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FROM THE EDITOR

The 2023 JFDE is now complete. The JFDE receives many papers covering a wide range of topics related to the field of forensic document examination. Some of these papers are more historical in an attempt to apply the principles of handwriting identification to older handwritten documents or musical scores. The JFDE publishes those papers when they are original, well researched, well reasoned, illustrated and are approved through a blind peer review process. Both papers in the 2023 issue of the JFDE meet these high standards.

The first authors for the paper, "Decipherment of Text on Foxed Documents by Hyperspectral Imaging Utilizing the Video Spectral Comparator 6000," are from the Departments of Forensic Science for their respective government agencies in India. The paper provides a solution for those attempting to decipher the text as a result of "foxing" that is a process of deterioration in older papers that creates spots and browning.

The second paper, "The Audley End Annotations: Applying Huber and Headrick's Element of Handwriting Discrimination to a 16th Century Unknown Document," by Roger Stritmatter is an extensive and well documented attempt to identify the author of specialized annotations in 16th century books in the Audley End House in Essex, UK.

Dr. Stritmatter, a Professor of Humanities at Coppin State University in Baltimore, Maryland, received his PhD in comparative literature from the University of Massachusetts Amherst. Dr. Stritmatter would like to see the principles of forensic document examination utilized in historical documents rather than from practitioners of other disciplines who he believes speculate about authorship in historical documents.

As with all papers published in the JFDE, the research, analysis, and conclusions are the responsibility of the author, not the JFDE.

Michael Pertsinakis, LL.B, Ph.D., MCSFS
Crete, Greece
Editor

THE AUDLEY END ANNOTATIONS:
APPLYING HUBER AND HEADRICK'S ELEMENTS OF HANDWRITING DISCRIMINATION TO A 16TH CENTURY UNKNOWN DOCUMENT

Roger Stritmatter[1]

Abstract: *This study investigates the writership of a series of 16th century annotations found in at least six books in the library of Audley End House in Essex, UK, which are of possibly historic significance on account of their alleged connections of plot and theme to several of Shakespeare's plays, especially Julius Caesar (c. 1599) and Antony and Cleopatra (c. 1601). Audley End is a storied mansion, rebuilt by Thomas Howard, 1st Earl of Suffolk, c. 1610 for the express purpose of entertaining King James on his annual progress of English Great Houses. Today operated by English Heritage, the site preserves an impressive library with at least 128 books predating 1604. In 2016, John Casson and William Rubinstein proposed that the annotator of a number of these volumes was Sir Henry Neville (1564-1616), an early owner of the Billingbear estate in Berkshire from which some of the oldest books now at Audley End were evidently transferred circa 1920-1924.*

If Neville was, in fact, the author of the annotations, would this belief hold up under scrutiny if the principles of forensic document examination were applied? If not, is there another contemporaneous writer whose control sample is a better fit? To make this determination, eight of the 21 "Distinguishing Elements of Handwriting" identified in Huber and Headrick classic text Handwriting Identification: Facts and Fundamentals (1999), were applied. These eight, as numbered by Harrelson and Huber (2018) include **Class of Allograph** *(6.2.1.2),* **Allograph Combinations** *(6.2.1.4.5),* **Design and Construction of Allographs** *(6.2.1.4),* **Diacritics** *(6.3.4),* **Numerals and Textual Symbols** *(7.2.1),* **Connections and Terminations** *(6.2.1.3),* **Consistency and Natural Variation** *(6.4.1), and* **Embellishments** *(6.3.5). An additional standard, defined as* **Whole Word or Letter Sequence Comparison***, supplies insight into at least two further discriminating elements,* **Connections** *(6.2.1.3), and* **Spacing** *(6.2.1.7), as well as affording a larger field of reference than do discriminating elements of single characters. Bold-face words are in the glossary.*

After applying these standards to the writing of Sir Henry Neville and finding that Neville's writing contains many unexplained differences from the Audley End Unknown hand, the article then considers and tests the alternative hypothesis that Edward de Vere, 17th Earl of Oxford (1550-1604), is the writer of the question document annotations. After a thorough investigation applying the same standards used to test the hypothesis of Neville's writership, the evidence instead supports the conclusion that de Vere is a more plausible writer of the Audley End annotations.

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Introduction

The individuality of handwriting is a topic in *King Lear*, a tragicomedy written over four hundred years ago. In Shakespeare's play, the gregarious, bespectacled sensualist, Gloucester, cannot distinguish between the actual handwriting of his good son Edgar, and the Machiavellian forgeries of his bad son, Edmund. The forger baits his confused father by distinguishing the handwriting from the letter's wicked contents, which appeal to the concept that a grown child must sometimes usurp control from a declining parent: "It is his hand, my lord; but I hope his heart is not in the contents" (1.2.67-68). Unable to detect either the handwritten forgery, or the verbal dissimulation of his evil son, the epicurean Gloucester is eventually punished by having his eyes put out by Lear's evil daughter Regan and her sociopathic husband Cornwall (3.7). Modern forensic handwriting science holds that Shakespeare's premise is correct; an individual's handwriting – at least under normal circumstances – is unique (Srihari et al. 2002; Harrison, Burkes and Seiger 2009), composed of a sequence of markings that possess an identifiable individuality.

As Albert S. Osborn observes, in his classic forensic study *Questioned Documents*, the uniqueness of handwriting is also a theme in Shakespeare's mature comedy, *Twelfth Night*. Maria has written fake love letters to Malvolio, imitating Olivia's handwriting and with her forged signature subscribed.[1] Malvolio is hoodwinked by the forgery: "By my life, this is my lady's hand. These be her very c's, Her u's, and her t's; and thus makes she her great P's" (2.5.86-88; Osborn 176). He gives the letters to Olivia for confirmation of her writership, but she returns them, telling the lovelorn Steward,

> Alas, Malvolio, this is not my writing,
> Though, I confess, much like the character
> But out of question 'tis Maria's hand.
> (5.1.345-347).

Osborn comments: "Malvolio makes the usual error of the layman and decides at once on 'general appearance'" (174-176).

Barring the possibility of successful simulation or disguise, and with the advantage of sufficient data, it should be possible to follow in Olivia's footsteps to draw a definite conclusion about any two handwriting samples, whether they are written in the 21st or the 16th century and whether – as in this case – one consists of correspondence written on full sheets of paper, and the other of annotations written in the margins of books. Producing a " series of fundamental agreements and identifying individualities which is requisite to the conclusion that two handwritings were authored by the same person" (Conway 1959, 65) may fortify the analyst from falling into Malvolio's trap by deciding on "general appearances."

Originally a Benedictine Abbey founded in the 12th century, Audley End is today a legendary "Great House" some fifty miles northeast of London, only one charming footpath distant from the friendly hamlet of Saffron Walden in Northwestern Essex. Long regarded as one of finest surviving Jacobean houses in England, by 1578 it was already grand enough to host Queen Elizabeth I with speeches and poems delivered in her honor as published the same year by Gabriel Harvey (1578). The greatly enlarged footprint of today's estate is Jacobean in origin, the house having been rebuilt and expanded by Thomas Howard, 1st Earl of Suffolk for the purpose of better entertaining James I c. 1610. Today the Estate comprises 2,600 acres of woodlands, farmland, open fields, and gardens which surround the great house itself, a mansion brimming with paintings, old books, early Americana and Native Americana, and marvels of all kinds, like a giant "cabinet of curiosities," filled over centuries with the objects it now holds in trust, including over a hundred Elizabethan era volumes (Photo 1).

In 2016 John Casson and William Rubinstein drew attention to the Audley End library by reproducing facsimiles of several intriguing annotation samples from three early books, identifying them as being in the handwriting of the diplomat and intellectual Sir Henry Neville, and using them as a major plank in their argument identifying Neville as the "real Shakespeare." The argument was seconded by Ken Feinstein in a series of blog entries (http://kenfeinstein.blogspot.com) but challenged by Stritmatter in a public lecture for the Shakespeare Authorship Trust (2021). The question of the writership of the annotations is consequential since several of them place unambiguous emphasis on turning points in
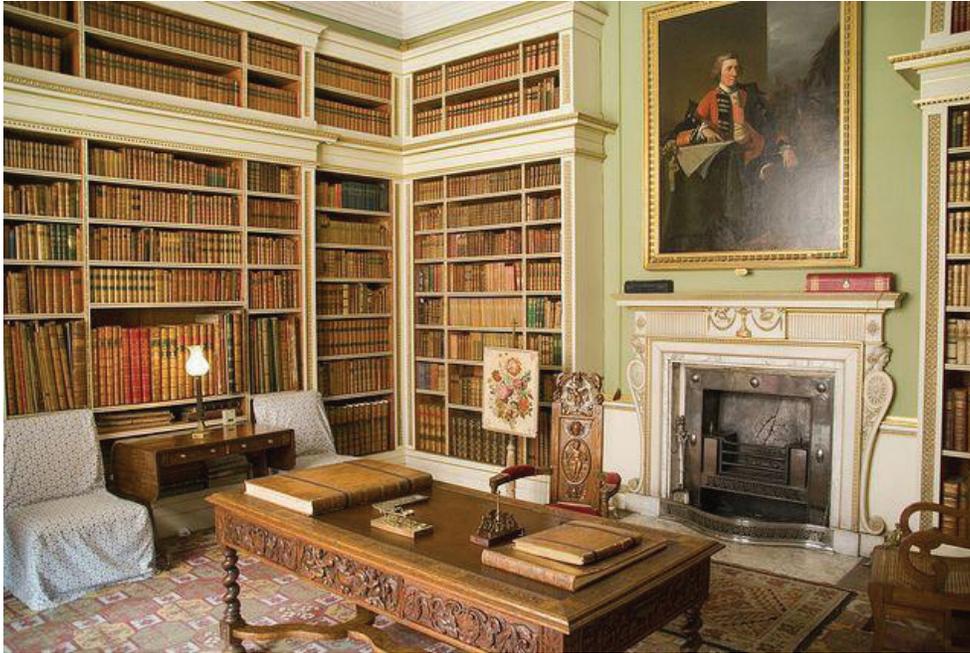
Photo 1. The Library at Audley End near Saffron Walden, Essex. Courtesy Pinterest.

the dramatic action of *Julius Caesar* and *Antony and Cleopatra* or furnish cues for character development in these or other plays. They read, in fact, almost like the playwright's rough notes.

Many of the earliest books now at Audley End apparently arrived there circa 1920, shortly before a fire destroyed the already-damaged the great house of Billingbear in Berkshire, where many had first evidently been assembled by Sir Henry Neville (1564-1615) – the diplomat, courtier and intellectual, who had been a supporter of the ill-starred Earl of Essex (1565-1601) and longtime friend and confidante of another of Essex's intellectual advisors, the Cambridge scholar, mathematician, and astronomer Sir Henry Savile.[2]

An ongoing close study of some 1500 annotations of several 16th century books now at the Audley End may provide the solution to a long standing enigma of literary studies. In furthering this dialogue, the present report represents a hopefully definitive contribution to an emerging interdisciplinary field of academic studies concerned with the Shakespeare Authorship Question (SAQ), a topic of debate that has lasted over four hundred years since first encountered in evidence contemporaneous with the first publications of the Shakespeare plays, which often fails to support the long-assumed and widely-believed story of the genesis of those plays (Wildenthal 2019; Stritmatter 2023b; Waugh and Stritmatter forthcoming). Today, drawing the attention of literary scholars, historians, philosophers, actors, directors, and dramatists, it has been called the "greatest detective story that ever was, the greatest story in literature" (Ogburn in Austin, 1989, 26:06-30). It has also been called a site of intellectual conflict which "represents a significant but under-examined example of a threat to academic freedom originating from within the academy, a topic in which peer pressure has sought to "delegitimize and foreclose legitimate lines of inquiry," resulting in an orthodox paradigm that has confined itself to an "intellectual prison because it refuses to broaden either its scope of inquiry or its community of scholars" (Dudley 2023 140). Given these fraught circumstances, the correct identification of the Audley End Unknown annotator may have significant implications for literary studies and early modern British history.[3]

I Testing Sir Henry Neville as Annotator

I.1 Description of Questioned Document

The **Questioned Document** (QD), referred to as the Audley End Unknown (AEU) hand, consists of
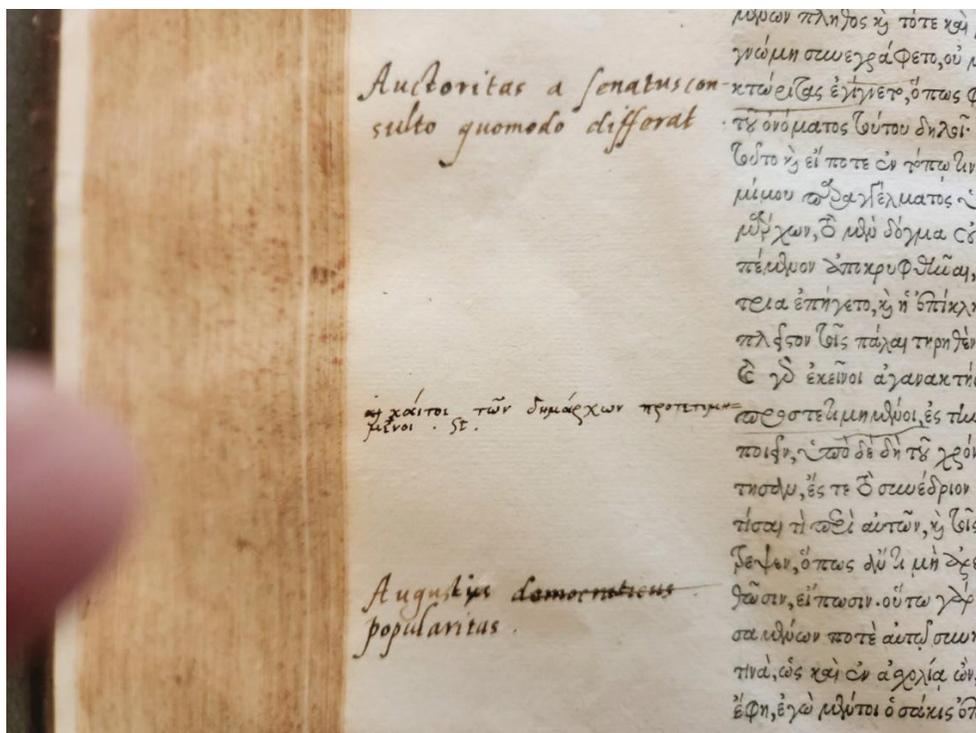
Figure 1. Different sizes of writing by the Audley End Unknown (AEU) Annotator using different pens in Cassius Dio: two large notes in Latin bracketing a Greek note written with a much smaller pen (Dio 55 387-389). This and all other images from Audley End books are courtesy the Trustees of the Audley End Estate.

more than 1,500 handwritten annotations inscribed in the margins or interlineally in seven books dated 1548-1580). These include varied types of notes, including elements of plot, theme, character, textual correction, cross reference, or more general reader responses. They range in length from single words or parts of words, often Latin glosses for difficult or abstruse Greek words, up to twenty-nine words. Inscribed in the margins of books written in Greek, Latin, and (in one case only) French, the notes are mostly in Latin or Greek (sometimes Latin interspersed with Greek), Italian (rarely), or English (rarely). The volumes include evidence from more than one reading by the same annotator, with annotations written with quill pens of different sizes, sharpness, and nib-width, resulting in annotations of different sizes (Figure 1).

Depending on how one counts, these might be considered six, seven, or even eight books. One is a single book in two volumes. Another consists of two books with separate title pages and publication histories that have been, much after the fact, bound into one.

Three of the most important books in question were first highlighted by Casson and Rubinstein in 2016, and after them, Ken Feinstein in his blog,[4] 1) *Roman Antiquities* by Dionysius of Halicarnassus (60 B.C.E-7 C.E.), an account of the foundation myths and earliest history of Rome in the 1546 edition of Robertus Stephanus, printer to Francis I;

2) *The Roman History of Cassius Dio* (165-235 C.E.) in the Stephanus edition of 1548, an account the transition from Republic to Empire (including accounts of the dramatic action featured in both *Julius Caesar* and *Antony and Cleopatra*).[5] This book is bound together with a copy of Appian's History of Rome (1551). The Audley Unknown annotator has left hundreds of annotations, only in the second book by Cassius Dio; the Appian volume, so far as presently determined, contains only annotations by Sir Henry Savile (see discussion below).

3) Tacitus' (58-120 C.E.) *Opera* as edited by Justus Lipsius and published in 1574, containing both *Histories* and *Annales*.
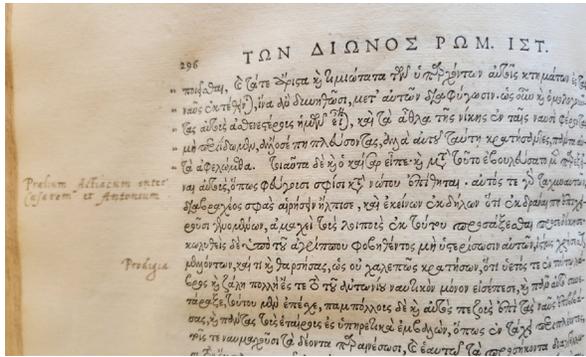
Figure 2. Annotations in Cassius Dio (p. 296): "The battle of Actium between Caesar and Antony," and "Prodigies."
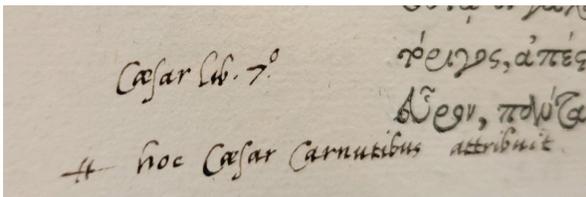

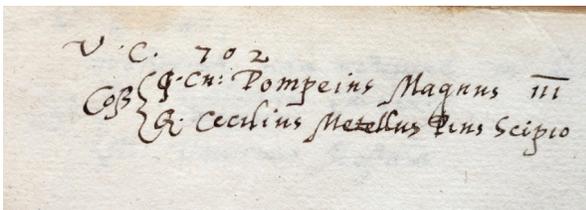Figure 3. Cross Reference to *Caesar's Gallic Wars*, Book 7. With a note: "Caesar attributes this to the Carnutes."

Figure 4. V.C. 702. Consuls elected: Gn. Pompeius Magnus and Q. Cecilius Metellus Pius Scipio (Dio 40) V.C. stands for Varronian Chronology.

Figure 5. Enclosing herself in her monument Cleopatra pretends death. Mark Antony, hearing of this, kills himself (Dio 51).
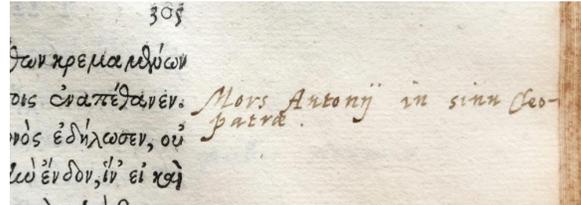
Figure 6. The death of Antony in the Breast of Cleopatra (Dio 51).
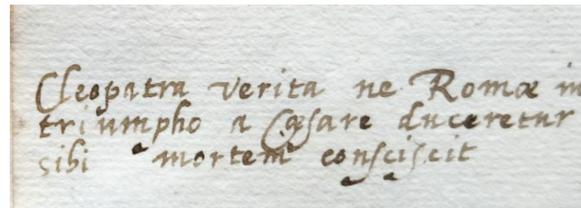
Figure 7. Cleopatra, fearing lest she be led in triumph at Rome, commits suicide (Dio 51).

These books vary in configuration. The Latin text of Tacitus is quarto-sized (~30x23 cm), while the Cassius Dio, Appian, and Dionysius volumes, all in Greek, are oversized Folio books (~48x30 cm), with extra-wide margins (~5 cm) designed to accommodate the learned reader's notes (Figure 2).

The themes and motifs featured in these annotations include topics as diverse as speeches of historical figures, wars and battles, marriages, deaths, legal and religious traditions of Rome, prophecies and dreams, political corruption, conflicts of monarchs and senators, suicides, the role of "the people" (*plebs*) in Roman history, threats to artists and prophets, international correspondence and messengers, the second triumvirate, encrypted messages, conspiracies, proscriptions, character, tyranny and kingship, shipwreck, ambition, assassination,, theatrical history and much more of interest.
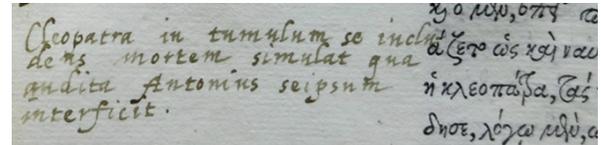
Frequent cross-references to other works clarify points of doubt in the texts; glosses supply Latin equivalents for difficult or abstruse Greek concepts; and numerous corrections indicate the annotator's sophisticated knowledge of both Greek and Latin and, frequently, his awareness of alternative versions of episodes or topics covered in the annotated text (Figure 3).

Throughout the Cassius Dio volume, the Audley End Unknown annotator has employed the V.C. (**Varronian Chronology**)[6] track events in time, noting the Roman consuls elected to serve each year (Figure 4).

Many notes concern the action, characterization, or themes of Shakespeare's *Julius Caesar* and *Antony and Cleopatra*. Especially impressive are a series of annotations that follow the action and motivations of the two eponymous characters in scene 5.2 of the latter play (Figures 5-6).

A note on Antony's death follows. He has botched his suicide and must be lifted in a basket up to Cleopatra's monument, where he finally expires –

Figure 8. Latin gloss to the Greek, dissimulabam ("I was dissimulating"). Dissimulation is a recurrent motif in Shakespeare's plays.

Figure 9. Greek correction: /ἀφ/ corrects /ἐφ/ (p. 212).

Figure 10. Greek letter γ (gamma) used to label a section of underlined text.

in both the play and the annotations – in her arms (Figure 6).

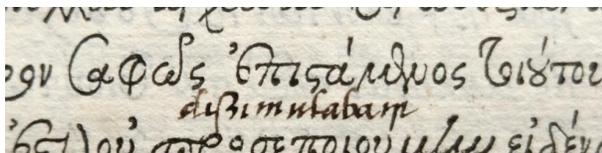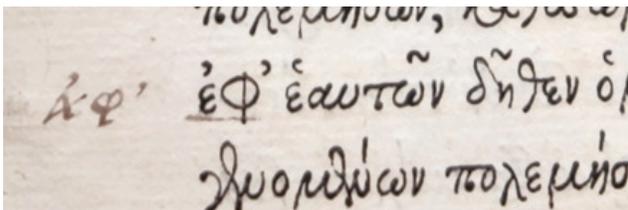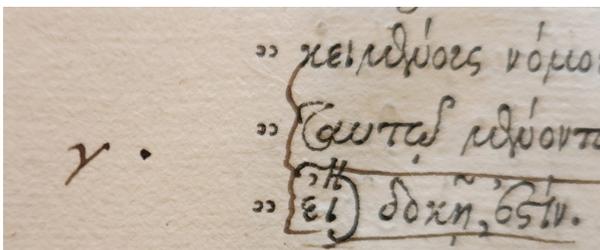The final note in this scene-by-scene trilogy details Cleopatra's motive for her own – this time actual, not theatrical – suicide (Figure 7).

Together these three annotations summarize the convoluted dramatic action of scenes 4.14-5.2 of *Antony and Cleopatra*. After fleeing defeat at the battle of Actium and enjoying a few last Alexandrian revels, Cleopatra pretends to commit suicide; thinking her already dead, Antony commits suicide. Only after he has died, and precisely for the motive stated in Figure 7, Cleopatra follows Antony with her own suicide. If this sounds like *Romeo and Juliet* redux, that underscores how dramatically satisfying this ironic romantic formula seems to have been to the author of the Shakespeare plays.[7]

The Greek in the Cassius Dio, Appian, and Dionysius volumes is printed in a complicated Renaissance Greek font including many unusual diphthongs not used in the ancient Greek alphabet and therefore challenging even to the average classical scholar. Fortunately all three texts are available in

modern Loeb interlinear translations, which have been used throughout this study (Cary). In addition to summarizing notes or recording relevant cross references, the Unknown Annotator often glosses the Greek with a Latin equivalent (Figure 8).

He corrects the Greek text (Figure 9).

The annotations also include various symbolic devices, one being an unidentified system of abbreviations that uses Greek letters to classify underlined text (Figure 10). The Greek letter abbreviations used in such notes include, in approximate declining order of frequency, /ω./, /γ./, /ω. γ./, /ς./, /γ. π./, and /σ. ω./ These appear in the Cassius Dio, but also Tacitus, Thucydides, Guiccardini, and Dionysius volumes (see Appendix B). Their meanings remain unidentified, but an apparently identical set is used by Sir Henry Savile in his Appian annotations, so they are expressions of a shared, not idiosyncratic, convention.

Another common symbol is a *fleur de lis* signifier, often – like the Greek coding – followed by a period, often at some distance from the figure (Figure 11).

The symbolic associations of these marks remain currently unidentified.

In two recent visits to Audley End (October 2022 and June 2023), my wife Shelly Maycock and I took extensive notes and shot hundreds of photographs of the annotations of several books (published between 1548 and 1578) at Audley End that contain annotations by the Audley End Unknown Annotator.[8] While they cannot be dated with certainty, the annotations were probably made between 1565 and 1590. Of the six books containing these annotations, by far the most important, both on account of the large number of annotations and their potential relevance to the Shakespearean plays, is Cassius Dio (1551), a book long recognized as a potential – possibly critical – source for Shakespeare's two Roman plays, *Antony and Cleopatra* and *Julius Caesar.*[9]

In their book, Casson and Rubinstein misidentify the **Questioned Document** as the "Dionysius section of Appian's [history of Rome]," but their confusion is understandable since the book is bound under the title of Appian's Works (Figure 12).

This error was inadvertently repeated in Stritmatter 2023a, which first reported on the annotations for members of the de Vere Society, that the annotations were in "Appian." There is, however,
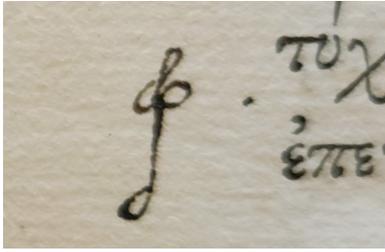
Figure 11. Fleur des lis with period used to mark text.

Figure 12. The Audley End Copy of *Appiani Opera* (1551) in a c. 18th binding, also contains the first edition of Cassius Dio's History of Rome (1548).
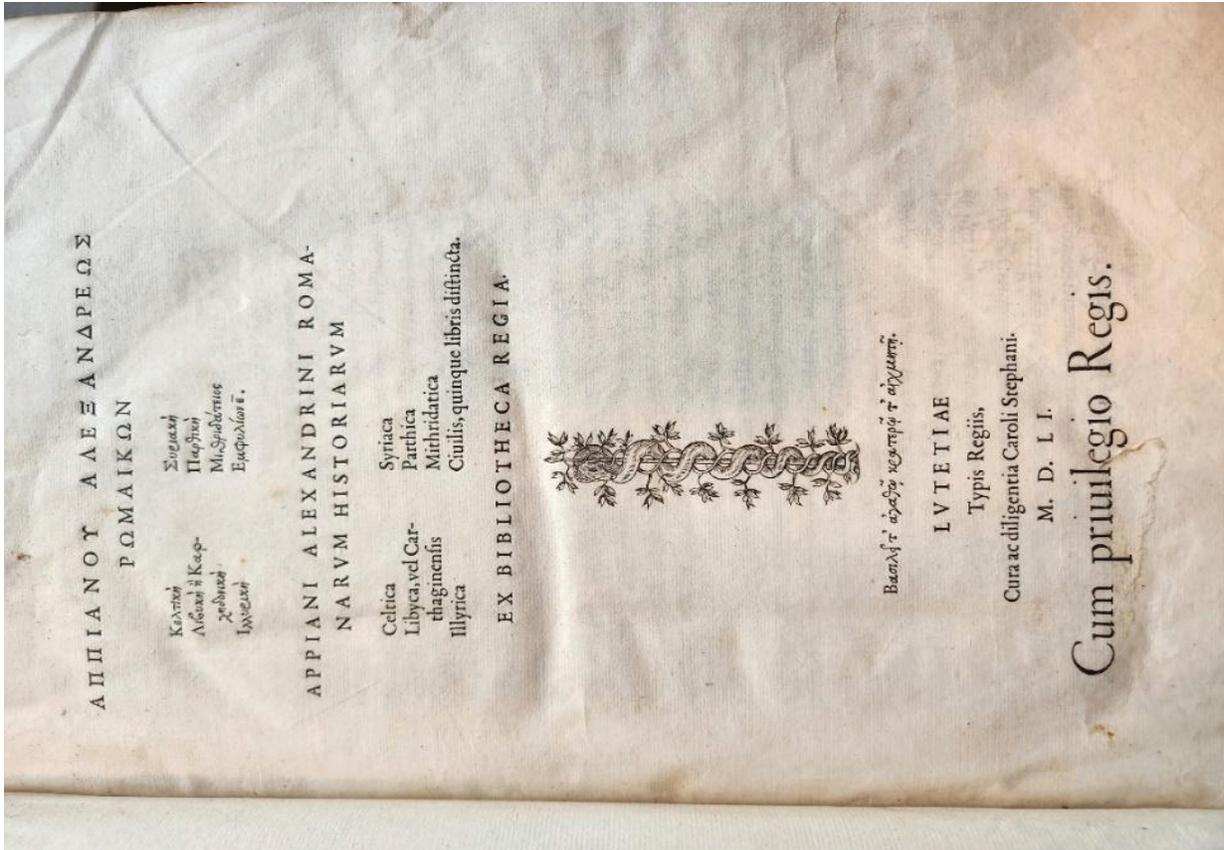
Figure 13. *Appian of Alexandria's History of Rome*. Lutetia: From the royal printer, with the care and diligence of Carolus Stephanus (M.D.L.I.) 1551. By Royal Permission. This volume evidently contains annotations only by Sir Henry Savile.

no such volume as the "Dionysius" section of Appian. Instead, this volume encloses in one binding two books by two different authors, one published in 1548 and the other 1551, but at some point in the history of the library (apparently in the 18th or 19th century) bound together under the title of only one of them. Thus it might be said that the Audley End annotated Cassius Dio *History of Rome* is a book "to double business bound" (*Ham.* 3.3.41). While it contains by far the largest number of Audley End Unknown annotations (e.g., Figures 1-10), it is also partially concealed underneath a circa 18th century spine, with

a label put on two books that have been rebound together into one under the label of only one of them: *Appiani Opera* ("The works of Appian").[10] A first title page confirms the spine label (Figure 13).

One must turn another 250 pages to discover the second book contained in the volume, The H*istory of Rome*, by Cassius Dio, bound up with the Appian (Figure 14).

Both Appian and Cassius Dio recount the history of Rome over the long durée, with Appian covering the period from the Gracchan tribunates (133 B.C.E.) to the 2nd Triumvirate (43 B.C.E.) and Dio from

Figure 14. The Roman History of Dio. In 23 Books, including Books 23, and 36 to 58 inclusive. *Lutetia: Ex Officina Rob. Stephani. Typographi Regii, typis Regiis. M.D. XLVIII (1548) From the Royal Library. By Royal Permission*. This volume only contains annotations by the Audley End Unknown annotator.
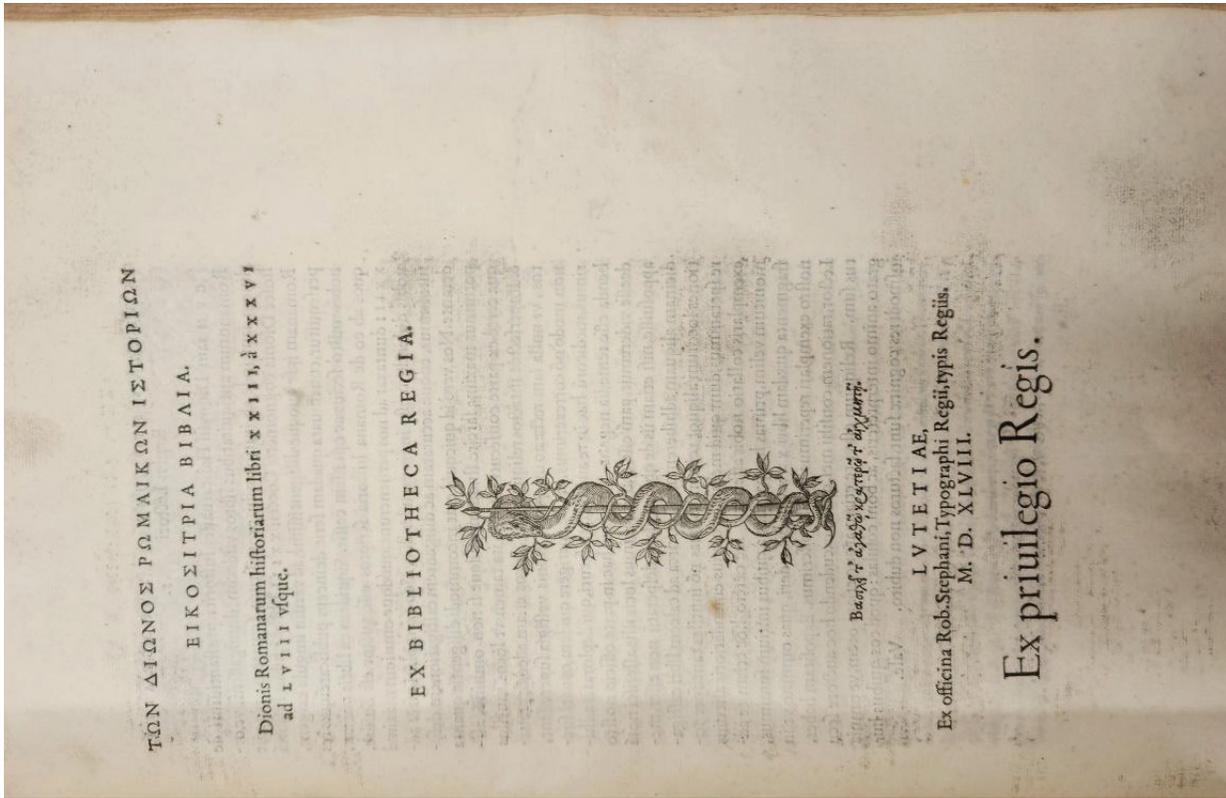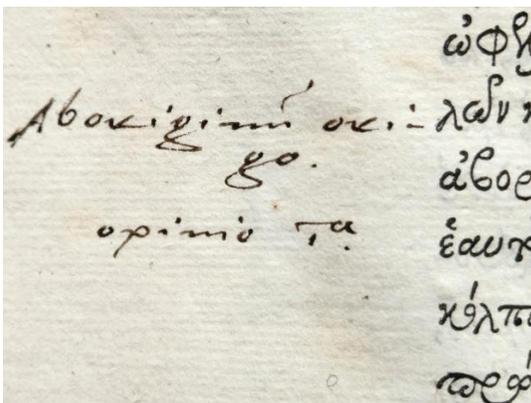

Figure 15. "Aboriginarum origo" (the origin of the aboriginals). "Opimio τα" (fertile things).

the time of Pompey's pirate wars (67 B.C.E.) to the death of Claudius (C.E. 54). Appian thus covers the events of Julius Caesar but not *Antony and Cleopatra* (c. 49-30 B.C.E.), and Dio the events of both plays. Although *Plutarch's Lives*, translated into French by Jaques Amyot in 1557 and from French into English by Sir Thomas North in 1579, has long been considered the most influential source for these two plays, these

books – especially the Appian in *Julius Caesar* – have long been regarded as secondary sources that Shakespeare either did or could have used for these plays (see, e.g., Gillespie 15-20). The Appian in this double-bound book contains copious annotations by Sir Henry Savile (1549-1622), a scholar and translator of Tacitus who advised the Earl of Essex and had been Neville's tutor at Merton College. Savile's handwriting is not difficult to distinguish from the Audley End Unknown annotator (Figure 15).

The circumstances of writing are distinct, but it is still possible at a glance to see the resemblance of this annotation to the Bodleian library's reproduction of one of Sayville's Ptolemy MSS (Fig. 16).

While Casson and Rubinstein deserve credit for recognizing the potential significance of the Audley End Unknown annotations, their study of the handwriting is undisciplined and ultimately superficial. While there is reason to believe that the books in question were once *in the possession* of Sir Henry Neville, this is not proof that he is the writer in question. Both logic and the fact that they also

Figure 16. Sir Henry Savile's Latin version of the *Almagest of Ptolemy*, vol. 1 (Courtesy Digital Bodleian via Wikimedia).

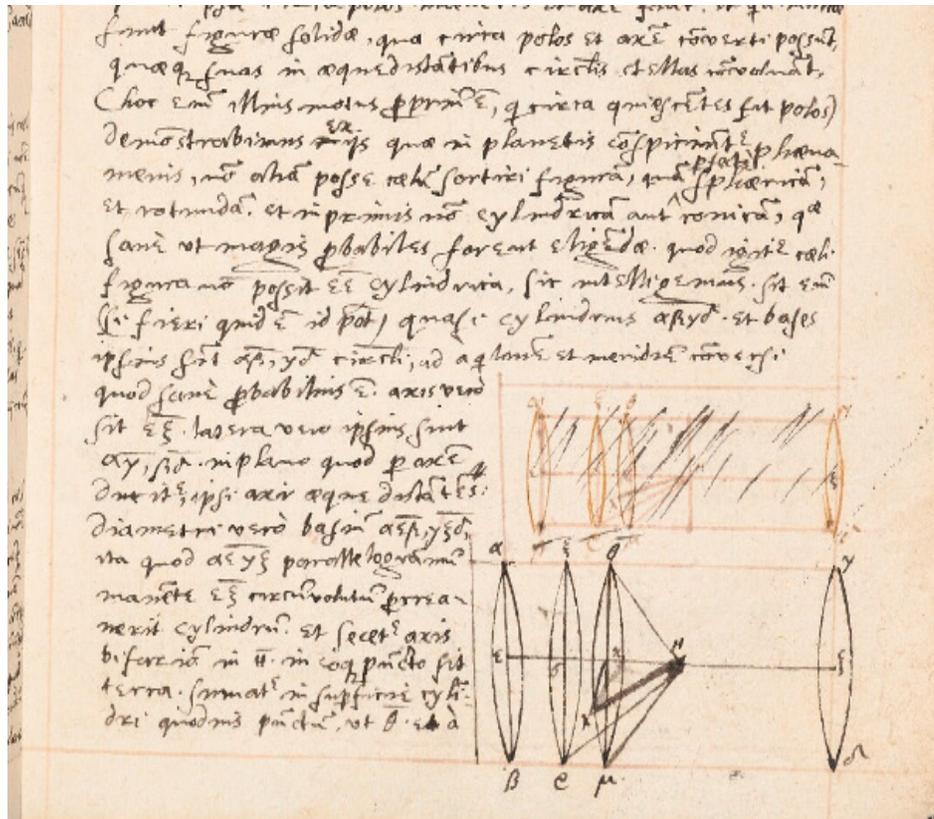contain many annotations in Savile's hand require us to consider the claim for Neville's writership through a rigorous comparative method. Book collectors frequently acquire books read and sometimes annotated by prior owners. Perhaps the annotations were made by a previous owner of the Audley End Unknown sample and subsequently found their way into Neville's possession. In at least some instances it can be shown that the Audley End Unknown hand predates the annotations of Neville's colleague Savile, and there is no available evidence to the contrary.[11]

Since Casson and Rubinstein's book a third hand – supplementing the more common annotations by Savile and the Audley End Unknown (who often previews Shakespearean themes and plot elements) – has come to light. In the fourteen books examined in our June 2023 visit to the library, this hand was found only in the Latin section of the Thucydides and, very briefly, in Guicciardini. Given the circumstances, one could not fail to notice the *a priori* likelihood that
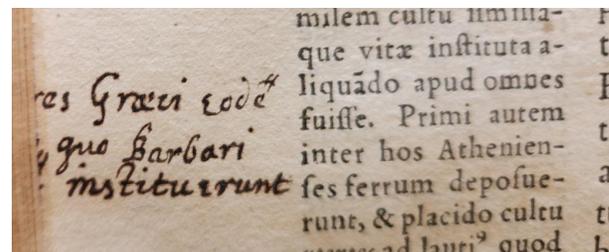
Figure 17. "[Ill.]res Græci eodem [ill.] quo barbari instituerunt." From the Latin section of Thucydides at Audley End. Compared to the Audley End Unknown hand, this is less regular. The forms are rounder and less angular, with more vigorous connections and fewer pen lifts than seen in the Audley End Unknown samples.

this hand belonged to the diplomat and intellectual Sir Henry Neville (1564-1615), the apparent Jacobean-era owner of many of the books in question, are said to have come from to Audley End following a c. 1924 fire at Neville's former Billingbear Estate in Berkshire. The former student and close associate of Sir Henry Savile, Neville was swept up in the arrests following the Feb. 1601 "uprising" of the 3rd Earl of Southampton (1573-1624). Evidently something of a prodigy, Neville graduated from Merton College, Oxford in 1577 at
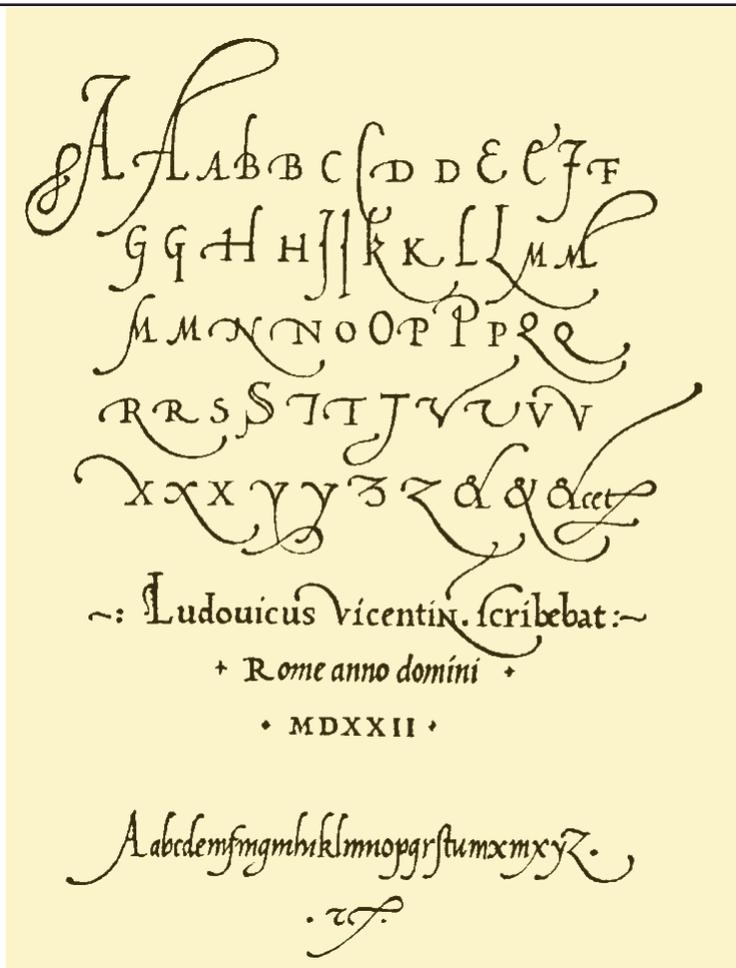
Figure 18. Arrighi copybook lower-case letters (1523).

the age of fifteen before going on to serve multiple jurisdictions as member of parliament, and becoming High Sheriff and eventually Deputy Lieutenant of Berkshire. In 1599 he was knighted for his crown services in France. Figure 17 reproduces an annotation from the Latin section of the Audley End copy of Thucydides' *Peloponnesian Wars* that is apparently in Neville's handwriting.

The characteristics of this hand are consistent with samples produced by Sir Henry Neville, as available from the Lincolnshire Public Records Office, The National Archives at Kew and in various documents on Ken Feinstein's Neville blog,[12] which have been examined in this research. As samples of this character only occur in one volume, in a section distinct from the Audley End Unknown hand, exemplars from this sample, along with others from already established Neville documents, are used in the following analysis. Gathering from multiple sources permits a better understanding of the range

of variation within a hand, and Neville is obviously a person of interest in any history of the books. For this reason his nomination as the questioned annotator by Casson and Rubinstein as well as Feinstein is not only understandable but indeed appropriate and perhaps even necessary. It is also, it will be shown, mistaken.

I.2 Class of Allograph (Huber and Headrick Standard 6.2.1.2) of the Audley End Unknown Hand

The primary guidebook for both phases of the inquiry is Huber and Headrick's "The Discrimination and Identification of Handwriting" (Chapter 6, 87-141). Both phases use as standards eight of the 21 elements discussed in this chapter: **Class of Allograph** (6.2.1.2), **Allograph Combinations** (8.2.1), **Design and Construction of Allographs** (6.2.1.4.5), **Diacritics** (6.3.4), **Numerals and Textual Symbols** (7.2.1), **Connections and Termination**s (6.2.1.3), **Consistency and Natural Variation** (6.4.1), and **Embellishments** (6.3.5).
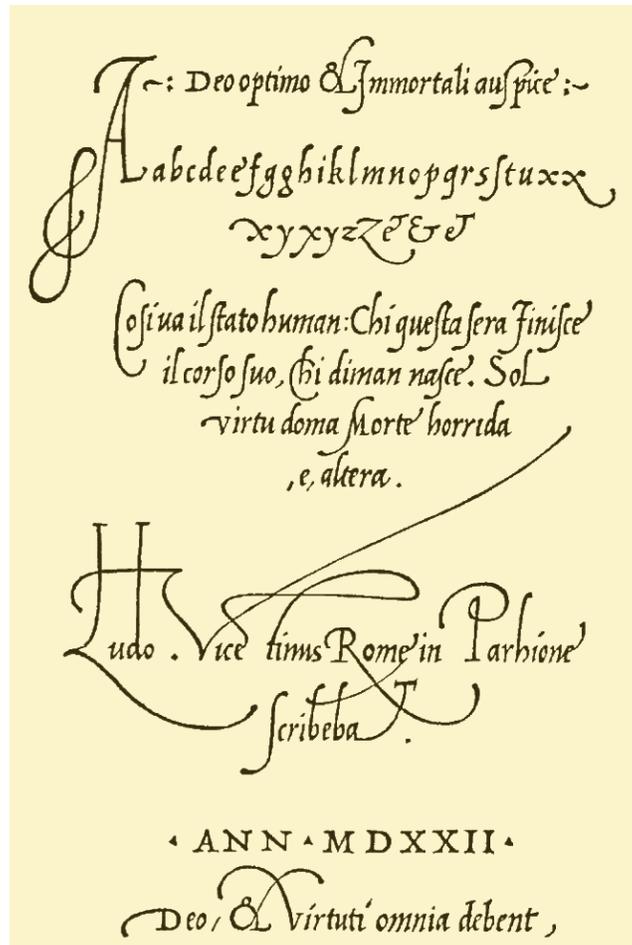
Figure 19. Arrighi Copybook Capital Letters (1523).

Several factors support the use of these **Standards** as requisite and even exemplary given the materials under consideration. Because of the differing contexts of the primary samples – one drawn from letters written on full sheets of paper and the other from marginal notes written in books of several sizes – factors of **Arrangement** (6.2.1.1-11), including **Slant or Slope** (6.2.1.6) and **Spacing** (6.2.1.7) are either not available or present challenges of interpretation (see section III.1)

The sequence of standards, proceeding from the most general to the most specific, is effective in delineating the relevant **Distinguishing Elements** involved in samples of the **Early Modern** Italic hand and facilitating comparison of the three samples used in the study. **Class of Allograph** and **Handwriting System** are macro-level screening tests; the remainder of the standards cover together all three of the major Types of Handwriting Elements; **Design and Construction of Allograph** is an Element of Style;

Diacritics, **Punctuation**, and **Pen Control** are Elements of Execution, and Consistency or Natural Variation is an "Attribute of All Writing Habits" (Huber and Headrick 136-139). Thus the chosen standards cover multiple dimensions of comparison that together can supply a larger sense of context for the results of each individual standard and thereby support a more definitive conclusion. To these eight are added two additional standards, namely **Whole Word** or **Letter Sequence** tests and, for the positive case only, **Pen Control** and **Shading** (6.3.9, and 6.3.91). Finally, in Part III, the slight but noticeable deviations from the norm in the data are assessed.

The Audley End Unknown annotations exhibit a fine italic Cambridge school hand of a writer trained in England during the period 1530-1575. The **Cambridge Italic** style had been introduced under the leadership of Roger Ascham (1513-1568) and Sir John Cheke (1514-1557), at first to the children of Henry VIII (1491-1547) and then to a widening group of
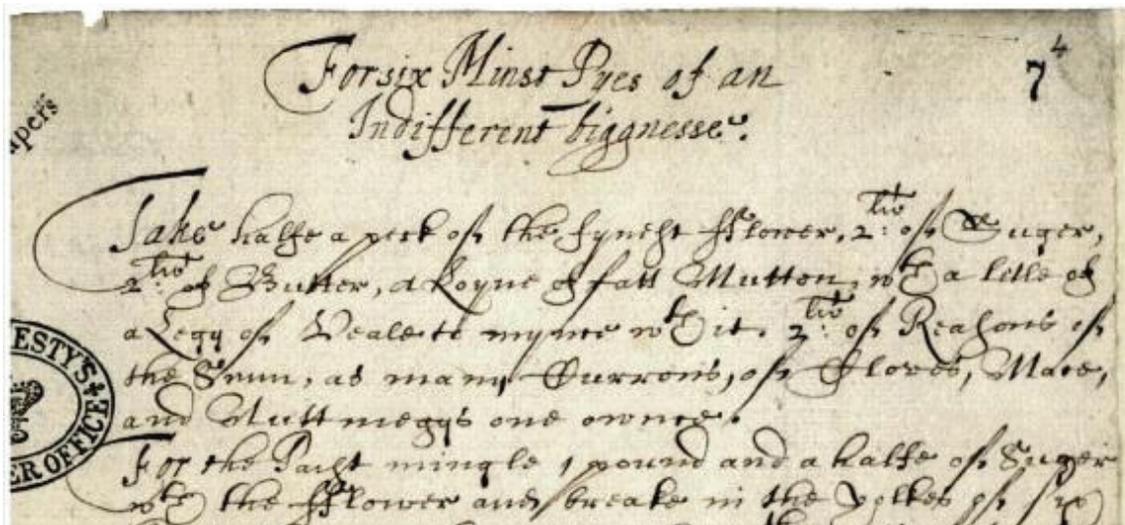
Figure 20. Comparison of Elizabethan Italic (above) and Secretary (below): A recipe 'For six Minst Pyes of an Indifferent biggnesse' (The National Archives, SP 14/189, folio 7). The recipe in secretary hand shows an admixture of italic forms.

nobles and highly educated persons in and around Cambridge University and London. The first English Italic copybook manual, Beauchesne and Baildon, was not published until 1570, but several earlier manuals from Italy and France, starting in 1514, had already illustrated the style, most influentially, Arrighi (Venice, 1523), Tagliente (Venice, 1530), and Palatino (Rome, 1540).[13] Among the copybook styles illustrated in these books, the one that most often approximates the forms seen in the Audley End Unknown writer is Arrighi (Figures 18-19).

The number of writers of the Italic hand in England c. 1570-1600 is not known, but comparison with the surviving materials published by Greg (1928) and Dawson and Skipson (1966) suggests that it was a small, privileged fraction of all those trained with a pen. The more common secretary hand was expedient, fast, and readily understandable for everyday use for daily business or correspondence; outside of University or Court, most writers preferred, or were only trained in, the secretary hand (Figure 20).

Italic, on the other hand, retained the cachêt of its aristocratic and exotic ethos. English writers who customarily employed the more familiar, faster secretary hand for the body of a document would sometimes sign the same document with an italic signature. Or, as above in Figure 20, italic might be used to put a title on a predominantly secretary document. Moreover, while the forms of the two types

are "in their nature and in the teaching of the writing masters, quite distinct, they very seldom remained so in practice, and nearly all literary hands of the period exhibit more or less of a compromise or cross between the two, though of course the general tendency is to form an English hand with an admixture of Italian to an Italian hand with survivals of English" (Greg et al. 1925 "Postscript"). In 16th handwriting there was no distinction between *Roman* and *Italic*; Italic was therefore also used for the same kind of special purposes it serves today, as an alternate font or typological code, used for stage directions, the names of persons, or foreign phrases, in both published texts and manuscript texts predominantly written in a secretary hand.[14]

In its pure form, moreover, the Cambridge Italic hand was a short-lived phenomenon, being replaced within decades by the hybrid forms characteristic of the 17th century English Round hand on its way to becoming modern cursive. And even while still in use, its distribution in documents written in England is quite limited, being largely confined, in the Harleian and Lansdowne Manuscripts of the British Library, to documents written in Latin, Italian, or French, and only very rarely in English.

The range of dispersion from norms established in copybooks varies from one historical period to another. In the middle ages, in manuscripts created by monks and other copyists individual writers strove
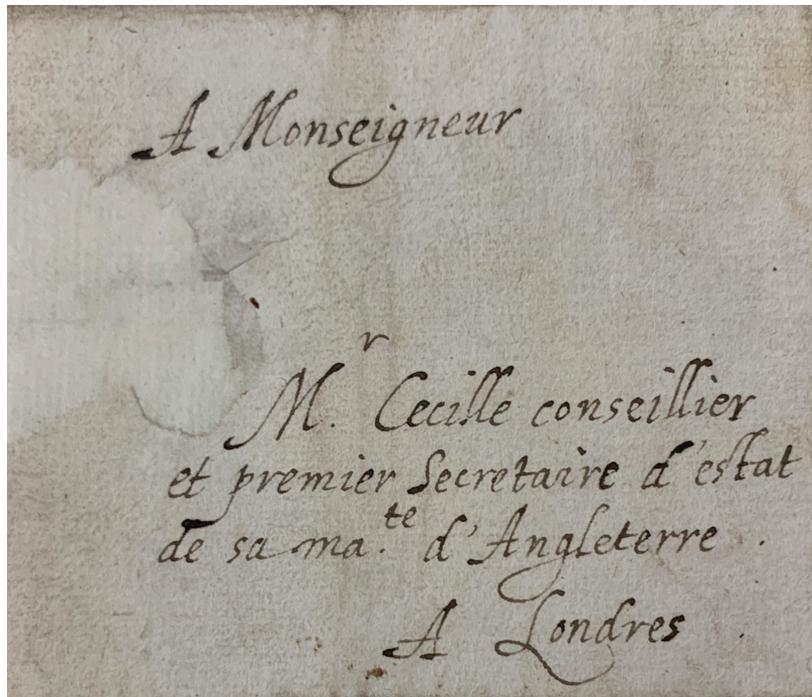
Figure 21. Sir Henry Neville's Italic Hand in its most Elegant and formal expression. Courtesy Ken Feinstein.

for fidelity to community standards. With multiple copyists working on parts of the same text, a primary aesthetic goal would be consistency. Distinguishing one hand from another in such traditions is the province of experts highly trained in all the relevant particulars. By the late 16th century, on the other hand, the variety of individualized styles of writing in circulation in England had expanded dramatically along with a burst of individual autonomy that came with the renaissance and the introduction of the Italic hand. The tendency towards dispersion of forms was undoubtedly encouraged by the availability of multiple copybooks, which included not only italic and secretary, but various specialized chancery and court hands. By the 1520s-1530s, from which the first samples of the English Italic hand survive, the individual hands exhibit wide variation and are usually not difficult to distinguish (Fairbank and Dickins).

Sir Henry Neville's handwriting exemplifies the intermixed forms of the average Elizabethan hand. While most of his surviving correspondence employs Secretary hand, his Secretary productions frequently intermix Italic forms, and Worsley 47, a private notebook, goes back and forth between the two hands. Under ideal circumstances, however, he could produce a clean italic hand that is, at least superficially, comparable to the Audley End Unknown Annotations (Figure 21).

For this first standard, then, the hypothesis of Neville as the Audley End Unknown annotator remains intact based on the evidence of Figure 21. While Neville consistently preferred the secretary hand, he was quite able to write a sophisticated italic script consistent in general features with the Cambridge School hands documented in Fairbank and Dickins. Beyond Class of allograph, eight further standards will furnish a more fine-grained test of the hypothesis of Neville's writership.

I.3 Allograph Combinations (6.2.1.4.5): Double-S as a Classifying Device

The forty-one Cambridge Italic hands supplied in Fairbank and Dickins (1525-1590) disclose structural variations in the formation of the **Bigram** /*ss*/.[15] These supply a useful example of the diagnostic potential of the study of allograph combinations, one which permits discrete classification of samples for analytic purposes. Reviewing the five main types (Figure 22) will prepare the reader to observe the variations in form on which the methodology depends.

Figure 22. Five Major Double-s Constructions in Renaissance Italic.

Audley End Unknown	Sir Henry Neville
Type 3 (uncommon): Long and Short.	Type 3 (rare): Long and Short.
Type 4 (usual): Ligatured Long and short.	Type 4 (N/A): Ligatured Long and short.
Type 5 (N/A): Looped long and short.	Type 5 (usual): Looped Long and short (Thucydides). Type 5 (usual): Looped Long and short (Worsley MS).
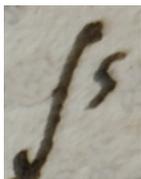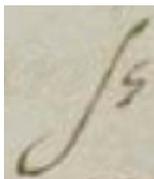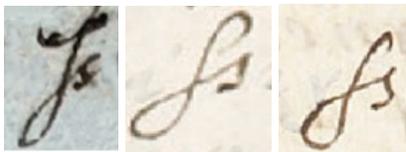
Figure 23. Comparison chart of Audley End Unknown and Sir Henry Neville. In the Audley End Unknown sample, the forms are, rarely, Type 3 (long and short) or, usually, Type 4 (ligatured long and short); In the Neville sample, they are, usually, Type 5 (cursive) and, Rarely, Type 3 (long and short).

Copy Book exemplars	Manuscript exemplars
4.a. 16th Century Copybook Exemplars from Atkins showing serifed /p/ construction. 47/58 of the examples in Atkins (p. 118) show an obvious serif on this letter. The illustrated examples are 1) Arrighi; 2) Tagliente; 3) Palatino; 4) Beauchesne; and 5) Wyss. All start the backbone of the letter with a serif.	24.b. Manuscript Exemplars from five writers c. 1565-1590 showing serifed /p/ construction, courtesy the British Library Lansdowne and Harley Papers: 1) Audley End Unknown; 2) Katherine Hartford; 3) Lawrence Nowell; 4) Lans. 42.60; 5) Lans. 42.75. All start the backbone of the letter with a serif.

Figure 24. copybook exemplars of small-p showing use of the serif compared with lineup of five other writers including Audley End Unknown. These exemplars illustrate the widespread use of a serif, but the design of the letters is in many other ways distinctive.

Fairbank and Dickins report that "Cheke and his followers made loops in writing the double-s" (15) as seen in type 1. But the other types also occur often in hands of the Cambridge writers, and most /*ss*/ bigrams in early modern English hands – including those in Fairbanks and Dickins – will fall into one of the five categories identified in Figure 22.[16] Some writers use only one, but many use more than one style in apparently predictable ratios. Types 1 (double looped) and 5 (looped long and 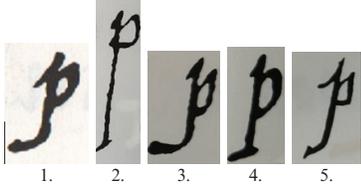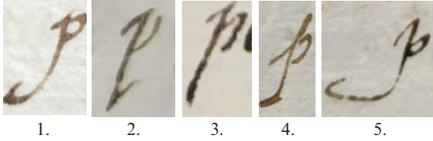short) are the most economical, being in essence "cursive" forms that, unlike the other three forms, require no pen lifts to complete the bigram. Comparing the exemplars of the bigram in the Audley End Unknown and Henry Neville samples discloses several visible discrepancies between the two data sets (Figure 23).

The Audley End Unknown Annotator always uses type 3 or 4 design, and Neville almost always uses Type 5. Both samples under rare circumstances use Type-3, but this similarity is mooted by the dramatic contrast in the exemplars of this type. Given this one comparison, the Casson-Rubinstein hypothesis seems already in serious doubt. With respect to this key diagnostic in the hands of the time, Neville's italic hand is distinctive from the Audley End Unknown. But it is a mistake to form a judgment of this kind based only on one element of evidence.

I.4 Design and Structure of Allographs (6.2.1.4): the Serifed Line.

Standard I.3 involved a single highly variable bigram of the Italic Cambridge hand. The forms seen in the two samples in this standard are of inconsistent construction, involving different hand motions and leaving distinctive patterns, but they only concern one element of one letter.

Standard I.4, by contrast, examines an element of the design or structure of multiple letters. Starting a descending line with a diagonal upward serif is a common device for writing the small letter *p* in the italic styles of the 16th c. Such serifs on this letter are seen in many copy book exemplars (24a) and in many samples of the Cambridge Italic from England (Figure 24b).

Together the samples from both copybook and MS illustrate how ubiquitous and varied the *seriphed p* was in 16th century English Italic hands, yet they show a wide range of individual variety of the exemplars even when the same basic patterns of construction are employed.

The serif appearing so prominently in the construction of the lower case /*p*/ in Figures 24a and 24b, can in some hands become a persistent structural element in such capital letters as /*B*/, /*D*/, /*P*/, /*R*/ and

	Audley End Annotator-showing structural serif	Sir Henry Neville showing flourished and more cursive forms
/P/	Type 1 (almost always): Serifed backbone, large lobe, relatively short stem ends in foot.	Type 1 (N/A): Serifed backbone, large lobe, relatively short stem ends in foot.
/P/	Type 2 (N/A): flourished or straight backbone.	Type 2 (often): flourished or straight backbone, narrower lobe, short stem ends in foot.
/P/	Type 3 (N/A): Cursive.	Type 3 (sometimes): Cursive.
/B/	Type 1 (almost always): Serifed staff. These show little variation in the size and shape of the two lobes.	Type 1 (Rare): Serifed staff. This is serifed but shows marked difference in size and shape of lobes. Courtesy Ken Feinstein.
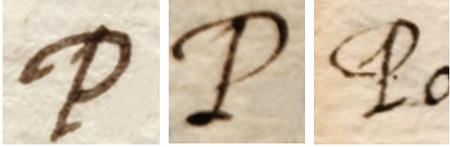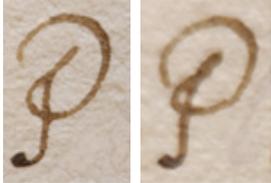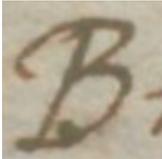
Figure 25a. Structural Serifs in Audley End Unknown P, B, D, R, & T compared to Sir Henry Neville P, B, D, R, & T without a structural serif.

/T(Figures 25a and 25b). Examining the evidence for this structural feature allows for a second significant discrimination between the two samples, since a defining characteristic of the Audley End Unknown writer is the use of such a seriphed staff in these letters while Neville uses this construction only rarely (Figures 25a and 25b).

While the Audley End Unknown capitol /P/ follows the example of /p/ by almost always starting with a serif, in the Neville sample the letter exists in two types, neither of which uses a serif. The serif is

	Audley End Annotator-showing structural serif	**Sir Henry Neville showing flourished and more cursive forms**
/B/	Type 2 (N/A): flourished staff.	Type 2 (common): flourished staff.
/R/	Type 1 (most common): serifed staff.	Type 1 (sometimes): serifed staff.
/R/	Type 2 (N/A): straight or flourished staff.	Type 2 (frequent): straight or flourished staff.
/R/	Type 3 (N/A): looped staff.	Type 3 (Frequent): looped staff
/T/	Type 1 (common): serifed staff.	Type 1 (N/A): serifed staff.
/T/	Type 2 (rare): no visible serif. In these the serif is generally present but concealed behind the downstroke of the staff.	Type 2 (common): No visible serif. Thucydides. Worsley MS. 47. In these the serif is genuinely absent; the line begins with a continuous downward motion.
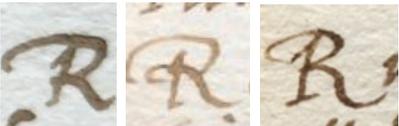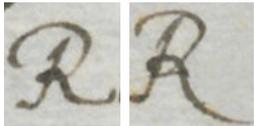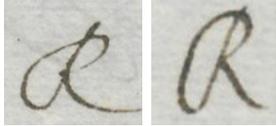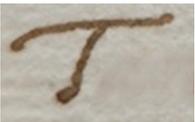
Figure 25b. Structural Serifs in Audley End Unknown P, B, D, R, & T compared to Sir Henry Neville P, B, D, R, & T without a structural serif.

Audley End Unknown	Sir Henry Neville
Type 1 (common): Fully waved tilde.	Type 1 (N/A): Fully waved tilde.
Type 2 (N/A):	Type 2 (common):
Type 3 (common): Defective.	Type 3 (N/A): Defective.
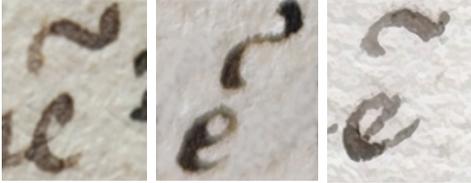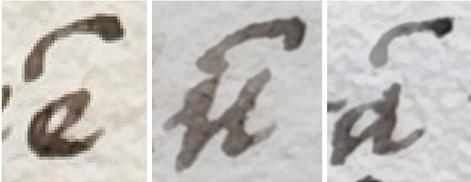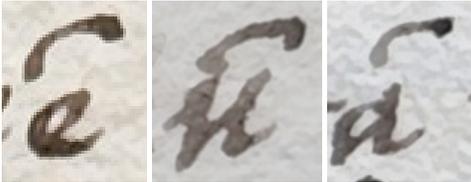
Figure 26.   Styles of Tilde in Audley End Unknown are distinct from those used by Sir Henry Neville.

also a usual characteristic of /*B*/ in the Audley End Unknown hand, while it appears only rarely in the Neville sample, which instead prefers a flourished descender. In the Audley End Unknown exemplars, the two lobes are of approximately the same size and shape, while those in both Types of the Neville exemplars illustrate a disparity in the size and shape of the lobes, with the lower one showing greater forward extension. The /R/ in the Neville sample terminates with strong forward momentum and extension in contrast to the more controlled termination of the Audley End Unknown. The topline of Neville's /T/ tends towards a bow shape while the Audley End Unknown tends towards a wave shape.

Neville routinely favors a Type 2 construction that uses a flourished or straight staff, not a serifed one, which the Audley End Unknown hand consistently prefers. In sum, these two samples show systematic variation in both the construction and the proportions of all these capital letters, indicating that they are not by the same writer.

I.5 Diacritics (6.3.4): The Medieval Latin Tilde

Diacritics, sometimes classed with punctuation as a diagnostic element of writing style, are "marks used with a letter or group of letters" to indicate a variation in sounding. One example is the medieval tilde (∼) a mark "used to make abbreviations in medieval Latin documents" (Wiki, "Tilde") most often to abbreviate a nasal (*m* or *n*) following a vowel, where the tilde was put over the vowel to indicate the missing letter (e.g., for *feminarũ* ("of the women")). The tilde is commonly found in early modern handwritten Latin texts but is used very rarely by writers of English during the same

period. The Audley End Unknown uses two styles of tildes and Sir Henry Neville in his Thucydides annotations an unambiguously distinct third kind of unknown origin (Figure 26).

While it might be supposed, given the idiosyncratic forms in the Neville sample, that these are two different signs, Neville's forms supply the same function as the more common waved tilde seen in the Audley End Unknown sample, also taking the place of a nasal following a vowel. Based on this fourth independent standard – the use and design of diacritics – leads to the conclusion that the shared writership of the two samples is at best improbable.

I.6 Numerals and Textual Symbols (7.2.1): Latin script ligature/diphthong æ/Æ

The Latin diphthong /æ.Æ/ falls into the category of Numerals and Textual Symbols that may provide discriminating elements for the classification of handwriting samples, either by their presence of or absence or their discriminating elements.

While obligatory in correct Renaissance Latin, the diphthong rarely occurs in English texts, yet can be seen in both control samples, where the constructions are quite distinct (Figures 27a and 27b).

In the Audley End Unknown hand, three of four exemplars (1,3, and 4), the first staff ends well below the baseline and in a hooked termination. In both Neville exemplars, one somewhat awkwardly inscribed on the concave surface of a book margin and the other comfortably written on a full sheet of paper, the first staff ends at the baseline in a clubbed termination. Thus, although both samples make use of the /æ.Æ/ diphthong, the construction and execution of the exemplars in the two samples is, again, inconsistent with a hypothesis of shared writership.

I.7 Connections and Terminations (6.2.1.3): St/Ct Ligature

In drawing a conclusion, a case should incorporate multiple strands of evidence of different types to either show how they all agree – or, to document where they present contrary or inconclusive evidence. According to Osborn as summarized by Huber and Headrick, "the degree of curvature and the slant of connecting strokes is one of the significant variations

in handwriting" (97). Within this large category is the more specific class of connecting strokes, known as "**ligatures**." The ligature is a decorative and practical way of joining two letters that otherwise pose problems for the writer. /st/, /ss/, and /ct/ ligatures are a common feature of the Cambridge Italic, but their size, shape, and orientation are as variable and potentially idiosyncratic as any other feature of a hand. In addition to the highly diagnostic /ss/ graph, the Audley End Unknown sample includes two types of /st/ ligatures, identified in Figure 27 (Standard I.3) as Types 1 and 2. Of the three types seen in Sir Henry Neville's sample, only Type 1 shows even a superficial resemblance to the Audley End Unknown types (Figure 28).

In the predominate Type 1 the ligature line traces horizontally forward before turning in a garland (counterclockwise) loop before retracing to cross the ligature and descend as the downstroke of the /t/. This Type exists in both samples, yet in their construction the exemplars diverge into two distinct groups that point towards their different origins. Neville's ligatures use greater curvature, inscribing a full horizontal S or half figure 8 shape, while those of the Audley End Unknown annotator are more linear, with less flex or curvature in them. The location and dynamic force of the crossbar on the /t/ also distinguishes the two samples. In the Audley End Unknown sample, the crossbar of the /t/ is consistently formed in a separate motion after the pen leaves the page; in Neville, the pen does not leave the page but loops around to form the crossbar, which cuts much lower on the staff and with stronger forward momentum. Type 2 is common in the Audley End Unknown hand but not seen in Neville; Type 3 is common in Neville but not seen in the Audley End Unknown hand. Thus, While the Type 1 ligatures of the Neville sample coincide in general terms with the Audley End Unknown, even in those instances the bigrams of the Neville sample are easily distinguishable from those of Audley End and the other, while the other types co-vary systematically between the two samples; Type 2 available in Neville and Types 3 and 4 not are not available in the Audley End Unknown hand. Again it must be concluded that Neville's writership of the document in question is unlikely if not impossible.

Audley End Unknown (Latin)	Sir Henry Neville
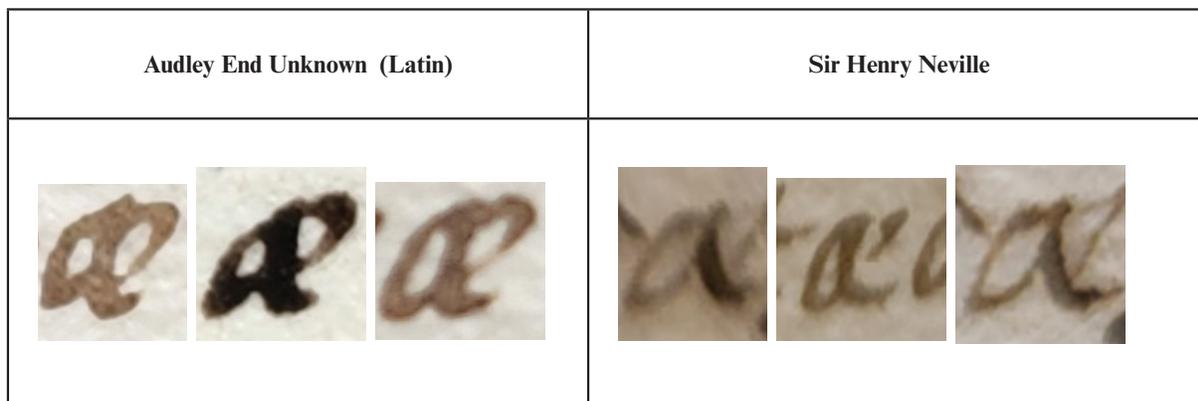
Figure 27a. æ The Audley End Unknown sample terminates the e-part with a smoothly proportioned arc, but while Neville uses a sharp point. (>). The pens are, of course, also different here, with Neville's being sharper and narrower and used with less precision. The Neville exemplars also show a pronounced thinning of the line and more pointed terminus in the e portion of the diphthong.

Audley End Unknown (Latin)	Sir Henry Neville
 1. 2. 3. 4.	Type 1 (N/A): Fully waved tilde. 1. Thucidydes. 2. Courtesy Ken Feinstein.
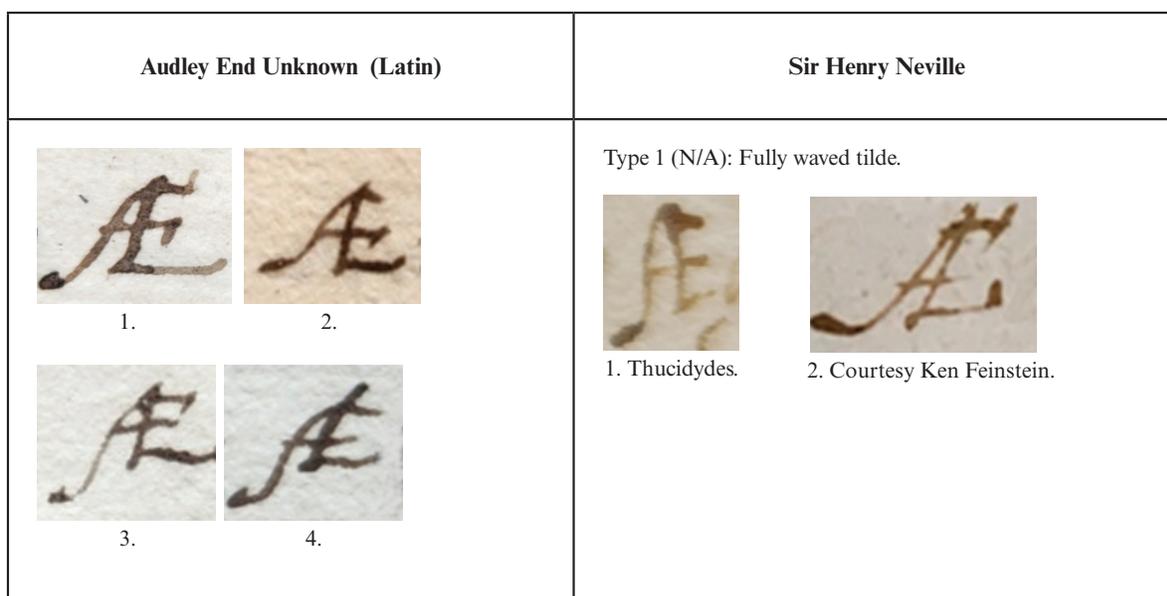
Figure 27b. æ/Æ Diphthong in Audley End Unknown and Sir Henry Neville.

I.8 Consistency and Natural Variation (6.4.1): 6 Ways to Write "P"

Natural variation – the variety and scope of shapes and elements in any sample by a single writer – is the primary factor that makes forensic handwriting analysis more "subjective" than some other aspects of forensic inquiry. Despite the existence of the copybook standard as an ideal, consistency of forms remains a (provisional) goal for the writer, and "mutability occurs and can be observed in any two or more examples of a person's writings, whether or not they are made on the same date, at the same time, in the same place" (Harralson and Miller 2018, 129). A fingerprint, whether perfect and complete or partial and inconclusive, exists in only one state, but handwriting displays variations that require analysis and interpretation. In fact, "natural variation is an attribute of every perceptual-motor task" (129). Thus, while everyone has only one set of fingerprints, every sample of handwriting by any writer varies to a greater or lesser degree from every other sample by the same writer, even when they involve the same sequences of letters or in those rare circumstances where whole words are available for comparison.

	Audley End Unknown (Two Types)	Sir Henry Neville (Three Types)
/St-ligature/	Type 1 (common): Narrow looping ligature.	Type 1 (common): Fluid looping ligature. Worsley MS 47
/St-ligature/	Type 2 (common): simple curved ligature.	Type 2 (N/A): simple curved ligature.
/St-ligature/	Type 3 (N/A): cursive.	Type 3 (common): cursive. Neville Worsley 47.
/St-ligature/	Type 4 (N/A): Ballooning ligature.	Type 4 (N/A): Ballooning ligature. (Neville Thucydides).
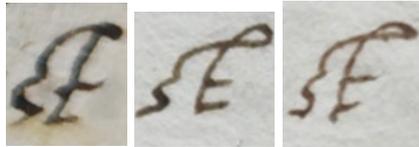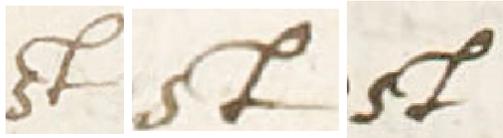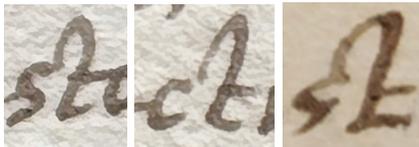
Figure 28. *St/ct* ligatures in Audley End Unknown and Sir Henry Neville.

Unlike fingerprints, handwriting can also be disguised or simulated ("forged"), and exceptionally versatile writers may be able to compose in multiple styles that can foil identification even by experts. While simulation is a significant consideration in the analysis of modern documents in a legal context, in studying historical materials the problem more commonly involves assessing the amount and types of variation within as well as between the compared samples, ideally filtered through a knowledge of the relevant population of contemporaneous writers. Variation is thus not only a fundamental factor in handwriting analysis but one that can be turned to useful advantage when carefully mapped for comparison between any two samples.

The small-letter /p/ is a highly variable allograph in Audley End Unknown sample. It can be distinguished into five main types according to their terminations. Neville's /p/ also uses four main types, but their features are evidently quite distinct from the five used by the Audley End Unknown Annotator (Figure 29).

Audley End Unknown showing five main types	Sir Henry Neville (Three Types)
Type 1 (common): Standard /p/ with curved or hooked termination.	Type 1 (common): Standard /p/ with truncated staff. Thucydides. (Worsley MS 47)
Type 2 (less common): Looped foot formed in one stroke.	Type 2 (rare): Looped foot formed in one stroke.
Type 3 (rare): Straight staff /p/ with foot added in a new stroke.	Type 3 (N/A): Straight staff /p/ with foot added in a new stroke.
Type 4 (common, e.g. narrower margins of Tacitus volume; otherwise rare): Blunt termination.	Type 4 (rare and only in the most formal productions): Blunt termination.
Type 5 (rare): looping staff with calligraphic thick-edge termination.	Type 5 (N/A): looping staff with calligraphic thick-edge termination.
Type 6 (N/A): Elongated with hooked termination.	Type 6 (rare, only in formal circumstance): Elongated with hooked termination.
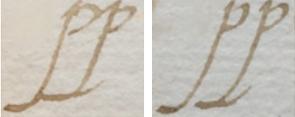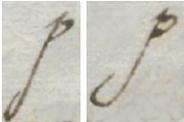
Figure 29. Six terminations of small letter /p/ in Audley End Unknown compared to those of Neville sample.

Audley End Unknown	Sir Henry Neville
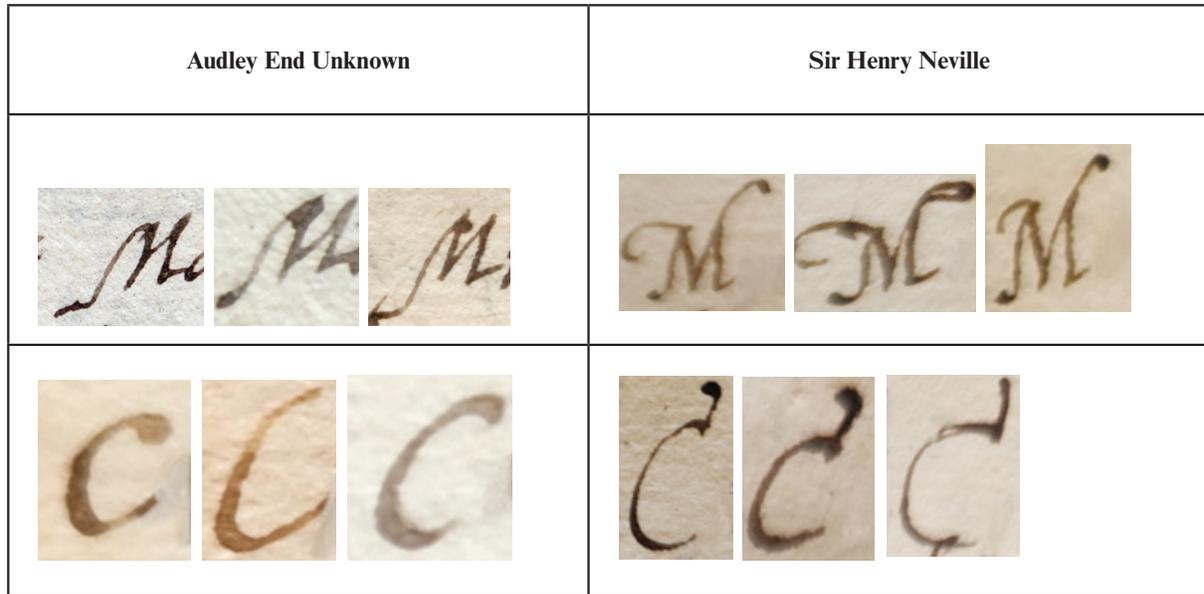
Figure 30. The Audley End Hand has minimal extraneous ornamentation compared to Sir Henry Neville.

Of the six types identified in the two samples, only Types 1, 2, and 4 are visible in both, and in Types 1 and 2 the exemplars, while being classifiable as sharing identifiable features, are inconsistent with a hypothesis of shared writership. The greater precision and balance of the Audley End Unknown sample is apparent in both Types 1 and 2. In the Neville exemplars the stem is foreshortened compared to the Audley End Unknown sample, and the jointure of the bowl to the stem exhibits wide gaps not seen in the Audley End Unknown hand. The result is that the Neville exemplars are consistently less precise and proportionally balanced than those of the Audley End Unknown sample. The construction of Type 2 in both samples is the same, yet the proportions of the exemplars are again quite distinctive, with the Neville sample showing the same foreshortened descenders. In fact, of the six types, only the exemplars of Type 4 are truly comparable as possibly produced by the same writer. However, even in this case, it has been observed that these types occur in discrepant contexts; Neville's Type 4 is seen in his most formal hand while in the Audley End Unknown annotator the Type is used primarily in such exigent circumstances as the narrow margins of the Tacitus annotations, from which all three exemplars have been drawn.

I.9 Embellishments (6.3.5) Capital *M*s and *C*s

Embellishment is the addition or extension of "strokes that are easily executed and are not essential to the recognition of the character or the word" (Huber and Headrick 115). Although the Audley End Unknown hand is precise and elegant, indeed at its most formal a a graceful and calligraphic hand, it is also characterized by minimal use of non-structural ornamentation, in sharp contrast to Sir Henry Neville, who often supplies inessential ornamentation (Figure 30).

Like the previous seven standards, examination of the two samples with respect to embellishment confirms a clear conclusion that the two hands are not the same.
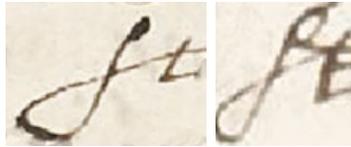
I.10 Whole Word Comparisons: Audley End Unknown vs. Sir Henry Neville

When available for comparison, letter sequence or whole word comparisons may furnish a better illustration of dynamic relationships between letters and allow control for variations resulting from the sequencing or placement of individual **Exemplars**.

Audley End Unknown	Sir Henry Neville
1.	1.
2.	2.
3.	3.
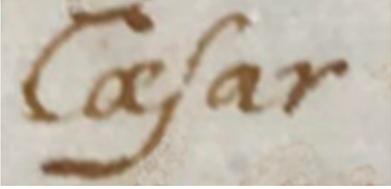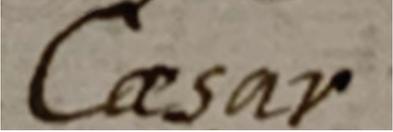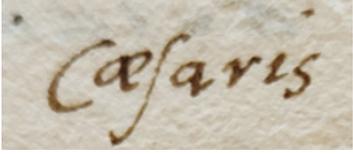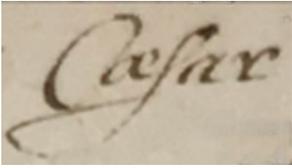
Figure 31. The rhythmic balance and consistency of the Audley End hand is conspicuous in the three exemplars. The Audley End annotator consistently uses a long /s/ in the medial position when writing /Caesar/, but Neville shows a wide range of variation in construction of this graph, including long (1), short (2), and cursive (3) forms. The Neville forms are also consistently more rounded and less angular.

More specifically, it allows for closer examination of such factors as spacing, connections, etc. In this instance it also furnishes an illustration of *in situ* natural variation in a controlled circumstance (Figures 31-32).

Comparing whole words from the two samples confirms our impression from the previous eight **Standards** that the two samples are unlikely to be by the same writer, since several obvious patterns distinguish the two samples. As James V.P. Conway explains, "While a series of fundamental agreements in identifying individualities is requisite to the conclusion that two writings were authored by the same person. . . a single fundamental difference in an identifying individuality between two writings precludes the conclusion that they were executed by the same person (1959, 67).

With an abundance of caution, the study has considered eight different **Discriminating Elements** and found Neville disqualified by all but one, the most general "screening" test. While the hypothesis of Sir Henry Neville's writership of these annotations is not unreasonable given their provenance,[17] no evidence could be found using these standards to demonstrate or support the hypothesis that Neville is the writer of the Audley End questioned documents. At a basic structural level, as well as in many distinct particulars, the two samples are inconsistent with a theory of shared writership. Instead, with a high degree of confidence, they are two different writers, each leaving traces of an intellectual engagement with the text through marginal notes. But if Sir Henry Neville is not the writer of the Audley End questioned annotations,

Audley End Unknown	Sir Henry Neville
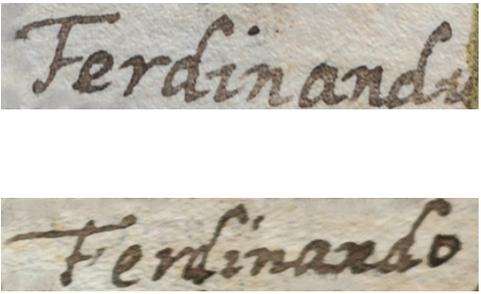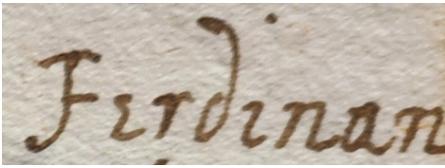
Figure 32. While the samples are roughly consistent in terms of Connections (6.2.1.3) and Spacing (6.2.1.7), the sure sense of rhythmic balance in the Audley End Unknown sample is further apparent in these two exemplars of the name of /Ferdinando/ Sforza. The letters of the Neville sample have less careful articulation and tend towards rounder, softer, longer curves with less angularity and balance in them. In Neville the /F/ follows a disti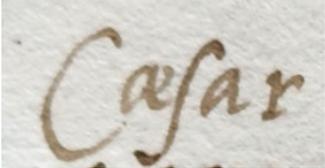nctive bow pattern also seen in /T/ (Fig. 24); the reverse-loop /d/ is rare in the Audley End Unknown sample; the Greek epsilon (ε) is only used by the Audley End annotator in Greek, never Latin, as an alternative graph to /e/, as Neville does here in FErdinan[d].

who is? Using the same sequence of diagnostic standards, let us consider a more verifiable hypothesis.

II. Testing an Alternative Hypothesis

II.1 Class of Allograph (6.2.1.2): Cambridge Italic Revisited

The Audley End Questioned Document is written in a fine italic hand in the Cambridge style. The annotations, written almost exclusively in Latin and Greek, vary in size and cut of writing implement, and range in formality from calligraphic precision to casual confidence. By the 1550s, under the leadership of Cambridge Ascham and Cheke, the Italic hand was being practiced by a widening circle of those with connections to the University or the Court. Figure 32 compares the Audley End annotator to a sample from Bartholomew Dodington (1536-1595), a leading practitioner of Cambridge Italic.

Given the cultural context from which these books emerge, the number of plausible annotators is small. Moreover, much can be deduced from the character and emphases of the annotations, and strong interest in theatrical history. The annotator

had access to the Cambridge Italic school style, has a superlative education with a strong interest in history, and exhibits an exceptional talent for ancient languages. The seven books in question are in four languages (Greek, Latin, Italian, and French), and the annotations themselves in four (Greek, Latin, Italian, and (in only one annotation in all six books), English. The annotator's knowledge of Greek extends to an ability to make frequent corrections in the printed text of Cassius Dio published by Charles Stephanus, printer to King Henri II. It seems probable, given this linguistic versatility, that the annotator was a high performing polyvocal language genius who may have also known languages beyond these basic five. Especially impressive in this evidence is his frequent recourse to a Greek word in the context of a Latin expression as in the Audley End Unknown cell of Figure 33 above. Perhaps he was also studying and taking notes with the assistance of a book wheel (Figure 34).

As already mentioned, the annotations include notes on many characters and actions of characters that are mirrored in the two plays. These include, from *Julius Caesar*, Julius Caesar, Marc Antony, Portia, Marcus Brutus, Decimus Junius Brutus, Cinna,

Audley End Unknown	**Bartholomew Doddington**
Parthorum armaturae. Fighting gear of the Parthians. Parthi ἱπποτοζόται. Parthian horse bowmen. Image courtesy the Trustees of Audley End.	Most dedicated to your Honour, Bartholomew Dodington. A salutation by Cambridge scholar Bartholomew Dodington (1536-1595), of the generation of Cambridge scholars who would have taught the Audley End annotator how to write.

Figure 33. Audley End Unknown Hand compared to Bartholomew Dodington, leading calligrapher of the Cambridge Italic School.

Cassius, Casca, Lucius, Trebonius, Cicero, Lepidus, and Cato, and from *Antony and Cleopatra*, Octavius Caesar, Cleopatra, Marc Antony, Octavia, Pompey, Dollabella, Menas, Marcus Crassus, Ventidius, Fulvia, Maecenas, Messala, Bochus, Tauros, Caesarion, Proculeius, and Scaurus.

Such erudite and intellectually adventurous annotators – interested enough to take character notes on all these personages, fluent in at least two ancient and three modern languages, and so fascinated by exotic details such as Parthian war strategy, annotating a detail that Shakespeare would later recall in his emblematic allusion to "Darting Parthia" [i.e., Parthian archery] mounted on "the ne'er yet beaten horse of Parthia" (*Antony and Cleopatra* 3.1.1, 33) – cannot have been commonplace, even in University circles.

II.2 Profile of Identified Writer: Intellectual Background of Edward de Vere

A likely candidate, judging by his record, is the accomplished polymath poet, playwright, and patron of players, Edward de Vere, 17th Earl of Oxford (1550-1604), who after the death of his father in 1562 was raised under the tutelage of the Master of the Court of Wards,[18] William Cecil (1520-1598). Cecil had strong and durable connections to Cambridge. Like John Cheke and Roger Ascham, two leading lights of Cambridge c. 1530-1560, he was a graduate of St. Johns College – and, by 1553 when Princess Elizabeth ascended to the throne, the shrewd young lawyer was already becoming one of the most powerful men in England. By marrying Cheke's sister Mary in 1541, Cecil became Cheke's brother-in-law, cementing a connection to Cambridge and to the pedagogical influences that had brought the italic hand to England.

Tutored from the age of four by the diplomat and classical scholar Sir Thomas Smith at Smith's house at Ankerwycke a leading reformer of Greek pronunciation, friend to Cecil, and Fellow of Queen's College, De Vere was from an early age exposed to

Figure 34. The Renaissance Book Wheel, a rotating bookcase that facilitates reading multiple books on a given topic (Agostino Ramelli 1588). Image courtesy Wikimedia.

the Cambridge doctrines of new learning and the italic hand (Hughes 2000). De Vere's handwriting has sometimes been confused with Smith's, even though the two hands are quite distinct on a close examination (Stritmatter 2021a). But although Smith tutored the young De Vere in many subjects it seems probable that he contracted out the handwriting instruction to a younger but more expert colleague, such as Dodington, born in 1536, who would have been a suitable age as well as skilled in the art during the period of the young De Vere's instruction in handwriting c. 1555. The earliest surviving production of his pen is a letter to Cecil, written in 1564 when he turned fourteen, in studiously perfect French using the most *au courant* diacritic system of the orthographic reformer and Cecil associate John Hart.[19]

The de Veres of Castle Hedingham had long been a literary family (Anderson 1993). The 12th Earl John de Vere (1408-1462) had owned the famous Ellesmere Chaucer, which includes a personalized dedication to him as the book's patron (see David, and Hanna and Edwards). In accounts kept by the Court of Wards the young de Vere in 1569-1570 purchased not only a Geneva Bible, but copies of Chaucer, *Plutarch's*

Lives in French, Plato, Cicero, "two Italian books" and "other books, paper and nibs" (Ward 33). Of these books, only the Bible – now owned by the Folger Shakespeare Library in Washington DC – is today documented (Stritmatter 2001). The Amyot copy of Plutarch is the text from which Sir Thomas North translated his English edition of 1579 and which, along with North, furnished so much material for Shakespeare's Mediterranean plays. De Vere's copy may have been the one sold at auction in 1948 as an association copy formerly owned by Henry Wriothesley, 3rd Earl of Southampton, the current whereabouts of which remain unknown.[20]

The young Earl's tutors, the best that could be had in England, praised his precocious intellect, eagerness for history, and facility with languages. At Cecil House on the Strand the young Earl was tutored in Anglo-Saxon by Sir Lawrence Nowell, the best scholar of the language in his generation. By 1563, when his student was 13, Nowell informed Cecil, "I clearly see that my work for the Earl of Oxford cannot be much longer required" (Ward 20). It is plausible to infer that by that age the student, studying with a tutor who possessed the only copy of the Beowulf MS (Golding 1937), had mastered Anglo-Saxon. In Latin his tutor was most likely his uncle Arthur Golding, the translator of Ovid's *Metamorphosis* as well as many works of religious piety including Calvin's edition of the psalms, which he dedicated to his nephew in 1566.[21]

In spring, 1564, de Vere graduated from St. John's College Cambridge. His guardian Cecil had also attended St. John's and was (among other distinctions) the brother-in-law of Sir John Cheke, the Regius Professor of Greek at Cambridge. His adoptive mother, Cecil's wife Mildred Cooke (1526-1589), was a formidable classical scholar who assembled an impressive inventory of the best scholarly editions of many works of classical literature.[22] Christopher Ockland described her as "most famous, most learned, most skilled in Greek and Latin literature, and other literature" (in Hager, 77). As Eddi Jolly has shown, many important literary sources were already available to de Vere in the extensive Hatfield library, assembled by Principal Secretary Cecil and his scholarly wife.[23]

Even the staunchly pragmatic Cecil, in a 1571 letter to the Earl of Rutland, concedes the remarkable intelligence of his ward: "And surely, my Lord, by

dealing with him I find that which I often heard of your Lordship, that there is much more in him of understanding than any stranger to him would think. And for my own part I find that whereof I take comfort in his wit and knowledge grown by good observation" (Ogburn 483-484). After marrying, apparently by shotgun, his guardian's fifteen-year-old daughter Anne that same year, the young noble husband seemed more earnest to see foreign countries than to settle into a comfortable domestic life with his near-sibling wife, with whom he had been raised since she was five and he twelve. Like the melancholy satirist Jaque in *As You Like It*, in 1576 he sold his own lands to "see other men's lands" of (4.1.23), funding a lavish continental tour that included Milan, Sienna, Florence, Padua, Naples, Genoa, and Palermo (Anderson 106), and – probably – Urbino, Mantua, Messina, and Mantua, the young de Vere visited the cities among those which would later set the scenes for Shakespeare's many Mediterranean plays. His letter to Cecil from Siena is dated January 3, two days before 12th Night, 1576. Alessandro Piccolomini's comedy *Gl'Ingnnati* ("The Deceived") – the play from which the plot of Shakespeare's *Twelfth Night* is drawn – was performed annually in the city on 12th Night (Anderson 102-103).

In Strasbourg the young de Vere met the internationally acclaimed Protestant scholar and humanist educator Johanne Sturmius, who translated Hermogenes of Tarsus' Περὶ ἰδεῶν (*On Rhetorical Style*) and Περὶ Στασεις (*On Cases*) books identified by Sky Gilbert as Shakespeare's key sources of rhetorical theory and **praxis**. Shakespeare and Hermogenes agree that "the content is the form" (Gilbert 73), and Hermogenes mapped out seven categories of style (*i.e.*, clarity, grandeur, beauty, rapidity, character, sincerity, and force) into a system that must have seemed custom-made for a young dramatist. Years later Sturmius remembered De Vere's visit and wrote requesting Queen Elizabeth to send him another smart Englishman like Sidney or De Vere (Ward 250). Thomas Twyne in 1573 echoed Golding's emphasis on the Earl's love of history in the dedication to his geographical study, *Breviary of Britain*, remembering a patron accustomed to "bestowing such regard as you are accustomed to do on books of geography, histories, and other good learning, wherein I am privy Your Honor taketh singular delight" (Chiljan 25).

Another practice in which de Vere - sometimes notoriously - took "singular delight" was theatre. He patronized multiple theatrical troops, including hiring the playwright-manager John Lyly during the 1580s to produce plays at the elite private theatre in the Blackfriars District (Ward 178-205)). His public reputation as the author of comedies and as hilarious comedic wit apparently brought him and his players in frequent conflict with censoring authorities. Mark him well, wrote the satirist Thomas Nashe, "he is a little man, but hath one of the best wits in England" (McKerrow I, 300; Ward 191-196). But this too was a family tradition, as demonstrated by his grandfather's patronage of the Protestant playwright and inventor of the English history play, John Bale (1495-1563) (Anderson, 13-14).

In 1578, when Gabriel Harvey toasted De Vere on the occasion of Elizabeth I's visit to Audley End, he recalls his 1572 Latin preface to Castiglione's Courtier as being "more polished even than the writings of Castiglione himself" and declares it for a "witness [to] how greatly thou dost excel in letters."[24] Harvey had seen "many Latin verses of thine, yea, even more English verses," and he concludes by lauding De Vere as a renaissance Homer: "thou hast drunk deep draughts not only of the Muses of France and Italy,/ but hast learned the manners of many men, and the arts of foreign countries" (Ward 157).[25]

Given the circumstances surrounding the survival of these books, it should be emphasized that de Vere and Sir Henry Neville had common interests and traveled in similar court circles. Neville was among those imprisoned – along with the Earls of Essex and Southampton – for his part in the 1601 Essex "uprising." Later Southampton and Henry de Vere, the 18th Earl of Oxford (1593-1625) were close companions among the "patriot Earls" who opposed the Spanish marriage in 1623 (See Stritmatter et al. 2023c). From these and other indications it would not be surprising if some of the 17th Earl's books had found their way into Neville's possession, either while he and Southampton were in the Tower c. 1601-1603, or after de Vere's death in 1604.

Part I above identified abundant evidence for rejecting the null hypothesis of Sir Henry Neville as the Audley End Annotator. The above paragraphs have now established a *prima facie* case for a probable
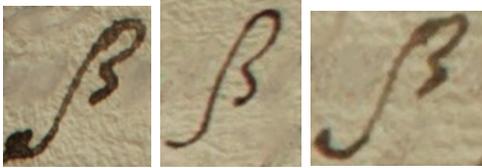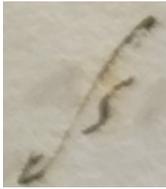
Audley End Unknown	De Vere
Type 4 (usual): Ligatured Long and short.	Type 4 (common): Ligatured long and short.
Type 3 (rare): long and short.	Type 3 (rare): long and short.

Figure 35. Types of double-s in Audley End annotator and De Vere. Note the considerably thicker nib and consequently greater variation in line width of the Audley End unknown annotations as well as more upright posture and thicker lines of the Audley End Unknown.

alternative hypothesis. De Vere had the means, motive, and opportunity to have been the Audley End Annotator. There is, however, a potential evidentiary impasse on account of the kinds of evidence used in comparison. While the discrepancies between the Neville and Audley End Unknown samples are are sufficiently large and detailed enough to disprove the hypothesis of Neville's writership it also deserves emphasis that while a large number of documents are available for analysis on all three sides of the comparison they are often not the same kinds of evidence. Not only are the Audley End samples written in the margins of books on paper created for printing, instead of on a full sheet of paper manufactured for writing on, but they are also almost all in Latin and Greek. By contrast, almost all De Vere's known sample is in English and written on full pieces of paper.[26]

This fundamental difference in the character of the two data sets unfortunately removes from consideration most comparisons in spelling (see Rendall 23); it also confounds many **Allograph Combinations (6.2.4.1.5)** and wholly eliminates some letters from direct comparison; In Latin /E/, /K.k/ and /W.w/ are not available for comparison; finally, the main sequences of letters within words often vary between the two languages. In the investigator's experience, all these factors complicate the ability to accurately compare any two samples. Considering these complications, the positive evidence supporting De Vere's writership of the annotations, developed through the same Standards as applied to Neville, is remarkable.

II.3 Handwriting System (8.2.1): Double *S* in De Vere's Hand

Referring to Figures 22 and 23 in section I.3 above, recall that Neville's Handwriting System employed a double-*s* formed using a cursive loop (Type 5), contrary to the Audley End Unknown sample, which instead uses Types 3 (long-short) and 4 (long short with a serif). In a striking contrast, De Vere uses the same two types of /ss/ ligature, in similar fractions, as the Audley End Annotator (Figure 35).

Both samples construct the bigram in an identical fashion, with a long *s* followed by a short *s* which is usually but not always, joined to it by a ligature. The joint between the long *s* and ligature is visible in exemplars from both samples, and the spacing of the two letters vis-à-vis surrounding vowels is consistent
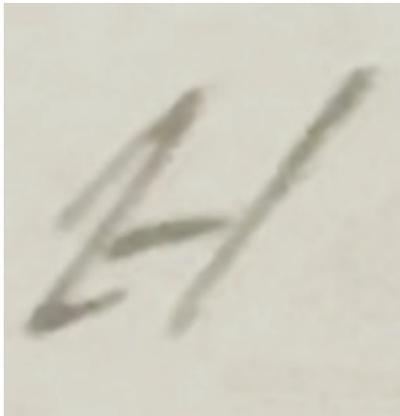
Figure 36. De Vere Capital H showing serifed construction of first staff. This structure is commonly if not invariably replicated in many capital letters (Figure 35) and is seen in reduced form in the construction of /*ʃ*/.

with the hypothesis of shared writership. The Audley End exemplars are, however, written with a thicker pen and are more upright in their orientation. (see discussion below in III.1)

II.4 Design and Structure of Allographs (6.2.1.4): the Serifed Line in De Vere's Hand

Standard I.4 demonstates that Sir Henry Neville rarely uses the annotator's habitual practice of using a serifed line to form the backbone of capital letters /P/, /B/, /R/, and /T/ , but instead commonly prefers a straight or flourished descender. In the de Vere sample, by contrast, the serifed line, often concluding with a counter-balancing reversed serif on the bottom, is a structural device (Figure 36):

This use of the serifed descender is visible, to a greater or lesser extent, in multiple capital letters, including /P/, /B/, /D/, /T/, and /R/ in both the Audley End and de Vere samples. Executing this basic form may have been an early lesson in the student's handwriting instruction; in any case, in contrast to the application of the standard to the Neville sample, here the visible exemplars of the two samples blend (Figure 37) together with only superficial distinctions.

While the unserifed form is rare or unusual in the letters /P/, /R/, and /T/, it does occur in both

samples, (rarely) in /T/ and (frequently) in /B/, where a flourished garland (counterclockwise) style is often used instead, especially in more formal productions such as Cecil 88.101. Kathryn A. Atkins in her *Masters of t*he *Italic Letter* (1988) surveys twenty-two copybooks dated 1514-1612 , which together include over fifty exemplars of every letter. Using the many samples of letter forms from that book, one can assess the probabilities of the serifed forms of these letters appearing as predominating forms in a particular hand (Figure 38).

Figure 38 shows that the serifed backbone is rare in 16th century italic standards of these capital letters, rare enough to be classified as an idiosyncratic feature, especially when it occurs so predominately in all four of these capital letters, as it does in both the Audley End Unknown and De Vere samples. It may therefore be concluded that the persistence of this structural feature constitutes strong evidence for the shared writership of the two samples.

II.5 Diacritics (6.3.4): The Medieval Latin Tilde in De Vere's Hand

One challenge in comparing the Audley End Annotations with the De Vere sample is that the Audley End Annotations are in Latin and Greek, while De Vere's letters and memoranda are mostly in English, including only short tags or proverbs in Latin and Italian. While this poses certain challenges,[27] it also affords further opportunities for inquiry, for instance when it can be documented that De Vere, even in English, retains such Latinate devices as the tilde. Above it was shown that Neville uses a non-standard tilde and that the Audley End Unknown uses two more conventional types, Type 2 apparently being an imperfect replication of Type 1; both are also seen in the De Vere sample (Figure 39).

The Latin tilde is found in many Latin documents of the period, so seeing it in Latin annotations is not surprising. More surprisingly, De Vere retains the diacritic in his English writing, in the same two Types as seen in the Audley End Unknown sample. To test the likelihood of this finding, the author surveyed four major sourcebooks of early modern hands (Gregg,

	Audley End Annotator	**De Vere**
/P/	Type 1 (almost all): Visible serif.	Type 1 (almost all): Visible serif. On the obvious difference in slant between the two data sets, see Part III.1 below.
/B/	Type 1 (almost all): visible serif staff.	Type 1 (common): visible serif staff
/B/	Type 2 (N/A): flourished staff.	Type 2 (common in more formal contexts): Garland or counterclockwise looping commencement (sometimes).
/R/	Type 1 (almost always): visible serif commencement.	Type 1(common): visible serif commencement.
/R/	Type 2 (N/A): Garland or counterclockwise looping commencement.	Type 2 (sometimes): Garland or counterclockwise looping commencement.
/T/	Type 1 (almost always): visible serif.	Type 1 (usually) visible serif.
/T/	Type 2 (rarely): no visible serif.	Type 2 (rarely): no visible serif.
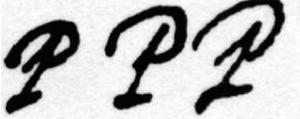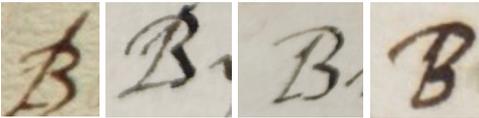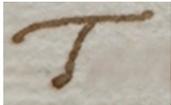
Figure 37. Seriphed and unseriphed capital letters in Audley End Annotator and De Vere.

B	P	R	T
2/55	3/57	4/51	1/55
(both pictured)	(1/3 pictured)	(2/4 pictured)	(pictured)

Figure 38. Distribution of Seriphed Capitals in Copybooks surveyed in Atkins, showing that for these capital letters, only 1-4 out of over fifty exemplars per letter employ a distinct serif to commence the letter's staff.

Audley End Annotator	**De Vere**
Type 1: Full waved Tilde. 	Type 1: Full waved Tilde.
Type 2: Simplified Tilde. 	Type 2: Simplified Tilde.
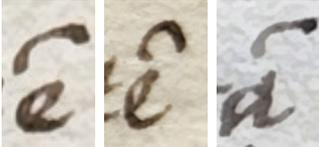
Figure 39. Latin Tilde styles in Audley End Unknown and de Vere. As in previous standards, a primary difference between these two samples is the use of the wider pen in the book annotations and a more slender one in the correspondence.

Gregg (1925)	30/110+
Dawson & Kennedy-Skipton (1966)	0/50
Pryor (2002)	6/50
Fairbank & Dickins (1962)	21/41 2 are in English (Croke and Cheke)
Total	57/251, but only 2 in English.

Figure 40. Distribution of Latin Tilde in early modern hands showing its extreme rareness in English.

Audley End Annotator	De Vere
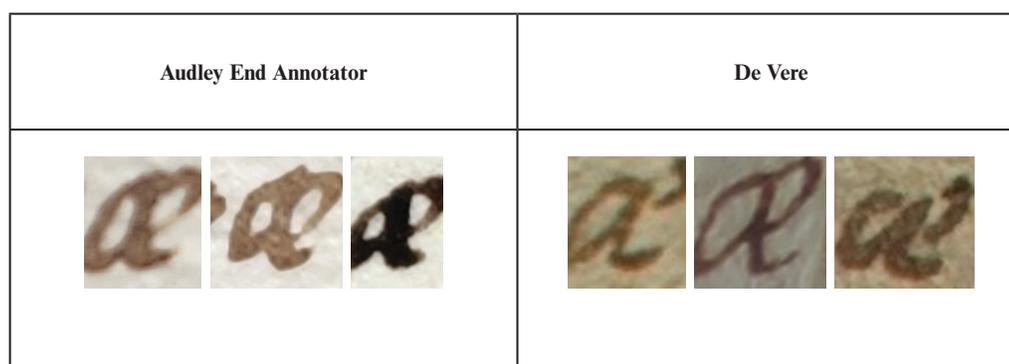
Figure 41a. The /æ/ diphthong in the Audley End Unknown and de Vere samples. The angles and shapes of the exemplars in the two samples are consistent with shared writership, and again the chief factors of difference are the narrower pen and slightly less upright orientation of the de Vere known sample.

Dawson and Kennedy-Skipson, Pryor, and Fairbanks and Dickins). These sources together reproduce more than 251 relevant samples. While the tilde occurs in about 25% of all available samples (Figure 40), the only other writers identified as using it in English documents are the Cambridge Latin scholars Croke and Cheke.

This persistence of the tilde in De Vere's English letters indicates the strong influence of his early Latin training and suggestively confirms Gabriel Harvey's opinion of his Latin fluency, as well as supplying yet another characteristic link between the two samples in question.

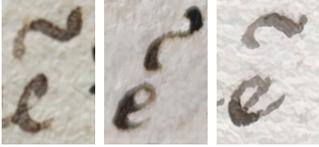## II.6 Numerals and Textual Symbols (7.2.1): ligature/diphthong æ/Æ in De Vere's Hand

Another Latinism seen in the Audley End annotator that persists in De Vere's English letters is the Latin diphthong /æ/Æ/ (Figures 41a & b). Above in figures 27a and 27b it was shown that Neville's /æ/Æ/ exemplars were distinctively formed from those of the Audley End Unknown sample. By contrast, both sets in Figures 41a and 41b line up well in their particulars.

Like the tilde, this Latin diphthong is common in the Elizabethan Latin hand, being seen in almost half

Audley End Annotator	De Vere
A similar if less pronounced confusion over the placement of the top member of the /E/ part of the diphthong is also present in the Audley End Unknown in some exemplars.	(Harl. Fol. 6991/5)
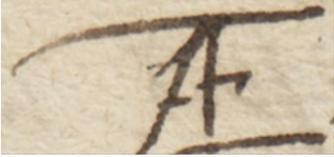
Figure 41b. The capital Æ Latin ligature/diphthong in Audley End Unknown and De Vere. These occur very rarely in the English writings of the period. This exemplar from Oxford's 1572 St. Bartholomew's day letter was apparently written under the stress of powerful emotion (see complete discussion below under Figure 42e).

Gregg (1925)	6/110 All six in Latin.
Dawson & Kennedy-Skipton (1966)	0/50
Pryor (2002)	1/60 in Latin
Fairbank & Dickins (1962)	17/41 All but one in Latin. Only Gascoigne is in English
Total	18/251 All but one in Latin. 1 in English.

Figure 42. Distribution of Latin script ligature/diphthong æ/Æ showing its great rareness in 16th century English language documents.

the Latin samples in Fairbank and Dickins and in six of 110 total samples in Gregg, but extremely rare in English documents of the same period.

The same data also show that the diphthong is extremely rare in English, being seen only in de Vere and in one other English hand ("George Gascoigne," Fairbank & Dickins, Plate 20) in the samples reviewed for this article. Given the additional application of this screening test, it again seems that the de Vere sample has passed this standard with distinction.

II.7 Consistency and Natural Variation (6.4.1): Five Ways to write "P."

/P/ is a letter which often exhibits an unusual range of variation. In another striking contrast between the two contending samples, the de Vere sample illustrates the same range of natural variation in /p/ as is seen in the Audley End Unknown sample, with five main types being visible in both (Figure 43).

These standards show a remarkable consistency of the range of variation within the latter, with all five

Audley End Unknown with four main types	De Vere with four main types
Type 1 (common): Curved or hooked termination.	Type 1 (common): Curved or hooked termination.
Type 2 (unusual): Looping reversed termination foot in one stroke.	Type 2 (common): Looping reversed termination foot in one stroke.
Type 3 (rare): straight termination with foot created in second stroke.	Type 3 (rare): straight termination with foot created in second stroke.
Type 4 (common in exigent circumstance, e.g. narrower margins of Tacitus): straight termination, with our without serif.	Type 4 (common in exigent circumstance, e.g., haste or less formal communications): straight termination, with our without serif.
Type 5 (unusual): Calligraphic thick-edge termination.	Type 5 (only in more studied, formal productions): Calligraphic thick-edge termination.
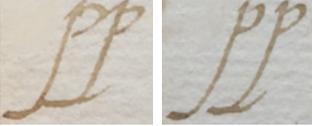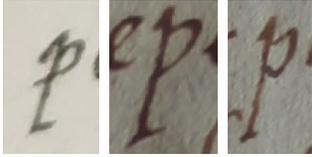
Figure 43. Audley End Unknown and De Vere showing five main types of /p/.

Audley End Unknown	**De Vere**
Type 1 (common): Looping ligature.	Type 1 (common): Looping ligature.
Type 2 (common): simple ligature	Type 2 (sometimes): simple ligature
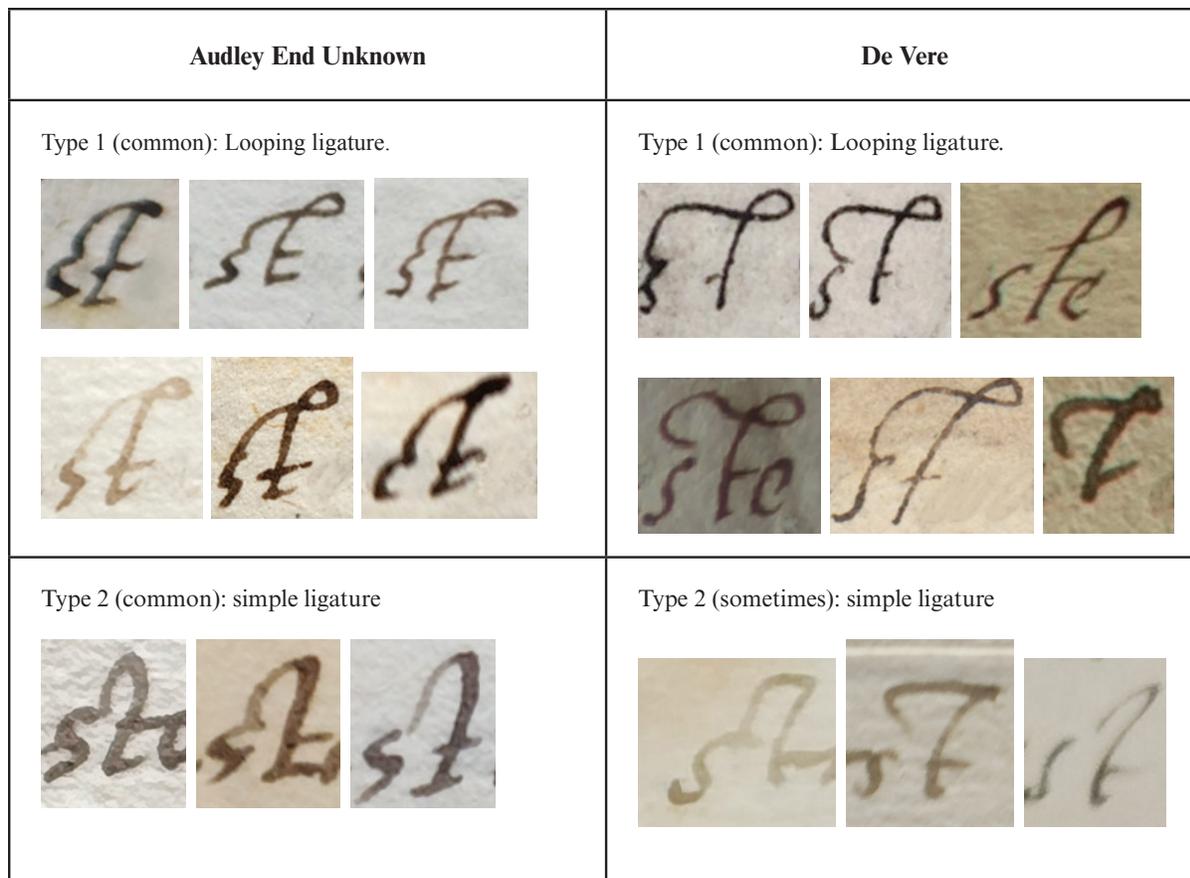
Figure 44. *St/ct* ligatures compared. The *st/ct* ligature occurs in two distinct types, neither of which exhibits significant vertical force. In Type 1, a slight loop connects the top of the *s* to the top of the *t*.

main types being present in both samples. Together they indicate a high likelihood of common writership of the Audley End and de Vere samples.

II.8 Terminations and Connections: *St/Ct* Ligatures in De Vere's Hand

Above it was shown that the ligatures used by the Audley End Unknown annotator were inconsistent with those seen in annotations used by Henry Neville. Applying the same test to the De Vere sample, by contrast, yields a striking confirmation of the common writership of both samples (Figure 44).

II.9 Embellishment (6.3.5)

As shown above (Figure 45), Sir Henry Neville often supplies unessential ornamentation to capital letters., but the de Vere sample illustrates the same plainness of style evident in the Audley End Unknown hand, both being distinguished by minimal use of non-structural ornamentation. Comparing the same Audley End Unknown exemplars to the de Vere sample, this distinction disappears and the exemplars line up as belonging to the same extended sample (Figure 45).

Once again, in contrast to our observations on this standard in Pt. I, the exemplars from both samples are completely consistent with one another, differing substantially only in the greater thickness of the pen and more upright orientation in the Audley End sample.

Applying eight standards to the null hypothesis of Sir Henry Neville as the Audley End Unknown annotator and the alternative hypothesis of Edward de Vere, 17th Earl of Oxford, shows that Neville was not the annotator but that de Vere probably was.

Audley End Unknown	**De Vere**

Figure 45. The Audley End Unknown and de Vere samples exhibit the same absence of ornamentation, in contrast to Sir Henry Neville (Figure 28). Again the primary difference between the two samples is the much thinner pen used in writing the known de Vere sample.

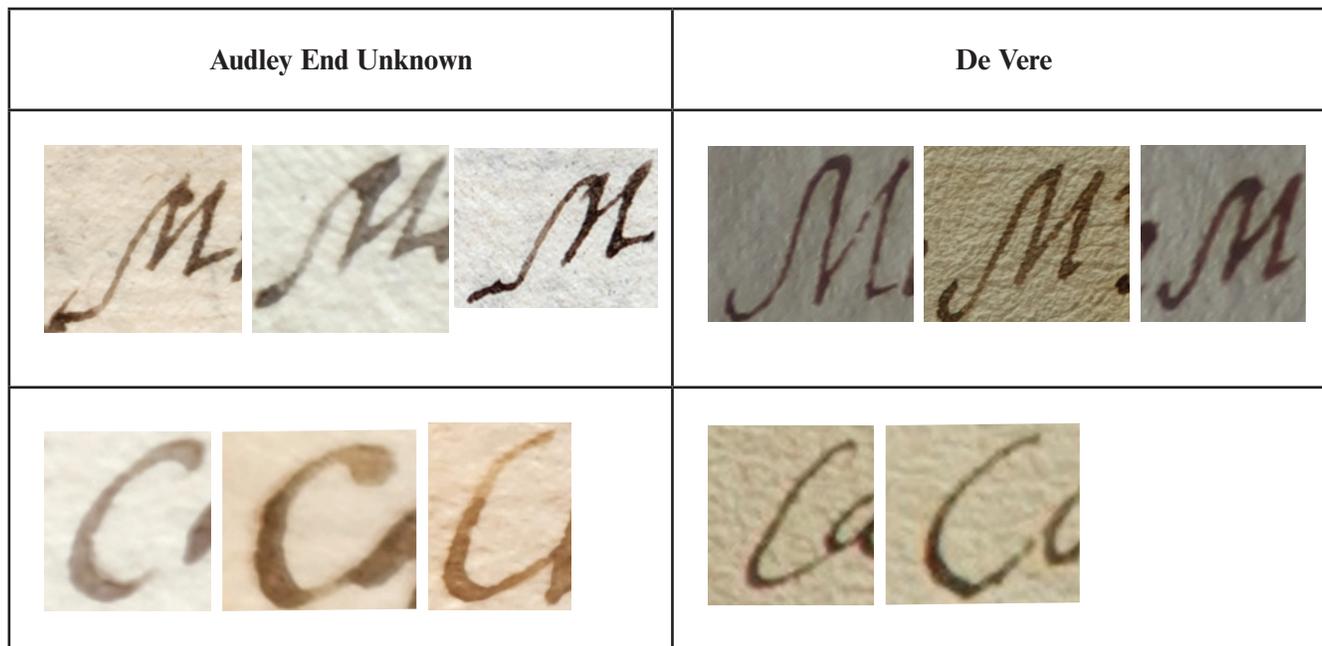This conclusion can be further corroborated through examination of whole word/letters sequences or the application of one final Standard, Pen Control.

II.10 Whole Word Comparisons: Audley End Unknown and Edward de Vere

In contrast to the Neville comparison above, whole word comparisons of the Audley End Unknown sample to the Earl of De Vere's illustrate closely comparable dynamic sequencing (Figures 46a-e). More specifically, comparison of whole words facilitates study of lateral spacing (6.2.1.7), Relative size (6.2.1.5.4), and connections (6.2.1.3).

Despite the consistently wider pen nib in the Audley End exemplars, the samples show every sign of being produced by the same writer.

II.11 Pen Control (6.3.9)

Pen Control is a general characteristic of handwriting that includes aesthetic variations in thickness of the line, including shading (6.3.9.1.1) or even such qualitative factors as balance and rhythm.

Both the Audley End Unknown and De Vere samples illustrate a high degree of pen control, including – in their most delicate expression – elegant variations in the thickness of the nib against the paper. Figure 47 illustrates shaded terminations of letters /p/, /long-s/, and /A/ that are produced by this writer at his most "artful." In the precisely executed downstroke, with the correctly cut quill, a slight reverse pressure spreads the nib cut to deposit an emphatic decorative termination.

The clubbed or shaded terminations on the letters in these two graphs show a consistency of execution that is difficult to explain except on the hypothesis of shared writership. Shaded terminations of this dynamic form are rare in other known Elizabethan hands, including those in Fairbanks and Dickins or Greg's *English Literary Autographs*. Indeed, they only appear in a few of De Vere's letters, those written with just the right size and shape of pen nib and usually in more formal circumstances.[28] These graphs also show the by-now expected reduction in the thickness of the pen and slant when compared to those from Audley End.
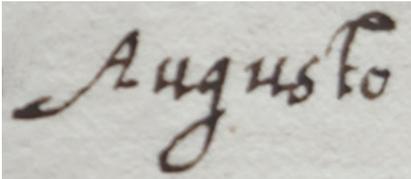
Audley End Unknown	**De Vere**
Augusto.	August.
Augusti.	August.
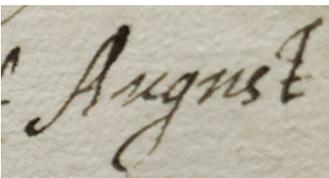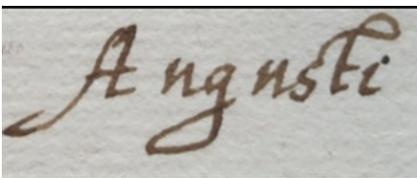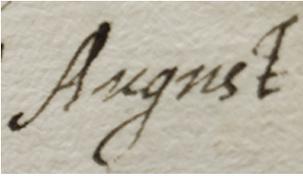
46a) The same spacing pattern – wide gap between *A* & *u*, *u* connected to *g*, gap between *g* and *u*, *u* connected to *s*, and *s* connected or almost connected to *t* with ligature is visible in all three exemplars. The shape and orientation of the /st/ ligature is highly variable in both samples (see II.8 above).
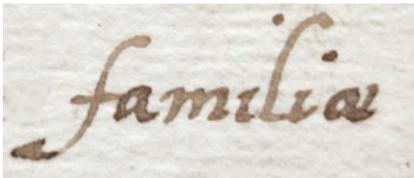
Audley End Unknown	**De Vere**
familiae	familiarites
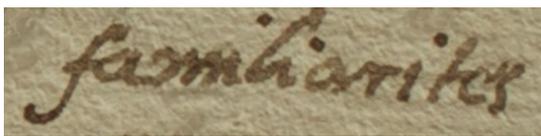
46b) In addition to the general rhythmic similarity of the execution, note in both exemplars 1) the f crossbar intersecting /a/, 2) the discontinuity between a and m, and 3), especially, the shape and spacing of the dots on /i/ in the two ili sequences (on the locations, shape, and orientation of the dot of the /i/ as potentially salient discriminating elements, see Harralson and Miller 111). The two primary observable differences between the samples are 1) the significant variable of the thicker pen, leaving both a thicker line and sharper edges in the Audley End Unknown sample, compared to the softer edges of the strokes and rounder forms in the de Vere sample, and 2) the reduced slant and more upright posture of the Audley End Unknown sample (see Sections III.1-2 below). *Familiarites* is a Latinate form of this word, as if a contracted nominative/accusative plural of *familiaritas* (which would be *familiaritates*, with the same *-es* ending as idiosyncratically used here), yet it is used here in an English sentence as an English word. This form is extremely rare in Early modern English, where the normative spelling is, *familiarities*. EEBO Michigan returns only three hits for this spelling, all dated 1640 or later; *familarities* returns 358 hits in 283 records, starting in 1556.

Audley End Unknown	De Vere
	 (de Vere Geneva Bible Ecclus. 11.21)

46c) The typically angular construction of all three of these letters is clear in these exemplars, especially in the /c/ and /n/. In a constrained space, /c/ followed by /o/ comes near or strikes the /o/.
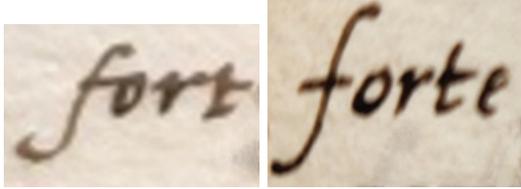
Audley End Unknown	De Vere
 Fort[e]	 for
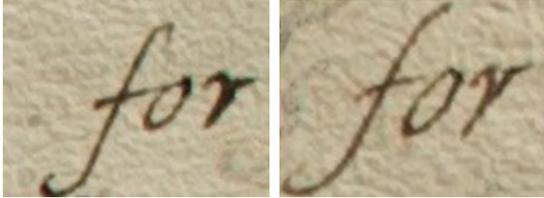
46d) /f/ is a long-s with a crossbar. The de Vere exemplars, here as elsewhere, show greater slant, but key aspects of connectivity are consistent, e.g. the /f/ crossbar in both samples collides with or nearly misses the following vowel.

Audley End Unknown	**De Vere**
Æneas Ænea	Æneases. Image courtesy the British Library.

46e) /Æneas/ in the Audley End Unknown hand compared to De Vere's 1572 St. Bartholomew's Day letter (Harl. 6991/5) to William Cecil, written in English sentence. The /Æ/ diphthong is extremely rare in 16th century English hands. This letter recounts the genocide Huguenots by French Catholics, August 23-24 on the Feast of the St. Bartholomew the Apostle. The slaughter started in Paris, where thousands of Hugenots had thronged for the wedding of the Hugenot prince Henry of Navarre to the Catholic Margarite D'Anjou and and spread over several weeks to other cities. At least ten thousand Protestants were slaughtered. Writing to William Cecil, de Vere described the chaos and slaughter: "I would to God your Lordship would let me understand some of your news which here doth ring dolefully in the ears of every man, of the murder of the Admiral of France, and a number of noble men and worthy gentlemen, on whose tragedies we have an number of French Æeneases in this city, that tell of their own overthrows with tears falling from their eyes, a piteous thing to hear but a cruel and far more greivous thing we must deem it them to see. All rumours here are but confused. . . " (Fowler 55).

III.1 Circumstantial Factors Influencing Handwriting, especially 9.1.2.4, Spatial Limitations

The previous **Standards** have undermined the null hypothesis of Sir Henry Neville and instead point to a very strong likelihood that the Audley End annotator is de Vere. The choice and sequence of **Standards** used in this analysis permit consideration of a wide range of the available data, organized in a logical sequence moving from more general to more specific elements of discrimination. For the relevant standards, the author also reviewed exemplars from available collections (Gregg, Dawson and Kennedy-Skipson, Pryor, and Fairbanks and Dickins) in to evaluate the frequency of the discriminating elements (Figures 38, 40, and 42). In every standard but one it was determined that Sir Henry Neville was unlikely or highly unlikely to have been the writer of the questioned document, and in every standard it was determined with high or very high likelihood that de Vere was.

Yet the two samples in question, carefully examined, are not without small points of contradiction. In the interest of comprehensiveness, these should be considered before completing the analysis.   The previous comparisons consistently produced exemplars of the Audley End Unknown sample that are more upright than those extracted from the de Vere control. In a correct positive identification, anomalies may be the result of **Circumstantial Factors** of various kinds, and if so these must be explained by relating the circumstances of production to observable features of the samples. Harralson and Miller's maxim #11 is "Natural variations in writing diverge with the writer's condition; the writing conditions may diverge with the nature of the document" (77).

In this case, the Audley End Unknown sample is written in the narrow spaces of book margins, measuring anywhere from about two inches in the Cassius Dio and Dionysius Folios to to less than an inch in smaller books such as the Tacitus or Guiccardini. The margins are also not flat, but, to a greater or lesser degree, concave, and made from paper manufactured for printing, not for receiving handwriting. Perhaps as an adaptation to this distinct context, the Audley End Unknown exemplars are usually written with a

Audley End Unknown	De Vere
consciscit (to inflict upon oneself)	Impossible
Agrippa Alla (Cassius Dio (above) and Dionysius (below).	[ove]rpaste (Cecil papers 99/150), 25 & 27 of April 1603).
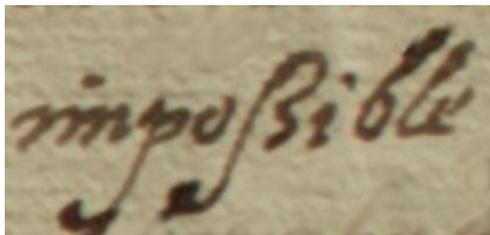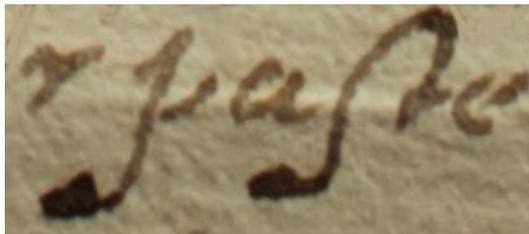
Figure 47. Pen control compared - shaded terminations of letters *p*, *s*, and *A*.

considerably wider pen nib and consequently display a greater variance in the thickness of the line than is typically seen in the de Vere control.

Fortunately there is available a third critical point of comparison that not only confirms that the observable differences between the two samples can be attributed to their distinct circumstances of production but may permit a general inference about variation in writing produced in these two distinctive contexts. Before the Audley End Annotations, the only forensically confirmed[29] sample of Edward de Vere's annotations were the 27 English words and partial words inscribed in the margins and other blank spaces of his 1570 Geneva Bible (Figures 48a & b).

By long-established principle, the characteristic forms of a writer are influenced by material factors like the width of the writing field. For example, Morton (1980) showed empirical data that limitations in space inhibited lateral expansion, by means of compression on the horizontal dimension or miniaturization of the writing in both dimensions (Harralson and Miller 218). Both these strategies are visible in the Audley End annotations. The evidence of the Audley End Unknown sample further suggests that in accommodating the narrow writing surface by reducing forward momentum, the forms produced may be more upright in appearance than those produced on a full sheet of paper. The existence of this trend can be confirmed with a three-way comparison including 1) de Vere correspondence, 2) de Vere in the Geneva Bible, and the 3) Audley End annotations. The Geneva Bible annotations share the more upright posture of the Audley End exemplars of /P/ (Figures 49-51).

The same feature is evident with /l/, where the de Vere Geneva Bible exemplar is ~20˚ more upright than that of the de Vere correspondence (Figures 52-54).

De Vere Geneva Bible /A/	De Vere Geneva Bible /A/
Figure 48a. Proverbs 3.9-10 in de Vere Geneva Bible: "(Give unto the poore)" in black ink written between the lines accompanied by red ink underlining of the verse number. Here the forms are compressed to fit in the narrow space between the lines. Image courtesy the Folger Shakespeare Library. On the handwriting question see, https://shake-speares-bible.com/2022/04/30/whose-handwriting-is-in-the-de-vere-geneva-bible/.	Figure 48b. II Corinthians 9.1-2: "Almes" in red ink in de Vere Geneva Bible in the margins showing fuller vertical extension, with underlining of verse numbers in in red ink. For More details on handwriting of the de Vere Geneva Bible see the pdf: https://shake-speares-bible.com/wp-content/uploads/2022/05/2.1-close-hand-comparisons.pdf.

And again the feature is seen in the comparison between the de Vere and Audley End Unknown samples of /S/ (Figures 55-57).

In some letters, such as /n/, the more upright posture also results in a visible increase in the relative width of the letter, as vertical thrust is displaced into a slower, more lateral motion (Figures 58-60).

In correspondence inscribed on a full piece of paper the writer's hand moves steadily across the page; in the margins of a book, speed may be reduced to more carefully allocate limited horizontal space, and this adjustment has been shown to result in a more upright posture to the letters. The book margins are also not flat. The spread of the pages produces a more or less concave surface; warpage of the individual pages may also produce unevenness in the writing surface, which especially in the Folio volumes complicated efforts to capture the best possible photos of the data; and in the Audley End Annotations at least, the annotator typically uses a wider pen than that seen in the de Vere control samples. Under such circumstances the functional shapes used in correspondence can become more conscious aspects of design, taking on a more "calligraphic" appearance, imparting a more decorative, less linear stylization to the letters (Figure 61).

Just like the de Vere Bible exemplar /A/ above, in slowing the pace of the writing, the Audley End exemplars, reflect a more pronounced decorative character, with more expansive ornamentation on the horizontal plane, when compared to the de Vere control exemplars (Figure 62).

Considering both the abundant positive evidence already adduced and the modest character of these differences, it would be safe to conclude that, while probative to note, they cannot by themselves sustain any reasoned doubt of the conclusion. On the contrary, the evidence of these variations points towards a more general theory of how handwriting in the margins of books is likely to differ from handwriting on a full sheet of paper. This is especially true considering the supportive evidence, however slight, from II Corinthians in the de Vere Bible, which exhibits the same tendencies in a parallel context of production.

Figure 49. /P/ from de Vere Correspondence. @ ~60 ˚.

Figure 50. /P/ from de Vere Gweneva Bible @ ~85 ˚.

Figure 51. /P/ from Audley End Unknown @ ~80 ˚.

The same feature is evident with /l/, where the de Vere Geneva Bible exemplar is ~20˚ more upright than that of the de Vere correspondence (Figures 52-54).

Figure 52. /lo/ from de Vere Correspondence @ ~60˚.

Figure 53. /l/ from de Vere Geneva Bible @ ~80˚.

Figure 54. /li/ from Audley End Unknown @~75˚.

And again the feature is seen in the comparison between the de Vere and Audley End Unknown samples of /S/ (Figures 55-57).

Figure 55. /long-s/ from de Vere letters @ ~60˚.

Figure 56. /long-s/ from De Vere Bible @ ~75˚.

Figure 57. /long-s/ from Audley End Unknown @ ~80˚.

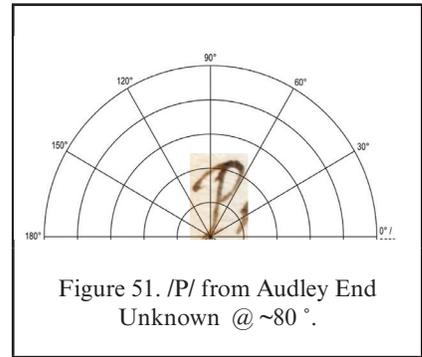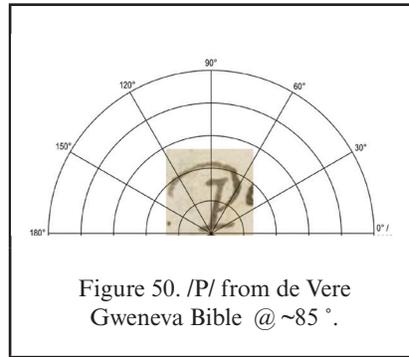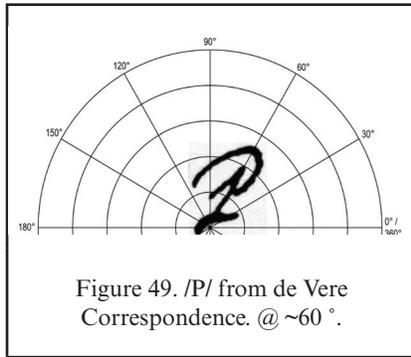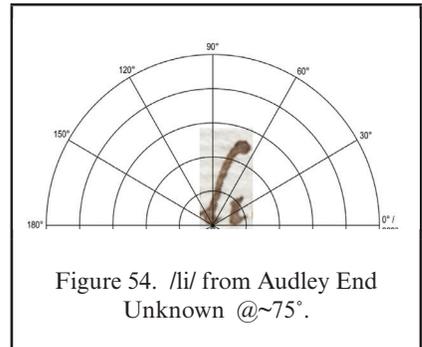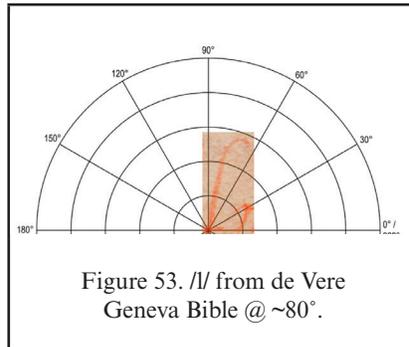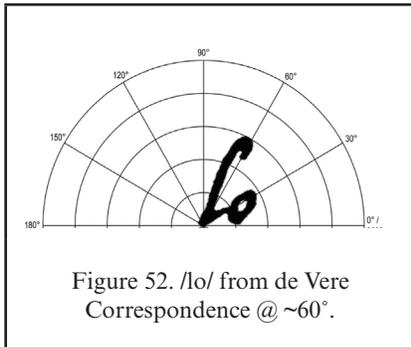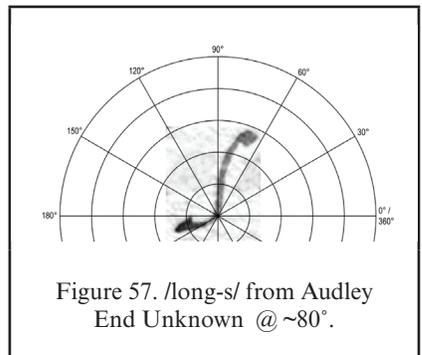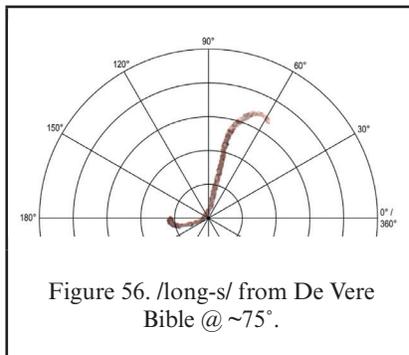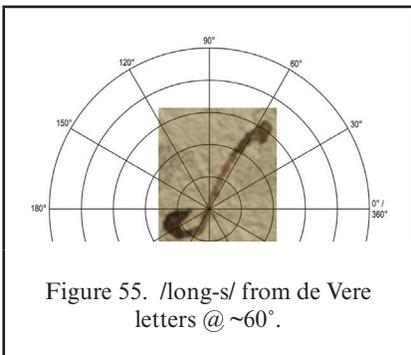In some letters, such as /n/, the more upright posture also results in a visible increase in the relative width of the letter, as vertical thrust is displaced into a slower, more lateral motion (Figures 58-60).

Figure 58. /n/ from de Vere correspondence @ ~45˚ showing narrow form.

Figure 59. /N/from de Vere Bible @ ~70˚ showing wider form.

Figure 60. /N/ from Audley End Unknown @ ~70˚ showing wider form.

De Vere Geneva Correspondence	De Vere Geneva Bible
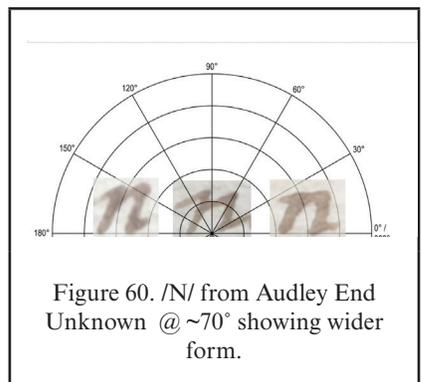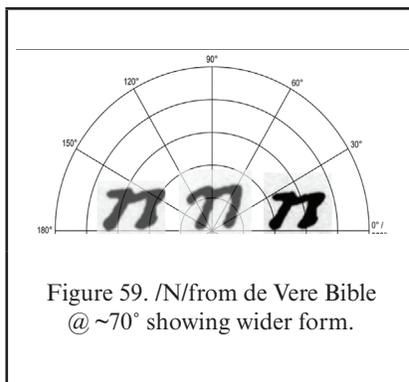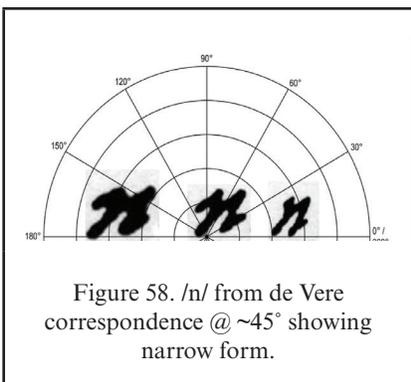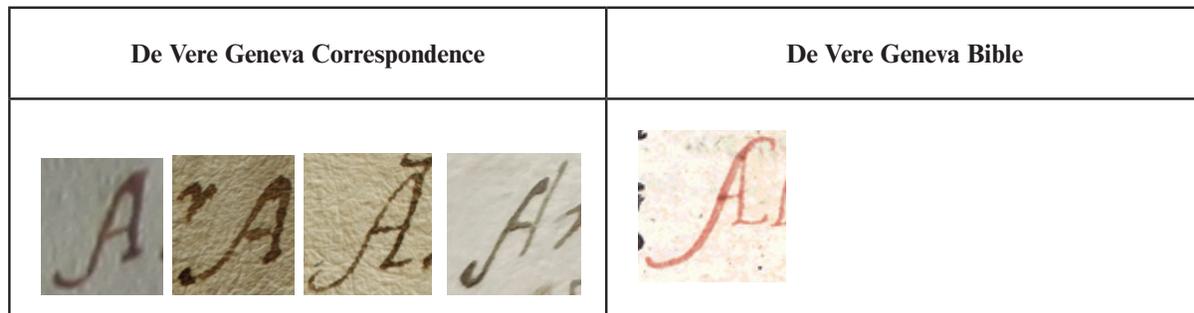
Figure 61. Comparison of elegantly flourished de Vere Geneva Bible /A/ (right) with plainer exemplars from the de Vere letters (left) confirms the tendency towards stylization in marginal annotations.

	De Vere	Audley End
/I-J/		
/H/		

Figure 62. /I.J/ and /H/ in de Vere and Audley End Unknown, illustrating differences. Consistent with the data for Figure 61 from the de Vere Geneva Bible, the Audley End Unknown annotations show more decorative forms of these letters.

III.2 Conclusion & Implications

This article has applied eight of the 21 elements of handwriting discrimination identified by Huber and Headrick (87-141) to test to possible hypotheses regarding the origins of the Audley End Unknown Annotator: Class of Allograph, Handwriting System, Design and Construction of Allographs, Diacritics, Abbreviation, Connections and Terminations, Consistency and Natural Variation, and Embellishments.

Only in the first and most general of these standards was Sir Henry Neville (broadly) consistent with the annotations. By every other standard, Neville's sample failed to constitute a match with the Audley End Unknown while Edward de Vere, 17th Earl of Oxford, consistently matched the standard.

Bearing in mind that handwriting analysis is an irreducibly statistical form of inquiry, one which "must, knowingly or unknowingly, engage statistical proof" (Harralson and Miller 59), the study not only utilized multiple exemplars of every distinguishing element, but established the rarity of the discriminating elements used in four compendia of 16th century handwriting samples, totaling over 260 manuscript hands in one set of sources (Greg et al.) and over 260 copybook standards in another (Atkins), to show that many of the **Discriminating Elements** common to the Audley End Unknown and de Vere samples are unusual or rare in both English and Early Modern European handwriting (Figures 38, 40, and 42). Whole Word Comparisons from both suspects produced the same result. Finally, the identity

of de Vere and the Audley End Annotator was further established by examination of Pen Control (6.3.9).

Having reviewed the positive evidence supporting these conclusions, the article considered the counter argument, explaining the basis for **Accidentals** that could be mistaken for negative evidence. To the extent that such discrepancies exist, these appear to result from the different circumstances of execution, including the adaptation to the conditions of marginal annotation written in narrow space on the uneven surface of a book page. Together these standards permit two conclusions: 1) Sir Henry Neville did not make the annotations in question; 2) They were instead, with very high probability, written by Edward de Vere, 17th Earl of Oxford.

The question remains, if these books as a collection are only incidentally annotated by Sir Henry Neville yet heavily annotated by Neville's contemporary colleagues Saville and de Vere, how did they come to be part of Neville's Billingbear estate? In the case of Savile the answer is obvious on account of the long-acknowledged association between the two men. While de Vere's relationship to Neville is more elusive, de Vere and Neville were both intellectual noblemen who shared passions and interests, including history and international relations. While de Vere was not, like Neville, jailed for supporting the Essex rebellion, he was by every indication sympathetic to the aims of the young reformers, even if he kept up appearances in his "courtly" correspondence with Essex's chief antagonist Principal Secretary Robert Cecil (See Fowler 1986). Before she married William Stanley in 1595, de Vere's eldest daughter Elizabeth had been engaged to Essex's captain Henry Wriothesley, 3rd Earl of Southampton, who shared de Vere's passionate interests in poetry and history.

During the final decades of the Elizabethan reign de Vere thus shared the social milieu and intellectual interests of Sir Henry Neville and Neville's tutor Savile, and this can explain how these books found their way to Billingbear and eventually Audley End. None of the books annotated by the Audley End Unknown annotator are primarily *literary* in character; on the contrary, they all share one characteristic as works of history, namely an intent to inform and edify readers by historical example. They use imaginative techniques (especially, for example, in the composition of speeches of the historical actors of the narratives) but are not primarily works of imaginative literature; instead they provide historical *exempla* for contemporaneous conduct.

De Vere also owned a copy of the collected Works of Geoffrey Chaucer, and a copy of the 1572 edition of Amyot's French translation of Plutarch's *Noble Lives*, as well as other Italian books, possibly including Boccacio (Ward 31-35). Given the more didactic character of the Audley End books as a group, even if the material evidence is beyond recovery, it seems plausible that the books were lent to Southampton or Southampton and Neville, during their long months in the Tower of London between their arrests in Feb. 1601 and their reprieves two years later (c. April 1603) after King James came to the throne. Neville and Southampton were, moreover, both rearrested under mysterious and still not fully explained circumstances on or around June 24, 1604, the same night the 17th Earl of Oxford died.[30] Neville lived until 1615 and was thus in several ways a highly plausible heir of some part of the 17th Earl's library.

Does Forensic Document Examination Have A Role In The Study Of Historical Documents?

The findings of this report may also raise significant questions about the role of forensic document examination in the study of historical artifacts that have conventionally been the province of practitioners from other disciplines (History, Biography, or English, for example) who may be reluctant to cede authority, even where appropriate or necessary, to methods in which they possess no formal training or certification and of which they may have little understanding. For far too long, it seems, the alienation of Shakespeare studies from the scientific practices and principles of the Forensic Document Examiner, has encouraged a pseudoscientific approach to historical materials that has overlooked for almost a century the seminal methodological clarifications of Osborn (1929), Haselden (1935), and so many others, including Huber and Headrick (1999), who have in that century steadily refined and improved the standards of forensic verification used in the analysis and identification of handwriting evidence.

This study has tested a single, simple – and consequential – proposition about the past. In the fourteen or more volumes that Shelly Maycock and I have examined at Audley End, Sir Henry Neville's handwriting appears in only one (Thucydides). Neville's handwriting, moreover, is quite distinct (Figures 17, 23-32) from that of the Audley End Unknown Annotator. Both historical and forensic evidence instead confirm that Edward de Vere, 17th Earl of Oxford, is a highly probable writer of these annotations. Although the implications of such a finding fall outside the scope of a focused forensic inquiry,[31] the author hopes that the analysis presented here will encourage other document examiners and laboratories to independently test these findings.

Acknowledgments

Endnotes

[1] **Maria**. I will drop in his way some obscure epistles of love. . . I can write very like my lady your niece: on a forgotten matter we can hardly make distinction of our hands (*12th Night* 2.3.155-161).

[2] Audley End was acquired by the Ministry of Works in 1948 and is today part of the UK's National Heritage Collection. About 50% of the objects in the house remain in the ownership of the heirs of the Barons Braybrooke, including the majority of the books. Audley End and Gardens are today managed and operated by the charity English Heritage, on behalf of the Historic Buildings and Monuments Commission for England.

[3] For perhaps the best history of the debate, see Hope and Holston. The "Oxfordian" hypothesis dates from John Thomas Looney's seminal 1920 "Shakespeare" Identified as Edward de Vere, 17th Earl of Oxford. More recently, Ward (1928), Fowler (1986), Price (1997), Sobran (1997) Anderson (2005), Farina (2006), Gilvary (2018), Winkler (2023), are among the many who have offered original insight and analytic progress on the question.

[4] http://kenfeinstein.blogspot.com/ Accessed 11/22/2023.

[5] Casson and Rubinstein in Sir Henry Neville is Shakespeare: The Evidence misidentified this book as the "Dionysius section" of "Appian" (9). Dionysius (60-7 B.C.E.) and Cassius Dio (C.E. c. 155 - c. 235) are two different Roman historians separated by nearly 150 years.

[6] Technical boldfaced terms are defined in the glossary

[7] In the quest to learn more, over the last year my wife Shelly Maycock and I made two recent trips to Audley End (Oct. 19-20 and June 7-9) where Dr. Peter Moore and the English Heritage staff hosted our visit while Dorna Bewley ferried us to and from Audley End and our two other research venues, Hedingham Castle and the British Library.

[8] See Appendix B. *Discourse Politiques* is one book in two volumes and is counted as one book. The Appian Folio contains Appian – annotated only by Sir Henry Savile – bound together with a copy of Cassius Dio – annotated only by the Audley End Unknown. As the binding does not appear to be original, it is probable that the two books were separated at the time the annotations were made and bound together in a later century. However, both hands do occur together in the Tacitus and Dionysius volumes.

[9] Documents sampling the handwriting of the Earl of Oxford have been utilized courtesy Hatfield House, The British Library, The Folger Shakespeare Library, The Huntington Library, and 1604 Productions; those sampling Sir Henry Neville are courtesy Lincolnshire Archives, the Trustees of Audley End, and Ken Feinstein's website. The materials for Oxford's hand consist of a few more than the 77 documents cataloged by Alan Nelson in 1995 (today available in amended and corrected), at https://shake-speares-bible.com/pdf/Nelson_Inventory.amended.pdf).

[10] Although it is not inconceivable that these two books were bound together in the 16th century, the distinctive patterns of annotation as well as the clear evidence for later rebacking, suggest the probability of such a scenario.

[11] On genealogical charts in the endpapers of Tacitus the Audley End Unknown hand is supplemented and corrected by Savile.

[12] http://kenfeinstein.blogspot.com/2019/09/my-discovery-of-nevilles-library-and.html. Accessed 11/22/2023.

[13] See Ogg (1953) for a modern reprint of these three books. Each illustrates not only an italic, but various styles of "Chancery Cursive" hand designed for use by secretaries and copyists. For a more thorough listing with illustrations from twenty-two published texts on the Italic hand, see Atkins (1988).

[14] In predominantly Italic hands of the period, underlining of formerly italicized features became the norm, a practice that survived in the modern hand up until the advent of machine-assisted interchangeable Roman and Italic fonts.

[15] In this analysis, all exemplars used for comparison are either bracketed with two forward slashes, or placed in italics.

[16] A more thorough and closely elaborated typology of these forms could include as many as ten types, but these five are by far the most common at least in England before 1604 and they supply sufficient detail for the purposes of this analysis.

[17] Ken Feinstein has confirmed the prior existence of at least some of the books in question in the surviving booklists from Billingbear. http://kenfeinstein.blogspot.com/2019/10/shakespeare-and-neville-re-evaluating.html (accessed 11/22/2023), and on present evidence it seems probable that many of the pre-1604 volumes today indeed arrived at Audley End from Billingbear.

[18] Cecil was so powerful during the Elizabethan reign that his enemies called him "King Cecil." He was both Principal Secretary (1558-1572) and Lord Treasurer (1572-1604), as well as holding the lucrative and influential post of Master of the Wards (1561-1598).

[19] BL Lansdowne Fol. 6/25.

[20] See Stevens, Son and Stiles (1949), 454.

[21] Louise Thorn Golding in his biography of Arthur Golding finds that although "no definite record has been found indicating" that Arthur Golding tutored the young Earl, "it "would appear reasonable in view of the factor of relationship as well as the fitness of the one and the youth of the other" (29).

[22] Caroline Bowden, "The Library of Mildred Cooke Cecil, Lady Burghley*," The Library*, 6:1 (March 2005), 3-29.

[23] It deserves notice, although the point cannot be elaborated here, that a sophisticated knowledge of Latin undergirds Shakespeare's use of English. Charles C. Hower applies Latin etymology to the elucidation of the meaning of several Shakespeare lines, demonstrating in the process that Shakespeare's knowledge of Latin was not – as long misguided tradition has believed – "small." For a current review of the evidence for Shakespeare's knowledge of Latin, see Burrow (2013), which concludes that "an engagement with classical antiquity was one of the central foundations of [Shakespeare's] writing" (247). Meanwhile, Joseph Churton Collins extensive proofs (1904) for Shakespeare's fluency in Greek and knowledge of the Attic dramatists remains unaddressed and unanswered –even by Burrow, who only considers Shakespeare's knowledge of Latin sources.

[24] Oracio Ogno, the choir singer whom Oxford brought back with him to England, when cross-examined by the inquisition, confirmed that Oxford "was a person who spoke Latin and Italian well" (Nelson 157). Cogno's statement is corroborated by the linguistic variety in de Vere's letters, which include the following Latin and Italian expressions: *Scire tuum nihil est, nisi te scire hoc sciat alter* (1573 Preface to *Cardanus Comforte*); *Ut nulla sit inter nos amicitia* (1576 Sienna Letter); *Calcitrare contra li busi* (1576 Sienna Letter); *Pr[a]eter spem*

(1576 Sienna Letter); *Meta incognita* (1578 to the commissioners); Writ of *elegit* (1950 Heningham lease); *Fieri facias* (1950 Heningham lease); *Levare facias* (1950 Heningham lease); *De bene esse, quantum in Regina est* (1601 to Robert Cecil); *in medio rerum omnium certamine et discrimine* (1602 4th Danvers escheat); *Finis coronat opus* (1602 4th Danvers escheat); *De bene esse quantum in nobis est* (1602 5th Danvers Escheat); *De bene esse* (1602 5th Danvers Escheat).

[25] Based on these and many other sources it is safe to conclude that Oxford was significantly more skilled in languages, not to mention more "literary," than he appears in Alan Nelson's useful but tendentious *Monstrous Adversary* (2005), in which it is seriously claimed that "particularly in his legal Latin . . .[Oxford]. . . frequently made serious grammatical errors," "did not retain the basic grammar lessons of his youth," and was "neither a Latin scholar, nor even a fully competent practitioner of his native English" (66-67).

[26] The de Vere standards, drawn from documents courtesy The British Library, The Huntington Library, and Hatfield House, are occasionally (for example, when documenting rare forms) identified with the assistance of Alan Nelson's census "Report on Oxford Documents" (1995).

[27] See, e.g., Huber and Headrick (p. 67) on whole word comparisons, which are difficult to track across the linguistic barrier.

[28] These include Cecil papers 99/150 & 99/161 (7 May 1603).

[29] Independent Board-Certified Forensic Analyst Emily Will, in her April 20, 2000, Report attests that "after a thorough examination in this case, it is my expert opinion that it is highly probable that the Edward de Vere, 17th Earl of Oxford, is the author of the Q1 questioned annotations" (Stritmatter 2001 539).

[30] G.P. V. Akrigg, 264.

[31] For further reading, see, especially, the texts noted in fn 6.

Appendix A: Audley End Project Glossary

Abbreviations: Contractions used to eliminate letters, including diacritics but also learned systems for shortening the expression of commonly understood words or concepts, e.g., S. C. for Senatus Consultus.

Accidental: a difference that cannot be interpreted for or against a conclusion of common writership. See also Natural Variation.

Allograph Combinations: "The nature or structure of. . .neighboring allographs may exercise some influence upon a character" (Huber and Headrick 100).

Arrangement: Harrelson and Miller define this as "the order or organization of a written inscription on a sheet" (356), where sheet is essential to the concept. Arrangement, in other words, will vary with circumstance.

Bigram: A pair of letters studied as a unit to assess the relationship of each to the other.

Cambridge Italic: The school of Italic Handwriting started by Sir John Cheke and Roger Ascham at Cambridge University in the 1530s, studied in Fairbank and Dickins (1962).

Circumstantial Factors: Factors affecting the particular and sometimes unique character of documents written by the same writer. These include both objective (writing implement, writing surface, physical constraints of various types) and subjective (emotional, etc.) factors.

Class of Allograph: A copybook style of writing, e.g., Italic vs Secretary or Chancery hand.

Control Sample: One or more samples of handwriting by one or more possible writers of the Unknown Document.

Connection: The direction, force, thickness, and extension of an empirical or reconstructed line connecting one letter to another.

Consistency and Natural Variation: The variation in elements between samples by the same writer in any relevant circumstance. Natural variation exists both within documents and between them, based on Circumstantial Factors. An argument that relies too heavily on the concept of Natural Variation to make a positive case may be flawed but assessing the empirical or probable range of natural variation within a hand is necessary to avoid a false negative and can also be used to contribute to an identification or disqualification.

Design and Construction of Allographs: More specific than Class of Allograph, this standard involves involves "factors that relate to the system learned, some to the structure of the character, and some to the patterns or styles selected" (Harralson and Miller 92).

Discriminating Element: A feature of handwriting that can be used to discriminate or identify any two samples to determine their relative writership.

Diacritic: A special mark used with a letter or group of letters to indicate a variation in sounding from the letter without the diacritic, e.g. exeplū= exemplum. Sometimes classified as an aspect of punctuation, diacritics are also a form of abbreviation. Their use or absence, as well as their design, can be a diagnostic element of writing style.

Early Modern: The period of European history, c. 1500- c. 1800 C.E, sometimes used interchangeably with "Renaissance."

Elements of Execution: Differences that are "less obvious [than elements of style], more subtle elements, including abbreviation, alignment commencem,ents and terminations, diacritics and punctuation, embellishments, line continuity, line quality, or fluency (speed), and pen control. See also elements of style.

Elements of Style: Differences that "play a significant role increating a pictural, or general or overall effect" (Huber and Headrick 91), including arrangement, connections, slant or slope, spacings, class, and choice of allographs. See also elements of execution.

Embellishment: "Flourishes, ornaments, paraphs, rubrics, and underscores" (112).

Exemplar: An example of an element extracted from a sample for comparison with another exemplar. Exemplars may be letters, whole words, or other discriminating elements.

Establishing Shot: A photograph that establishes context for details shown in other photos.

Graph: A letter or graphic symbol; a particular representation of a grapheme. For example, the grapheme |g| exists in the two distinct graphs g and g, which are formed by distinctive motions of the hand.

Grapheme: Harralson and Miller define this somewhat evasive abstract idea as "the smallest identifiable unit of writing; not divisible; the abstract concept of a letter of the alphabet" (362). As Davis explains, "A reader sees graphs, recognizes graphemes, and is thus able to read" (254).

Individuality of handwriting: The premise, validated in several major studies, including Srihari, Cha, Arora, and Lee (2002) and Harrison, Burkes and Seiger 2009. that no two writers will, under normal circumstances, have indistinguishable characteristics.

Italic: a Class of Allograph, used in England and elsewhere in Europe between c. 1520 and 1620, as modeled in manuals reproduced by Atkins. Italic is a historically specific variant of Huber and Headrick's category of manuscript or script writing, "in which letters are disconnected and are designed similar to upper and lower case printing letters" (95) and generally correspond to the forms seen in modern italic, as distinct from Roman, print.

Jacobean: Related to the reign of James I, 1604-1625.

Letter Sequence Comparison: Like Whole Word Comparisons, sequences of three or more letters (c.f. Bigram), allow an assessment of dynamic sequencing, including the shapes of letters in context with the types and locations of their intra-letter connections.

Oxfordian: An advocate of the hypothesis that Edward de Vere, 17th Earl of Oxford, is the real Shakespeare (See Looney, Ogburn, Anderson, and Warren in attached bibliography).

Pen control: The management of the writing instrument by the hand, including "shading and variations" produced by point load, "the vertical component of force applied to the nib, or ball, or tip of the writing instrument" (118).

Persistency: The tendency to minimize natural variation in the construction of an allograph or set of allographs.

Post-Stratfordian: A person who questions to the traditional attribution of the works of Shakespeare to the Stratford businessman William Shakspere (1564-1616).

Praxis: a fusion of theory and practical application in any investigation.

Punctuation: Classified with Diacritics in Huber and Headrick, this is defined as including marks "used in [a writing system] to clarify the meaning of sentences by attempting to control the reading of a passage to correspond to certain elements of the spoken word" (114).

Questioned Document: A document the handwriting of which needs identification.

Sample: Subset of a known hand or an unknown document selected for comparison.

Slant or slope: Defined by Huber and Headrick as "the angle or inclination of the axes of letters relative to the perpendicular to the baseline of the writing" (107).

Spacing: Measures both intra and inter-word of lateral expansion including patterns visible in cases of specific combinations of letters.

Standard: The comparison of a Distinguishing Element in two or more samples, through compiling exemplars, to determine if the element as expressed in the two samples is consistent with common writership or not. N.b., this use departs from that in Huber and Headrick, for whom a standard most often refers to a Sample.

Stratfordian: A person (often a Shakespeare scholar) who insists that the plays of the 1623 Shakespeare Folio and quartos were written by William Shakspere of Stratford-Upon-Avon.

Termination: The direction, force, thickness, and extension of the letter before a pen lift.

Tilde: A diacritic used in the Latin tradition to denote an eclipsed nasal after a vowel.

Varronian Chronology: A system of dating Roman history invented by Marcus Terrentius Varro (116-27 B.C.E.), which tracks the number of years since the mythical founding of Rome under Aeneas. While today considered inaccurate, in the 16th century it was considered an authoritative historical chronology for the history of Rome.

Whole Word Comparisons: When available, comparisons between whole words allow an assessment of dynamic sequencing, including the shapes of letters in context with the types and locations of their intra-letter connections.

Manuscripts Consulted

STC 2106, Folger Geneva Bible, arms and devices of Edward de Vere, 17th Earl of Oxford engraved in silver over scarlet velvet

Lansdowne MSS 6.25, August 23, 1563 letter to William Cecil.

Lansdowne MSS 14.84, 22 September 1575 letter to William Cecil.

Lansdowne MSS 14.85, 31 October 1575 letter to William Cecil.

Lansdowne 33.6 13? July 1581 letter to William Cecil.

Lansdowne 38.62 20? June 1583 letter to William Cecil.

Lansdowne 42.39 30 October 1584 letter to William Cecil.

Lansdowne 50.22 25 June 1585 letter to William Cecil.

Lansdowne 63.71 5 August 1590 letter to William Cecil.

Lansdowne 63.76 8 September 1590 letter to William Cecil.

Lansdowne 68.6 18 May 1591 letter to William Cecil.

Lansdowne 63.71 5 August 1590 letter to William Cecil.

Lansdowne 76.74 7 July 1594 letter to William Cecil.

PRO SP 12.252.69 June 13, 1595 to William Cecil

Lansdowne 99.150 25 & 27 April 1603 letter to Robert Cecil.

Lansdowne 99.161 7 May 1603 letter to Robert Cecil.

Lansdowne 99.161 19 June 1603 letter to Robert Cecil.

Huntington Lib. EL2235

Huntington Lib. EL 2336

Huntington Lib. EL 2338

Huntington Lib. EL 2344

Huntington Lib. EL 2349

Cecil papers 8.12 3 January 1576 letter to William Cecil from Siena

Worsley MS 47 (Lincolnshire Archives)

National Archives, State Papers 14/189, folio 7, A recipe 'For six Minst Pyes of an Indifferent biggnesse' Courtesy https://manyheadedmonster.com.

Appendix B: Chart of Audley End Books Containing Annotations

Annotations in 6-8 Books at Audley End: AUE (Audley End Unknown), SAY (Henry Savile), and NEV (Sir Henry Neville).						Approximate # of AUE notes
81038119	Halicarnassei Romanarum	Dionysius of Halicarnassus	Greek Folio	1546	AEU & SAY	~52
88093530	Opera	Appian's *History of Rome* Bound with Dio Cassius' *Roman History.*	Greek Folio	1551	SAY only	~1000+
88093530	Opera	Dio Cassius (1548), *Roman History*, bound with Appian above.	Greek Folio	1548	AEU onl	
88093531	Opera	Thucydides	Greek Folio	1564	AEU in Greek section; NEV in Latin section	13
81035070	Della Historia D'Italia	Guicciardini, Francesco	Italian Quarto	1580	AUE and (rarely) NEV.	~27
81038208	Opera	Tacitus	Latin Quarto	1574	AEU, SAY	~600
81034956	Discours Politiques et Militaires	Seigneur de la Noue	French	1587	AEU (limited), possibly SAY or NEV.	~5
81034957		Seigneur de la Noue	French	1587	AEU (limited), possibly SAY or NEV.	

As the above distribution suggests, of the books examined, the Audley End Unknown hand is the most widespread and NEV the least. In total number of annotations, the SAY hand may rival Audley End Unknown (AEU), since there are a very large but uncounted number of annotations in that hand throughout the Appian, but the Audley End Unknown hand is the most widely distributed throughout the books we examined.

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