, 95 per cent of values fall within two standard deviations of the mean.<sup>13</sup> Since for each test there are only eight sets of *Venus and Adonis* and *The Rape of Lucrece* values to work from, the best estimate of the standard deviation of the population from which this small sample is drawn is calculated not by dividing the sum of squared differences from the mean by the number of values (namely 8), but by the number minus one (namely 7). Naturally, this creates a wider range, when we set the limits at two standard deviations either side of the mean. Of course the implicit assumption that all the distributions are normal, or nearly so, may be unwarranted, but it is desirable to make it in order to avoid subjectivity.

Profiles calculated in this way are as in Table 1.<sup>14</sup>

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**TABLE 1**

Shakespeare profiles, derived from *Venus and Adonis* and *The Rape of Lucrece* for Claremont Shakespeare Clinic's data on tests for poems; limits are calculated as two standard deviations from the mean.

<b>Test</b>	<b>Lower limit</b>	<b>Upper limit</b>
Grade level	9	13
Hyphenated compounds per 20,000 words	106	170
Percentage feminine endings	6	24
Percentage open lines	3	23
Enclitics per 1000 lines	22	68
Proclitics per 1000 lines	241	368
"With" as 2nd last word of sentence per 1000 sentences	0	34
("no" / "no" + "not") x 1000	187	583
Bundles of badges 5	41	610
Bundles of badges 7	403	1025
Bundles of badges 8	-706	-371
Thisted–Efron slope test	-0.21	-0.05
Thisted–Efron new word test	-37	7
Modal score per block	36	1330

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<sup>13</sup> In a "normal distribution" a sufficiently large set of values will form a bell-shaped curve, with the numbers of values diminishing as they are further below or above the mean.

<sup>14</sup> I do not attempt to describe here the *nature* of all the listed tests, which are fully explained by Elliott and Valenza in "Oxford by the Numbers," *passim*, and in their earlier articles.

The number of times figures for each *Sonnets* block fall outside these ranges are as follows:

Block 1	6	Block 2	1	Block 3	4
Block 4	1	Block 5	3	Block 6	5

Figures for *A Lover's Complaint* fall outside the same ranges 4 times: for grade level (scoring 14); enclitics (scoring 12); the ratio of “no” to “no” plus “not” combined, times 1,000 (scoring 120); and the Thisted–Efron slope test (scoring -0.22).<sup>15</sup> So it performs as well or better than three of the six *Sonnets* blocks. This is despite the fact that *A Lover's Complaint* has only 2,579 words and so is subject to greater random variation than any of the five *Sonnets* blocks that have more than 3,000 words. That the size of a block in relation to the 3,000-word norm has an effect on the results is suggested by the fact that Sonnet Block 6, with only 1,729 words, fails more tests than all but one of the other *Sonnets* blocks. Moreover, *A Lover's Complaint* fails the Thisted–Efron slope test by the narrowest of margins, scoring -0.22 when the lower limit is -0.21.

It might be argued that had the Shakespearean blocks generating the profiles and the Shakespearean blocks tested according to the profiles been differently assigned—perhaps by a purely random process—the results would have been less encouraging for an ascription of *A Lover's Complaint* to Shakespeare. But this would be to miss a crucial point. As long narrative poems, *Venus and Adonis* and *The Rape of Lucrece*, published in 1593 and 1594, are different in style and purpose from the *Sonnets*, published in 1609 and almost certainly including both early and late work.<sup>16</sup> Each fourteen-line sonnet is both complete in itself and part of a sequence, and the three quatrains followed by a couplet impose different constraints on metrical, lexical, and syntactical choices. Although *A Lover's Complaint* shares its stanza form with *The Rape of Lucrece*, as Spenserian complaint wrought in the style of Shakespeare's mature dramatic verse, it is *sui generis* among Shakespeare's works, and so might be expected to differ, in relation to the Claremont test profiles, from both the narrative poems and the *Sonnets*.

That Shakespeare's *Sonnets* are not homogenous with his narrative poems can readily be demonstrated by t-tests, which determine the probability that two samples belong

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<sup>15</sup> The tests for which *A Lover's Complaint* fell outside the Elliott–Valenza profiles were: enclitics; “with” as second to last word of a sentence; the ratio of “no” to “no” plus “not” combined, times 1,000; and Thisted–Efron new words.

<sup>16</sup> See the *Sonnets* editions of Burrows, pp. 103–11, and Katherine Duncan-Jones (2010), pp. 1–27.

to the same population.<sup>17</sup> These t-tests reveal significant differences at the  $p < 0.0001$  level for hyphenated compounds; at the  $p < 0.005$  level for Thisted-Efron slope, Thisted-Efron new words, and grade level; at the  $p < 0.025$  level for feminine endings and enclitics; and at the  $p < 0.05$  level for proclitics.<sup>18</sup> The quoted figures correspond to probabilities of less than one in a thousand, two hundred, forty, and twenty that the differences between *Sonnets* and narrative poems could have arisen by random sampling from a single population. A statistician might object that t-tests are valid only when normal distributions can confidently be assumed. This objection can be met by applying a non-parametric statistical test, where no such assumption need be made. The Mann–Whitney modification of Wilcoxon’s Sum of Ranks Test, though less sensitive than a t-test, reveals that *Sonnets* figures are statistically different from narrative poems figures for each of the same seven Claremont tests, and at similar levels of significance.<sup>19</sup> This kind of test relies on the rank order of the values rather than on the values themselves: thus scores on hyphenated compounds for all six *Sonnets* blocks are lower than all eight scores for *Venus* and *Lucrece* blocks. We can determine the probability that such a degree of separation (or a lesser degree of separation) in the ranking of the two samples would occur were they drawn by chance from a single population.

Moreover, even if we derive our 3,000-word Shakespeare poem block profiles from all fourteen poem blocks we find that *A Lover’s Complaint* fails only two of fourteen tests if profiles are set according to the same strict mathematical rules that determined those of Table 1. Again, if we wish to decide whether *A Lover’s Complaint* belongs within the Shakespearean population, we must regard the fourteen blocks as a sample and calculate the standard deviation by using the number of values minus one as the denominator. Table 2 shows the results.

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<sup>17</sup> Student’s t-test is described in all elementary introductions to statistics. It takes account of both the difference in the means of two samples and the spread of their scores, or “variance,” which is equal to the square of the standard deviation.

<sup>18</sup> Hyphenated compounds:  $t = 5.93$ ; Thisted–Efron slope:  $t = 3.60$ ; Thisted-Efron new words:  $t = 3.78$ ; grade level:  $t = 3.45$ ; feminine endings:  $t = 2.89$ ; enclitics:  $t = 2.65$ ; proclitics:  $t = 2.37$ ; all for 12 degrees of freedom. I have used the “VassarStats: Statistical Computation Web Site”: <http://faculty.vassar.edu/lowry/VassarStats.html>.

<sup>19</sup> Hyphenated compounds:  $p < 0.002$ ; Thisted–Efron slope:  $t = p < 0.01$ ; grade level  $p < 0.02$ ; Thisted–Efron new words:  $p < 0.002$ ; feminine endings:  $p < 0.005$ ; enclitics:  $p < 0.05$ ; proclitics  $p < 0.05$ . The probabilities are taken from a table of critical values for  $n_1, n_2$ , and the lowest of the four rank totals in either direction, in Russell Langley, *Practical Statistics* (New York: Dover, 1971).

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**TABLE 2**

Shakespeare profiles, derived from *Venus and Adonis*, *The Rape of Lucrece*, and the *Sonnets*, for Claremont Shakespeare Clinic's data on tests for poems; limits are calculated as two standard deviations from the mean.

<b>Test</b>	<b>Lower limit</b>	<b>Upper limit</b>
Grade level	10	14
Hyphenated compounds per 20,000 words	40	184
Percentage feminine endings	2	22
Percentage open lines	6	24
Enclitics per 1000 lines	18	90
Proclitics per 1000 lines	224	435
"With" as 2nd last word of sentence per 1000 sentences	0	30
("no" / "no" + "not") x 1000	157	561
Bundles of badges 5	58	583
Bundles of badges 7	472	1038
Bundles of badges 8	-700	-324
Thisted–Efron slope test	-0.25	0.09
Thisted–Efron new word test	-33	18
Modal score per block	131	1214

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*A Lover's Complaint* fails only two tests, with a score of 12 for enclitics and a score of 120 for ("no" / "no" + "not") x 1,000. This result is scarcely inferior to the results for four of the fourteen Shakespeare poem blocks that generated the profiles: *Venus and Adonis* Block 2 fails feminine endings with a score of 25; *Sonnets* Block 6 fails proclitics with a score of 476, *Venus and Adonis* Block 3 fails "with" as second to last word of a sentence with a score of 34; and *Sonnets* Block 1 fails bundle of badges 8 with a score of -300.

It is worth noting that with the new, objectively established profiles, *A Funeral Elegy* and the poems of Edward De Vere, seventeenth Earl of Oxford each fail seven of the fourteen tests, instead of Elliott and Valenza's six. *A Funeral Elegy* fails grade level, open lines, proclitics, ("no" / "no" + "not") x 1,000, bundles of badges 5, bundles of badges 8, and modal score. Oxford's poems fail grade level, hyphenated compounds, feminine endings, enclitics, proclitics, bundles of badges 8, and modal score. So the new profiles do an even better job of eliminating such patently non-Shakespearean poetry, but they cannot be said to eliminate *A Lover's Complaint*, whose authenticity is in dispute.

There is another important point to be made. One of the two tests that *A Lover's Complaint* fails—"no" divided by "no" plus "not," with the result multiplied by 1,000—is one of the two least satisfactory of the fourteen tests for poems and should probably be discarded. Even the Claremont profiles reject only seven of the 86 non-Shakespeare poem blocks, and the Shakespeare poem profiles determined by mathematical rules and recorded in Table 2 above (157–561) reject only five, or 5.8 per cent: *A Funeral Elegy* (89), Heywood's *Oenone* Block 1 (111), Heywood's *Troia* Block 3 (567), Queen Elizabeth's translations Block 2 (152), and Sackville's *Mirror* (667). Profiles for non-Shakespeare poem blocks, based on two standard deviations above and below the mean (123–596), reject four of the same blocks, the Queen Elizabeth block being the sole exception. They also reject *A Lover's Complaint* (at 120), though by the narrowest of margins. Clearly, the Shakespeare poem blocks simply constitute a sample of the wider poem population and are homogeneous with it. The Shakespeare mean of 359.4 is almost exactly the same as the non-Shakespeare mean of 359.9. The fact that Heywood's *Oenone* yields both a Shakespearean and a non-Shakespearean rejection for falling outside the *lower* limit of the profiles, whereas Heywood's *Troia* yields both a Shakespearean and a non-Shakespearean rejection for falling outside the *upper* limit of the profiles shows that content, not authorship, is the dominant influence on these ratios.

There is, furthermore, a certain arbitrariness about the piecemeal creation of tests of this kind. The ratio of "no" to "no" plus "not" is, of course, a function of the tallies for each individual word, and two more instances of "no" (5 instead of 3) would have lifted the ratio for *A Lover's Complaint* into the Shakespearean profile-range. The conversion of low frequencies into rates can make the differences between blocks seem much larger than in fact they are. *A Lover's Complaint* attains its score by having 3 instances of "no" and 22 of "not" ( $1000 \times 3 \div 25 = 120$ ). Obviously the number of instance of "no," which seems likely to be especially dependent on subject matter, is the major determinant of the ratio, while multiplication by 1,000 is arbitrary. A better way of dealing with such function words is to investigate *all* those that occur in Shakespeare's works above a certain level of frequency and compare blocks by principal component analysis.

The test involving "with" as the penultimate word in a sentence suffers from similar defects. *A Lover's Complaint* fails it according to the Claremont profiles, but not according to the objectively determined profiles. The actual range for Shakespeare poem blocks is 6–34. Elliott and Valenza set their profile at 4–36, although the actual range of values for the 82 *play* blocks is 0–36. A limit of two standard deviations

below the poem mean is (to the nearest whole number) -4, while a limit of two standard deviations above the poem mean is 34; the corresponding figures for plays are -1 and 31. Since a block cannot have fewer than no examples of “with” as the penultimate word in a sentence, objectively calculated profiles are 0–34 for poems and 0–31 for plays. The figures for all the Shakespeare poem blocks fall within this poem profile. All but two of the Shakespeare play blocks—*King Lear* Block 3 with a score of 32 and *Antony and Cleopatra* Block 1 with a score of 36—fall within the play profile. But by setting their “handfitted” profiles for both poems and plays at 4–36 Elliott and Valenza lose the two upper-limit rejections and obtain five lower-limit rejections for Shakespeare play blocks: *Richard III* Block 2 (scoring 0), *Richard II* Block 4 (scoring 1) and 7 (scoring 0), *Hamlet* Block 7 (scoring 0), and *Antony and Cleopatra* Block 3 (scoring 3).

By raising the upper limit of the two-standard deviations range and lowering the lower limit Elliott and Valenza have increased the number of Shakespeare’s false negatives. Their motive was evidently to create rejections for non-Shakespeare poem blocks, since 21 of the 82 have scores of 0, while a further two have scores of 3 and one has a score of 1.<sup>20</sup> No non-Shakespeare poem block has a score above the upper limit. If the Shakespeare poem profile (or, for that matter, play profile) is set objectively, not a single non-Shakespeare poem block is rejected.

Perhaps more important is that, in this case, too, the transformation of raw figures creates a somewhat misleading impression. *Sonnets* Block 1’s near-average Shakespeare poem score of 15 seems very much larger than a score of 0. But it seems much less so when one considers how it has been computed. *Sonnets* Block 1, consisting of Sonnets 1–27, has a total of 3,052 words, 132 sentences, and just two instances of “with” as the penultimate word of a sentence. In order to minimize differences among editors in punctuating texts, Elliott and Valenza have defined a sentence, for their purposes, as a string of words terminated by a full stop, colon, semi-colon, question mark, or exclamation mark. The score of 15 is arrived at by the following calculation:  $1,000 \times 2 \div 132 = 15.15$ , the score being recorded to the nearest whole number. So *Sonnets* Block 1, with 3,052 words, contains two instances of “with” as the penultimate word of a sentence and *A Lover’s Complaint*, with 2,579 words contains none. Since no fewer than six of the fourteen Shakespeare poem

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<sup>20</sup> The scores of 1 for *Richard II*, Block 4, and *Barnes* Block 2 may be mistakes, perhaps for 11. To attain a score of 1 these approximately 3,000-word blocks would have had to contain 1,000 sentences:  $1,000 \times 1 \div 1,000$ . (See the following paragraph in the text of the present article for an explanation of this computation.) So the average sentence would have consisted of three words.

blocks appear to have only a single instance, the absence of any instance from the *Complaint* is unremarkable.

Elliott and Valenza point out that their 86 3,000-word blocks of play-verse perform well on their tests for 3,000-word poem blocks. They claim that “Except for grade-level, where Shakespeare’s use of much shorter sentences for a mass audience is hardly surprising (everyone else who wrote poems and plays did it too), most of the play-block ranges turned out to be all but identical to the poem-block ranges.”<sup>21</sup> Certainly the mean grade level score for Shakespeare plays is more than twice that for Shakespeare poems, and only one of the 82 play scores is as high as the lowest of the poem scores, so there is next to no overlap. But there are also several other tests for which the set of poem scores and the set of play scores are most unlikely to have been drawn from a single population. The test involving “no” and “not” is a case in point. Results of a t-test reveal a difference between the 82 blocks for plays and the 14 blocks for poems at the  $p < 0.005$  level of significance. Difference between plays and poems also emerge for Thisted–Efron slope ( $p < 0.05$ ). For bundles of badges 7 the difference between poems and plays is highly significant, having less than a one in five thousand probability of occurring by chance ( $p < 0.0002$ ).<sup>22</sup> In this last test the Shakespeare poem profile (472–1038) would reject 35 out of 55 seventeenth-century Shakespeare play blocks, from *Hamlet* to *The Tempest*, while rejecting only one of the 27 blocks from earlier plays. Clearly there is a strong chronological influence on BoB7 scores, just as percentages of feminine endings and open lines in the plays increase over time.<sup>23</sup> What seems abundantly clear from these analyses is that the generic difference between Shakespeare’s poems and plays makes highly problematic any use of 3,000-word blocks of play verse either as supplementary means of determining “handfitted” profiles for poems or as “set-asides” from which to assess how well the Shakespearean profiles for 3,000-word poem blocks would discriminate between Shakespeare and non-Shakespeare poems not used to generate those profiles.

Elliott and Valenza and their Claremont helpers have been assiduous, resourceful, and innovative in their researches into questions surrounding the Shakespeare canon. They have remained open-minded, refining their methods in response to criticism. Their articles have been written with clarity and flair and in an unfailingly equable and

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<sup>21</sup> Elliott and Valenza, “Oxford by the Numbers,” p. 367.

<sup>22</sup> The probabilities in this paragraph are from the following t-test results, all for 94 degrees of freedom: (“no” / “no” + “not”) x 1,000:  $t = 3.07$ ; Thisted–Efron slope:  $t = 2.24$ ; bundles of badges 7:  $t = 3.9$ .

<sup>23</sup> BoB7 was duly listed by Merriam, “Untangling the derivatives,” p. 4, among seventeen of forty-eight Claremont Clinic tests affected by date of composition. For some of these, Elliott and Valenza provide separate profiles for earlier and later Shakespeare, but they do this for only one poems test, namely for open lines. *A Lover’s Complaint*’s score falls within both profiles, which overlap.

courteous tone, despite the provocations of anti-Stratfordians and other combatants. The arguments of the present paper are offered in no captious spirit. But it seems to me that Elliott and Valenza’s data do not support a verdict against Shakespeare’s authorship of *A Lover’s Complaint* and that Thomas Thorpe’s unequivocal ascription should stand.<sup>24</sup>

Appendix: Elliott and Valenza Shakespeare Poems Tests: Blocksize = 3,000 Words

Poem and Block	Grad Lev	HCW	Fem end	Open Ls	Enclitics	Proclitics	With	No	BoB5	BoB7	BoB8	T-E Slope	T-E New	Modal
Venus 1	10	153	15	7	42	270	6	233	211	826	-593	-0.12	-32	467
Venus 2	10	148	25	9	40	317	6	326	325	579	-536	-0.15	-26	281
Venus 3	12	118	14	11	47	317	34	417	244	542	-419	-0.13	-7	1149
Lucrece 1	11	133	9	17	34	278	11	536	556	941	-405	-0.11	-20	358
Lucrece 2	11	153	15	13	42	265	6	324	270	867	-580	-0.16	-8	535
Lucrece 3	12	152	13	18	31	301	19	351	538	714	-541	-0.21	-20	969
Lucrece 4	12	133	14	10	59	350	19	391	198	714	-609	-0.1	-2	994
Lucrece 5	11	114	13	21	65	338	17	500	262	529	-625	-0.08	-6	712
Sonnets 1	14	98	12	19	77	334	15	184	429	818	-300	0	-1	842
Sonnets 2	13	68	8	15	61	367	22	333	282	840	-560	-0.08	7	740
Sonnets 3	13	88	3	18	43	316	7	500	478	944	-510	0.01	9	543
Sonnets 4	12	50	8	15	48	321	7	333	288	611	-520	-0.14	6	601
Sonnets 5	12	56	12	19	87	360	7	313	285	818	-560	0.07	-3	331
Sonnets 6	12	104	7	17	81	476	12	290	116	826	-412	0.06	0	892
E-V's hand-fitted	10	31	7	9	27	265	4	167	116	136	-867	-0.22	-32	281
profiles max and min	14	153	25	57	89	476	36	536	556	944	-265	0.15	21	1149
A Lover's Complaint	14	109	11	20	12	267	0	120	335	500	-452	-0.22	-33	572

Note: The abbreviated headings for the fourteen tests are explained in the text. . E-V = Elliott and Valenza.

<sup>24</sup> The same conclusion is tentatively reached by Hugh Craig, in “George Chapman, John Davies of Hereford, William Shakespeare, and *A Lover’s Complaint*,” *Shakespeare Quarterly* 63 (2012): 147–74. Craig’s stylometric approach rules out both Chapman and Davies as plausible alternative candidates for the poem’s authorship.