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Drawing Networks in the Devonshire Manuscript (BL Add 17492): Toward Visualizing a Writing Community's Shared Apprenticeship, Social Valuation, and Self-Validation

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1. Introduction

Miscellanies and commonplace books are inherently social documents, and the task of mapping out the complex social interactions involved in the processes of manuscript composition and transmission—both material and authorial—is one that traditional scholarship has found difficult to facilitate. The challenge of representing manuscript works, especially miscellanies, lies partially in the limitation of traditional scholarly tools to render interactions in and between material and authorial space in manuscripts, and partially in the conceptual struggle to detach manuscript texts "from the fixed systems of valuation and comprehension belonging to conventions of the book and the book trade" (Rabb 353).

Recent work has emphasized the need to approach manuscripts as a "'living text open to transformations," reflecting the appropriative "creative and re-creative" attitude with which early Renaissance readers and writers considered (and indeed, produced and re-produced) texts (Chorney), as in the case of commonplace books. Further, the need to approach manuscripts cognizant of their fluidity should be coupled with sensitivity to their social components, that is, to address the private and public, communal and individual natures of these works. [1]

All of these concerns can be readily addressed by embracing the electronic medium, since it is, in and of itself, dynamic and fluid. As part of a joint pilot project with Iter and Medieval and Renaissance Texts and Studies (MRTS), we are working on print and electronic scholarly editions of the Devonshire Manuscript (BL Add MS 17492) that will be published concurrently. The electronic edition of the Devonshire Manuscript offers a valuable opportunity to evaluate the applicability and reliability of digital visualization tools, since the results of our electronic analysis can be measured against existing knowledge derived by traditional means.[2] It is our hope that this undertaking will allow us to be more confident in the results that these tools can readily deliver when we encounter an unfamiliar object. This paper begins with a description of the composition, transmission of the Devonshire Manuscript and its reception by literary scholars, and ends with a discussion of our methodology and results.

2. The Devonshire Manuscript

2.1 Significance

The Devonshire Manuscript *is* a sixteenth-century poetic miscellany; a "courtly anthology" as Raymond Southall has called it (*Courtly Maker* 15), or an "informal volume" as Paul Remley has suggested (48). It is bound in quarto, and, although physical evidence from the embossed leather binding dates it between 1525 and 1559, internal evidence narrows the dates of composition slightly. The contents suggest that the period in which the miscellany saw most intense activity in terms of writing and circulation was the mid-1530s.[3]

The manuscript was maintained as an informal volume—most likely circulated amongst a small circle of friends for private use—and consists of 114 original leaves, housing some 185 items of verse, some of which are complete poems while others are fragments and extracts from longer works. Though the majority of the items found in the manuscript are lyrical, entries also include annotative remarks, names, ciphers and various

jottings. The manuscript contains a mix of courtly poetry by the canonical early Renaissance poets Thomas Wyatt (129 items) and Henry Howard, the Earl of Surrey (1 item: "O Happy Dames"); transcriptions of the work of others or original works by prominent court figures such as Mary Shelton, Margaret Douglas, Mary Howard, Thomas Howard and, perhaps, Anne Boleyn (Southall, "Devonshire" 143); verses identified as written by Anthony Lee (1 item ["AI" has 3]), Richard Hatfield (2 items), Edmund Knyvet (2 items), Thomas Howard (3 items), Mary Howard (1 item), and Henry Stuart, Lord Darnley (1 item); transcriptions of portions of medieval verses by Chaucer (11 items), Hoccleve (3 items), and Roos (2 items); and, some 30 unidentified or unattributed pieces. The text of the manuscript reflects the interests, activities, and opinions of a dynamic group of men and women operating in and around Anne Boleyn's circle. At the time during which most of the interactions were recorded, Thomas Wyatt was already an experienced courtier who had introduced his own brand of politic translation of Petrarchan and contemporary Italian models into courtly poetics. Mary Howard, in her mid-teens in 1534, was married to Henry VIII's son Henry Fitzroy and had entered into Boleyn's circle, possibly bringing the initial manuscript with her since the original bindings bear the initials "MF," Mary's married name. Mary would also enter her brother Henry's poem "O Happy Dames" into the manuscript after this eventful decade. In the mid-1530s, Anne Boleyn's cousin Mary Shelton was in the same circle; indeed, Shelton was chastised in 1535 by Boleyn for entering into a book of prayers the sort of lyrical-poetical "trifles" one finds in the manuscript (Remley 65 n19). Thomas Howard, half-brother to the Duke of Norfolk, would die in the Tower in 1537 after being imprisoned for his private betrothal in 1536 to Margaret Douglas, a lady of the court and part of the Boleyn's circle (in addition to being the niece of Henry VIII). Lastly, the initial center of the circle involved was Anne Boleyn, at the time just recently married to Henry VIII at the beginning of this decade. While activity in the manuscript relating to the circle that surrounded Boleyn would, of course, lessen after her execution in 1536, the fact that the latest datable entry is that of Douglas' son, Lord Darnley, suggests that the manuscript stayed in Douglas' possession after its heyday.

Literary history has privileged the Devonshire Manuscript as a main source of Thomas Wyatt's poetry since G. F. Nott borrowed it from the Devonshire collection to prepare his influential edition of the works of Wyatt and Surrey.[4] Early critics like Nott tended to situate Wyatt's poetry topically with little interest in the other contributors to the manuscript, [5] who were regarded as copyists practicing a mechanical task "on the order of a handwriting exercise" (Remley 57). The manuscript's importance remained couched in these terms until the middle of the twentieth century, when scholars such as Raymond Southall, John Stevens, Ethel Seaton, and Richard Harrier took an interest in the manuscript as the product of multiple authors, as individuals representing their private and public concerns in ways allowed by the social context of Henry VIII's later court. [6] While Wyatt's presence was by no means diminished by this new focus, the contributions to the manuscript by Mary Shelton, Margaret Douglas, Thomas Howard, and others were increasingly recognized as important and worthy of scholarly attention.

Topicality continues as a unifying factor in the treatment of the Devonshire Manuscript in the edition currently in preparation, although the circle of critically acknowledged contributors is enlarged to incorporate more than just the contributions of Wyatt and Surrey.[7] Scholarly research of the later twentieth century situated more firmly such critical focal points on topicality: movements in both literary criticism and bibliography[8] demonstrated a renewal of interest in the social context of Renaissance literature and a concomitant concern with the conditions of literary and textual production. Scholars accepted that an understanding of the rich and diverse connections that existed between poetry and power in English Renaissance society was central to a critical comprehension of its literature. At the same time, critics demonstrated that the focus of such literary study needed to be broadened beyond attention to canonical figures alone.[9] Further, scholars acknowledged that the key to determining the poetic-political significance of literary works lay in their currency within the very circles that the contents of those works addressed. Thus, courtly manuscript miscellanies and poetic anthologies such as the Devonshire Manuscript are viewed as "represent[ing] the meeting ground of literary

production and social practices" (Marotti 212), and are understood to have the potential to reveal as much about the dynamics of poetry and politics as they do about the conditions of literary production in the early Renaissance—a process that Seth Lerer has shown to encompass the realms of public and private, blurring many preconceived notions about literary materials by exposing "confusions and conflations among poetry and drama, private letters and public performances" (38).

In addition to receiving new and significant attention because of the way in which its contents were seen to reflect the interactions of poetry and power in early Renaissance society, the Devonshire Manuscript was also recognized as a document that reflected the concerns associated with gender and literary production of the time.[10] The Devonshire Manuscript is one of the earliest examples of explicit and direct participation of women in political-poetic exchanges, and much of the recent work on the manuscript has focused on it as the product of a multi-gendered coterie, a primary site of women's involvement in the poetic-political world reflected in the early Tudor lyric.[11] Work such as this suggests the continuing significance of the Devonshire Manuscript for modern readers.

2.2 People and Networks

While we assume and appreciate its importance to Wyatt and his canon, our focus in preparing an edition of the Devonshire Manuscript has extended to all of the identified and unidentified hands and social authors as represented in the manuscript—that is, those copyists, annotators, and arrangers associated with Boleyn's circle in the mid-1530s. In other words, we are interested in the manuscript as a document that not only contains the poetry of Wyatt, typically for use in a collation of witnesses found in Wyatt's Egerton Manuscript and elsewhere, but as a document whose contents vividly reflect the interactions of a number of important members of the courtly community that produced it. Just as some early critics worked diligently towards interpreting Wyatt's early works within the context of his life at the time in which he wrote them — chiefly as circulated poetic responses (a type of epistolary politics) to aspects of his relationship with Anne Boleyn [12] — so too have studies from the middle of the twentieth century to our own time sought to identify how the various poetic utterances of the several identifiable contributors to the Devonshire Manuscript resonated with the events of their lives.

The best known of the interactions recorded in the manuscript is the love poetry exchanged between Margaret Douglas and Thomas Howard during the period of time when they were threatened, separated, and imprisoned for their marriage contract. The exchange takes place over several poems that may well be original, or at least original imitations, combined with has been characterized as "a pastiche of lines from Chaucer's *Troilus and Criseyde*" (Remley 51).[13] Less well-documented by recent work, however, is the way in which the majority of the individual entries in the Devonshire Manuscript have the potential to relate to one another, as well as to contemporary events beyond the borders of the manuscript itself.[14]

Perhaps the most noteworthy aspect of the manuscript, quickly apparent to those who come into contact with it, is that the Devonshire Manuscript is not a professional manuscript but, rather, the product of what we might call "educated amateurs." The manuscript text lacks many of the features that one would expect from professional copyists: some pages are ruled, but many are not (though a good number certainly might have benefited from the practice); some of the roughly 20 hands are even and regular,[15] while others are only regular in their irregularity (Baron). Indeed, one of the major reasons why more research has not been done on the Devonshire Manuscript is that accurate transcription has proven quite difficult. While some 140 entries are copies of extant or contemporary works (129 attributed or attributable to Wyatt) and bear the signs of copying, the majority of the pieces may reflect the work of local amanuenses and secretaries with little professional regard for the standards we expect in a presentation-copy manuscript.[16] A full half of the manuscript's scribes (Hands 1, 3, 4, 5, 6, 8, 9, 10, 11, and MF) dedicate themselves to copying extant pieces, while another five (Hands

1.1, 2, 7, TH2, and MD) enter a mix of extant material and material that appears to be unique to the manuscript, with the remaining five (Hands 12, 13, HS, MS, and TH1) entering original materials alone.[17] The work of those ten hands entering material that has the potential to be original to the manuscript amounts to some 45 pieces (15 identified and/or attributed, 30 not). [18]

Save for the work of Mary Fitzroy, it is chiefly those identified amateur hands that have entered original work into the manuscript—namely, the group consisting primarily of Margaret Douglas, Thomas Howard, and Mary Shelton. One finds many features that suggest the personal engagement, immediacy, and spontaneity of this group in the original pieces, in the original responses to work known to be extant at the time of the manuscript's main period of activity, and also in some of the extant works that this group excerpts and adapts from others to fit personal circumstances. Speaking to this quality of personal engagement are a number of examples: the manuscript directly refers to Mary Shelton, for instance, as an audience to the text, and attributes various annotations to her;[19] Margaret Howard, too, is mentioned as participant, contributor, and audience.[20] The manuscript contains a direct address and plea by Margaret Douglas to her uncle and ward, Henry VIII;[21] an implied association by Thomas Howard between Margaret Douglas and Chaucer's Criseyde;[22] and a poem ("My heart is set nat to remoue") by Douglas that exists in two versions, one expressing undying love for (presumably) Thomas Howard, and the other containing an additional stanza indicating acceptance of the heart-breaking influence on this love of those who oppose the secret romance. Other personal elements in the manuscript include a cryptic suggestion of allegiance (as tradition has it) from Anne Boleyn to Thomas Wyatt; [23] and a notation reflecting the solidarity between erstwhile sisters-in-law Mary Howard and Margaret Douglas.[24] Less personal, but equally important, are the attributions of this group's copying of original pieces to "anthony lee" (10v; "A. I." [22r]), "Rychard Hattfeld" (18v), Thomas Howard ("T h ho" [1r]; "T. h." [29r], "T. H. / T hou" [46r]; "T. H." [47v]), Edmund Knyvett ("E knywett" [59v]; "E K" [63v]), the less specific "Ihon" (22v), and the mysterious "s a i r" (24v).

In short, the contributors to (and participants in) the manuscript speak to each other in the poems and to those beyond their select circle. Often this conversation takes place in extant verses adapted to purpose; other times it unfolds in what we must (for lack of any external evidence) assume are original pieces. At times, specific topical, personal, and situational references can be cryptic. In addition to the example mentioned above—the poem "am el men" which requires the first and fourth characters of each line to be switched for it to make sense (so the first line reads "a lemmen")—there is the poem "Sum*m* say I love," which appears connected to Mary Howard:

> [...] sum*m* say I love sum say I moke
> sum*m* say I can not my selfe refrane
> Sum say I was wraped in ~~myn~~
> in a whoman s~~e~~ mok sun say I hau plesur*e*
> sun I hau payn
> yt on my fayth yf ᵞᵒʷ wel be lewf me
> non knw so wel as I wher my shwe
> grewe me (58v)

It is not entirely clear what this verse refers to, but it appears in a place in the manuscript where there is a great convergence of identified hands. Less cryptic is a reference in Thomas Howard's "To yowr gentyll letters an answere to resyte," in which those who interfere in the speaker's love relationship with (presumably) Margaret Douglas are wished to be on "goodwyn sandys" (29r). The Goodwin Sands refers to a large bank of sand shoals, famous as a site of shipwrecks, off the coast of Kent. To "set up shop on Goodwin Sands" was proverbial for hopeless endeavor and running aground (Tilley S393; Smith and Wilson S393); thus Howard expresses the hope for the efforts of those seeking to hinder his relationship with Douglas to be thwarted.

In addition to the verse entries described above, contributors to the Devonshire Manuscript interacted with one another through scribal annotation. These marginal respones are, at times, quite personal in nature. For example, in the margins of Wyatt's "Suffryng in sorow in hope to attayn" (6v-7r), Douglas writes "fforget thys," to which Shelton responds, "yt ys wor[t]hy." Just above her attribution on the facing page Shelton adds, "ondesyard sarwes requer no hyar." Likewise, in the final lines of an unattributed poem, "The pleasaunt beat of swet delyte dothe blynd / our eyes" (66r), which read "whereas wysdome the soft Iudge doth raign / p*rove* wyt avoyed*es* all daunger breding pain," Douglas writes the word "doutt," crosswise on the word "danger".

In stark contrast to the impersonal and detached engagement of the professional, the examples given above and others like them suggest the personal interaction and engagement of a small, select group, intending a small, select readership—one that would understand the nature of the document, the allusions made and the interplay of the several dominant scribal voices therein.[25] Indeed, there is a chief allusion-maker and presiding voice over the manuscript, and that voice is Margaret Douglas, who acts as scribe for 16 pieces (across 9 pages) and has an identifiable presence—as annotator, corrector, and demarcator for half the hands present in the manuscript (H1, H2, H3, H4, H7, H7.1, H8, H13, and MF)—on at least 50 leaves of the total 114. While she copies only 5 poems by Wyatt, Douglas marks another 29 of his with a terminal "s," and another 17 with the annotation "and thys," which, as Remley has suggested, may relate to another in-text annotation of hers, "lerne but to syng it" (81r). Her own scribal contributions are treated similarly in turn: they are corrected—albeit, only a very few times—by an unidentified hand which is possibly Thomas Howard's, and they are also annotated twice. "In the name of god amen" is added to her rendition of Wyatt's "to my meshap alas I ffynd" (42r), and on her poem "the sueden ghance ded mak me mves / off hym that so lat was my ffrend" (67v), Mary Shelton comments "hape hawe bedden / my happe a vaning," adding a stylized monogram with her own initials ("S" overwriting the middle descenders of a capital "M").

In writing both original and familiar verse to one another, annotating and distorting entries, and teasing and attributing each other, those responsible for the works in the Devonshire Manuscript interact in ways that capture our attention and literary-critical imagination. For those in manuscript studies this may not seem to be such a shattering observation; indeed, on the surface, it is not earthshaking to report on this type of scribal interaction. That said, what is notable is not that those participants interacting with one another in the Devonshire Manuscript do it well but, rather, that this unique group of men and women were able to do it at all.

As fascinating as these exchanges are, our current concern has little to do with listing about the details about what, how, when—and eventually perhaps why—these interactions take place. Rather, our focus is on determining how one might best approach this sort of scribal interaction analytically. Those engaging in traditional literary studies might be content with the task of identifying these scribal interactions and expounding upon their significance, but there is much more that can be done. For these new directions, as digital humanists, we turn to other fields of inquiry that have sought to analyze different materials that feature similar patterns of exchange.

3. Methodology

3.1 Overview

As suggested above, the traditional method of approaching social interaction in manuscripts involves listing instances of interaction and then expounding on their significance. However, other fields of inquiry have already sought to analyze different sorts of materials with similar patterns of exchange, and these have the potential to offer insights that could complement ways in which we already approach our analysis of social interactions. The study of communication networks in online chat-rooms or

forums, spaces that bear a striking resemblance to that of the culture of early manuscript miscellanies, provides one such approach. In fact, modern writing environments and older ones are structurally similar: the patterns of annotation and response in the Devonshire Manuscript resemble a conversation among a circle of friends and relatives in written form, not unlike an archive of a series of discussions on an electronic mailing list.

As an experiment, we applied existing tools for visualizing communication networks to the Devonshire Manuscript. The manuscript contents were transformed into an XML-encoded text that could be easily manipulated to satisfy our particular analytical needs,[26] and the visualization tools were adapted to a technical structure that would best suit the requirements of the experiment. The first tool we tested was PieSpy, an analysis tool originally designed for use on an active IRC (Internet relay chat) channel in which a real-time conversation is taking place between channel users. Our strategy was to simulate the conditions of a real-time chat room by injecting the manuscript text from the transcript file, line by line, into the IRC channel, with each hand of the manuscript seeming to "speak" to the rest the group.[27] PieSpy operates by interpolating channel activity into diagrams designed to reflect the strength of relationship between each user in the channel. The diagrams generated contain clusters of nodes joined together with lines, with each node corresponding to a user active within the channel. Through the progression of the Devonshire Manuscript, the blue lines connecting the hands to one another grow thicker or slowly fade away. The connections between the nodes, and the position of each node relative to the others, form the crux of the analysis. Those users who seem to be addressing one another are shown to have a stronger relationship to each other than to others in the channel, indicated by the proximity of their respective nodes and the thickness of the line joining them together. Similarly, those users who participate more in the ongoing conversation are given a more dominant role in the channel than those users who say relatively little, and are shown to be nearer the centre of the cluster of user nodes. The end product of using PieSpy to analyze the manuscript transcript is a collection of roughly 200 diagrams that can be strung together into an animation to demonstrate visually the interaction between the contributors to the manuscript as it evolves and progresses from leaf to leaf.

The second tool tested was Simile Timeline, a web-based resource developed by the Simile group at MIT for the visualization of time-based events. Timeline allows users to physically manipulate a two-dimensional chronology by moving forwards and backwards in time by dragging with the mouse. Events can be represented as a single point (such as a date of birth) or as a bar (such as the amount of time working on a project). We adapted Timeline to visually represent a continuum of pages rather than dates: bars were modified to represent a continuing hand over multiple pages, while single points were tailored to denote hand markings of less than one line or annotations. We have also modified the software so that a simple mouse-click on a bar can show the first line of the verse it represents, and a click on a point reveals that particular annotation made by a scribe.

The last tool tested, TextArc, was designed and developed by W. Bradford Paley as a Structuralist text analysis tool to visualize the distribution of words in texts. It draws the entire text in two concentric circles: the first is a line-by-line rendition of the entire text positioned around the outside of the screen in a one-pixel font; the second is a word-by-word representation of the text just inside the first circle of lines. Even at this scale, the typographic layout of the lines conveys some of the structure of the text and gives context to the individual words found in the space created by the circle.[28]

The result of the experiments with these three visualization tools was to highlight particular features of the manuscript. [29] As outlined above, the visualization tools emphasize the shared apprenticeship of the group—especially the women—in creating the manuscript miscellany, as the various corrections, emendations and annotations of the different participants are brought to the fore. The visualization tools also draw attention to aspects of social valuation in the manuscript, as the interaction of the contributors seems to focus on shared personal and political concerns in a court where privacy was often lacking. The continual vying for

patronage and the omnipresence of spies and rivals made the concealment and revelation of personal information to a select group an important concern. Furthermore, the communal space created by the manuscript encouraged women to freely reply to and interweave their voices with those of male contributors. The visualization tools also reveal the importance of self-validation in the Devonshire Manuscript. In the printed miscellanies that emerge later in the period, contributions by women to the conservation and creation of works—either through their epistolary correspondence, their effort in preserving oral or written texts, or their appropriation of text for their own use—become silenced. Applying visualization tools to the Devonshire Manuscript draws attention to the participation of women by positioning their contributions on the screen in relation to one another and in relation to the men with whom they interacted. Through the application of these digital tools, researchers are able to make information that has disappeared with the printed page resurface, represent information that would be time-consuming and even impossible to render manually and, to quote Kathryn Shevelow, provide for "a more encompassing view of writing as a broadly cultural process" (19).

3.2 Shared Apprenticeship

PieSpy and Simile Timeline, when applied to the Devonshire Manuscript, draw attention to the social interaction at work on the pages of the manuscript and to the involvement of women in its composition and circulation. Though there is indication of cooperation between the sexes, those who circulated and compiled the Devonshire Manuscript were mostly women who belonged to the circle surrounding Anne Boleyn. The movement toward a new humanist scholarship and the growing interest in the education of young people, especially of women, as well as the courtly fashions of the day—pageants, lyrics, and love games—created the backdrop to the stage on which Anne Boleyn, Margaret Douglas, Mary (Howard) Fitzroy and Mary Shelton evolved. The education of the female circle of compilers of the Devonshire Manuscript was privileged in comparison to that of most women during the Tudor period.[30] These women had access to the best women's schooling of their day, but despite these advantages, they were still subject to constraints that dictated their roles as both private and public figures. The new humanist education, championed by such figures as Juan Luis Vives, proposed a programme to focus women's attention on principled spiritual works. As Valerie Wayne has noted, Vives' image of a literate woman is not one who writes lyrical verse, but one who copies "some sad, prudent, and chaste saying from the Bible or a philosophical treatise [...] writing it over and over again" (21). According to Wayne, "the purpose of [such an] activity was not to communicate but [for a woman] to learn better her duty, and Vives did not suggest a larger purpose for handwriting elsewhere in his book" (22). Thus, despite their exceptional education, this group of women required guidance and direction when creating their court album.

Evidence of apprenticeship—members of this select coterie correcting one another and annotating one another's work, with Margaret Douglas acting as the *grande dame* of the endeavor—is revealed in the "snapshots" of the conversation in the Devonshire Manuscript created with PieSpy. **Figure 1** is a snapshot of the conversation as it has progressed up to folio 70r as generated by PieSpy. This particular example demonstrates Margaret Douglas' involvement with many of the participating hands (unnamed scribes are numbered whereas identified scribes are referred to by initials). The snapshot clearly locates Douglas as a central point in the interaction at this point; as outlined above, paleographical analysis has confirmed that she acts as scribe for 16 pieces (across 9 pages), and has an identifiable presence as annotator, corrector, and demarcator of half of the hands present in the manuscript (as outlined above), and on at least 50 leaves of the total 114.[31]
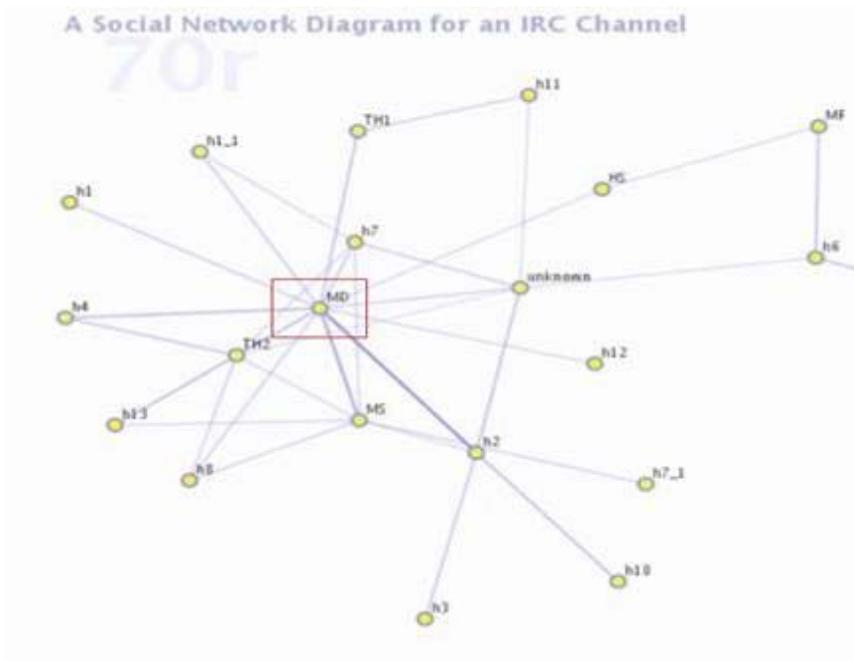
Figure 1

The Simile Timeline demonstrates the frequency of Douglas' interactions by placing the annotations ascribed to her hand as dots along a solid line that represents the activity of the principle hand employed in entering text over several pages. **Figure 2** illustrates Margaret Douglas' several interventions on the pages where Hand 2 is very active. Other instances of corrections and annotations by other hands are also apparent. Whereas PieSpy focuses on the strength of relationships between participants, Simile Timeline focuses on the interactions themselves, identifying the kind of text produced as well as positioning and qualifying the participant's involvement. For instance, we can determine how many times a scribe intervenes as an annotator and, in turn, who intervenes in this scribe's entries.[32]
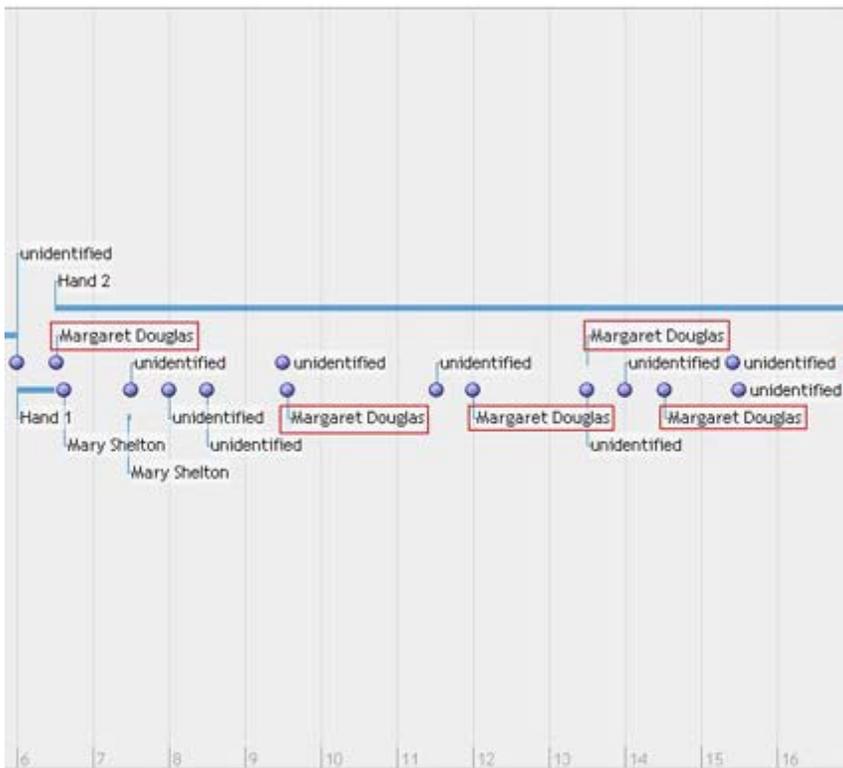
Figure 2

In **Figure 3**, we see that Margaret Douglas' entry, "Fanecy fframed my hart ffurst" (61v-62r), has at least five corrections made by an unidentified hand. By clicking on the node, we can make a quick assessment of the kind of annotation made by this unknown hand. [33] Though these tools cannot tell us who these unidentified hands are, they can give us a better understanding of the relatively complex relationship between the different scribes.
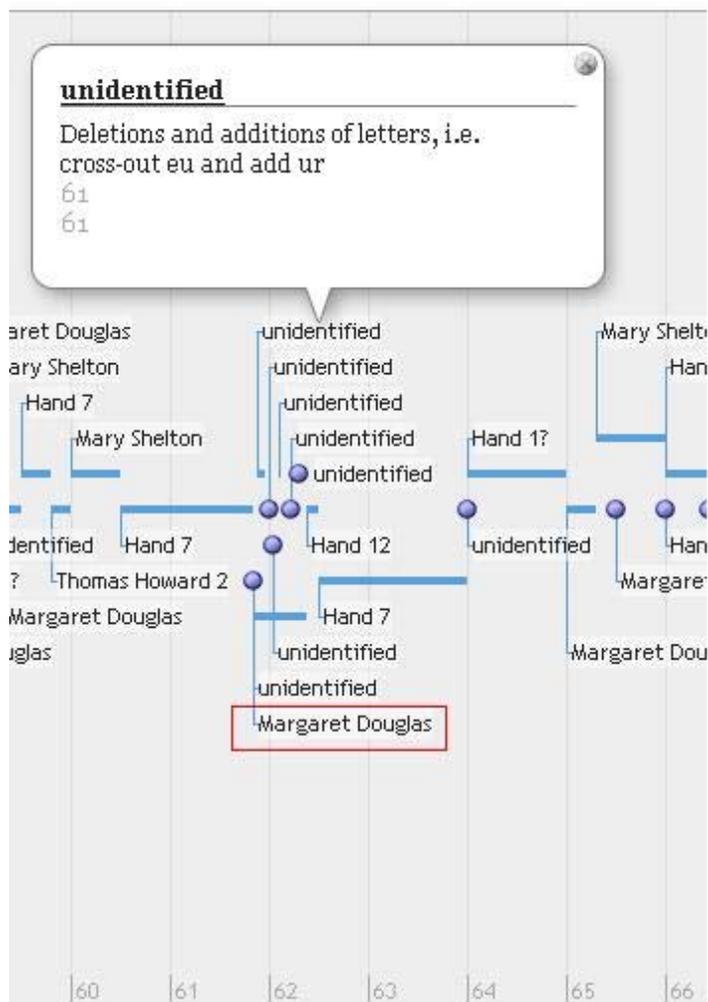
Figure 3

PieSpy can render the intricate representation of entries and annotations as illustrated in **Figure 3** into a simple diagram that demonstrates the relationship between Margaret Douglas and various scribes (**Figure 4**). Textual analysis confirms that Margaret Douglas and Hand 2 are strongly linked in this section of the manuscript, and this is reflected in **Figure 4** where the frequency of their interactions are indicated with a heavier line weight connecting them. Indeed, this relationship extends beyond this section: a snapshot generated by Simile Timeline (**Figure 5**) demonstrates that Douglas and Hand 2 remain strongly linked throughout the manuscript, which suggests that Hand 2 should be part of the historical record of Douglas' circle.
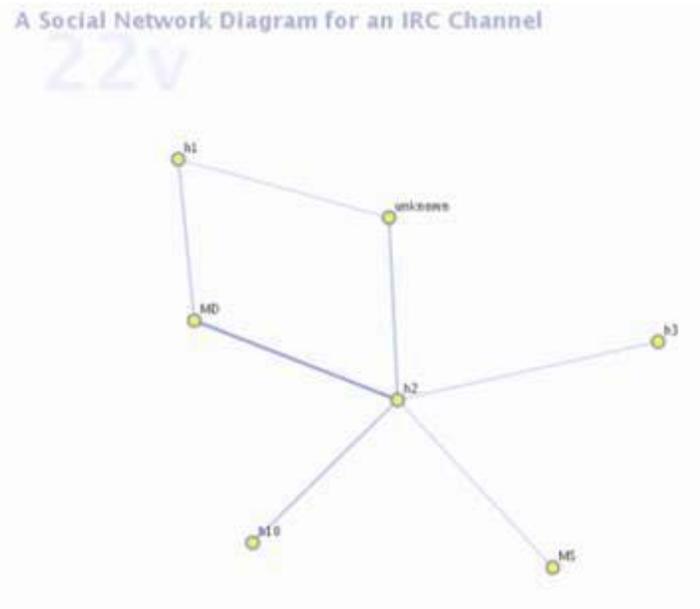
Figure 4
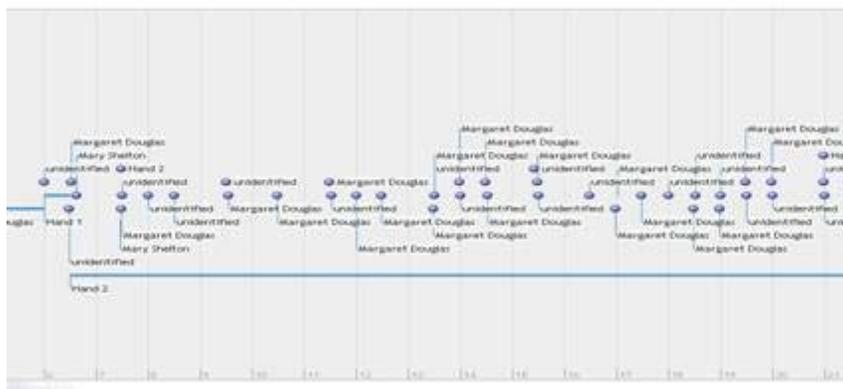
Figure 5

3.3 Social Valuation

So far, these visual representations have demonstrated the types of interactions between the various participants in the composition, compilation, and circulation of the manuscript. Another interesting aspect of the relationship between the scribes that these tools bring forward is the circle's response to entries and annotations, a response which is, at times, quite personal in nature.

Playful Interaction

The examples of social interaction in the Devonshire Manuscript reflect the concerns of a select group of court members living in an environment filled with tensions. As Heale has suggested, "poems in manuscript circulation were not necessarily, or primarily, valued as biographical expressions of a known author, but as reusable texts, belonging to a shared culture" (*Wyatt* 4). The contributors to the Devonshire Manuscript make use of the verses they enter in creative ways: as playful interaction, as serious reflection, and as a space for personal expression.

Heale argues that there is a "shared enjoyment" among the contributors of

this album, even a playful interaction between men and women in some parts (*Wyatt* 312). When we look at a section of the manuscript that is particularly "busy" with the Simile Timeline (such as **Figure 5** above), we see a confirmation of this playful interaction in a portion of the text limited to just a few contributors (including two identified women) that has concentrated participation. PieSpy (**Figure 6**) gives an uncluttered view, highlighting Margaret Douglas' and Mary Shelton's involvement with four hands—H2, H3, H10 and Unknown.
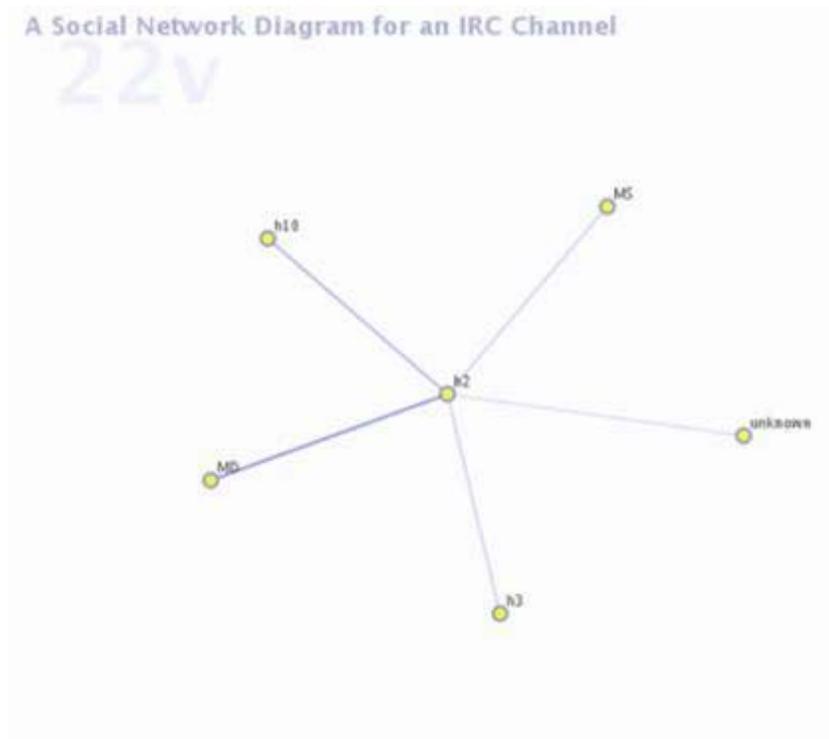
Figure 6

When applied to this section, TextArc demonstrates that some key words of the playful interchange—for instance, "offend," "displease," "unkind," "falsehood," "foresworn," "husband," "shrewdness," "complaint," "prudence," "patience," "folly," "cruelte," and "meekness"—appear mainly in this section of the manuscript. TextArc provides data here that would be difficult to compile manually—for instance, the plural form "women" is particularly linked to this section (**Figure 7**) whereas the singular "woman," as well as "man" and "men" has a central position on the TextArc screen indicating that these words have a more general distribution throughout the manuscript. Why do the contributors to this section refer to the plural "women"— thus implying reference to "womankind" and not to a particular woman—more specifically here? And why are these particular nouns and adjectives, which should be found more evenly distributed in a commonplace book filled with lyrics of the courtly love tradition, instead linked strongly to this section of the manuscript?
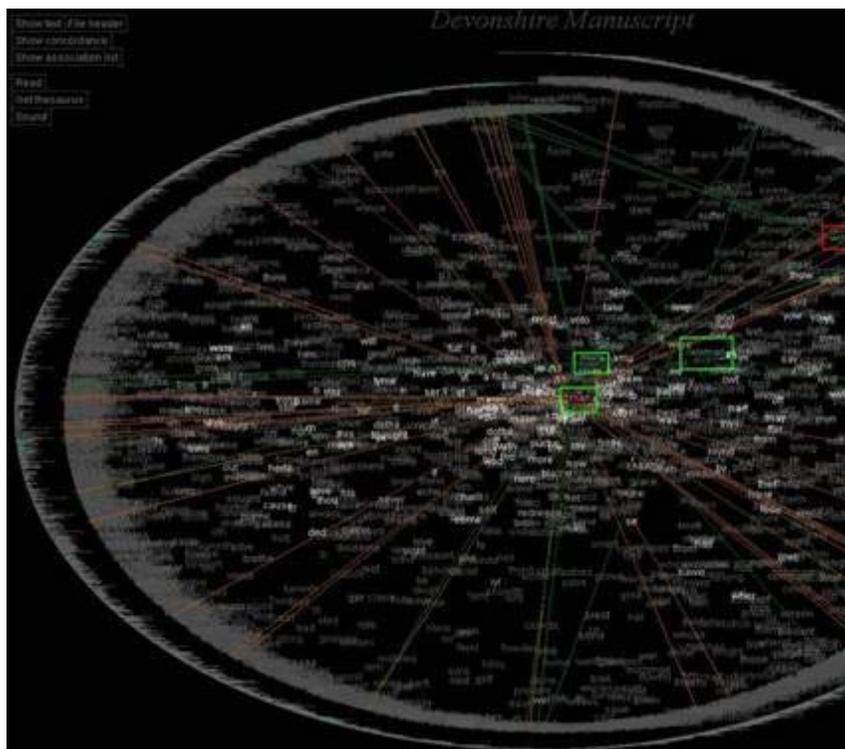
Figure 7

Though the trope of the unrelenting, cruel and unkind mistress and the patient, yet complaining, lover is found throughout the Devonshire Manuscript, seen through these digital tools this section seems particularly bent on a misogynistic perception of women in general. Textual analysis confirms the section's misogyny: H2's rendition of Wyatt's "Farewell all my welfare" (9v), a poem from a woman's perspective about the faithlessness of a male lover and lamenting false pledges, is followed by a text attributed to Anthony Lee about a cruel, unrelenting woman beginning "May not thys hate from the estarte," (10v). This is followed in turn by several other pieces copied from Wyatt about unkind female lovers—"Yff I had sufferd thys to yow vnware" (11r), "At most myscheffe" (12r) and "My lute awake performe the last labor" (15v) for instance—with an interesting punctuation poem appearing a few pages later attributed to Richard Hattfield ("All women have vertues noble & excellent") which plays on the double entendre of blame and praise of women (18v).

The visualizations produced by Simile Timeline (**Figure 8**) highlight the abundance of a symbol resembling the letter "S" in the hand of Margaret Douglas in the margins of this section. Though we do not yet know the significance of this marginal annotation, it indicates to us that Douglas read and seemed particularly interested in the verses on these pages. Heale may be right in believing that the women who read and wrote in this manuscript "seem to have stomached, with spirit, some highly misogynist entries" ("Women" 313).[34]

Figure 8

The Douglas-Howard Affair

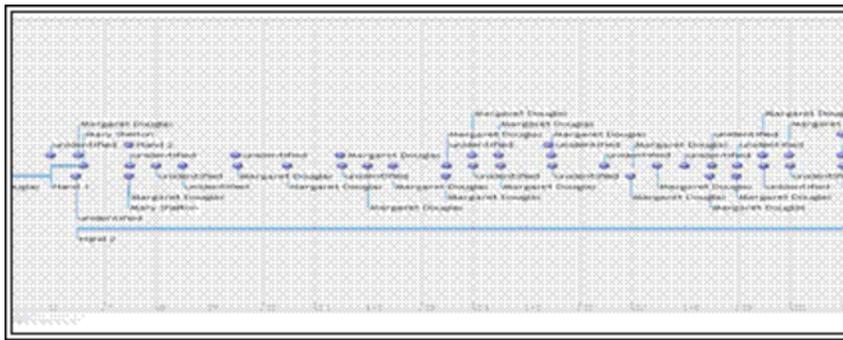As Henry's niece, Lady Margaret Douglas was part of the court and a target for an advantageous marriage. When Queen Anne's court was established, Douglas was appointed as a lady-in-waiting where she met and was courted by the Queen's uncle, Lord Thomas Howard. By the end of 1535, Thomas and Margaret had agreed to wed. (There is controversy over the nature of the marriage – whether it was indissoluble [consummated], or formally contracted.) When Anne Boleyn was charged with adultery and treason in May 1536, her daughter, the Princess Elizabeth, became illegitimate. Earlier, Princess Mary had been rendered illegitimate by the annulment of Katherine of Aragon's marriage to Henry VIII. This turn of events transformed Douglas from simply a good marriage prospect for the Howards into the heir presumptive to the throne. While Henry may have encouraged the original courtship between Howard and Douglas, the discovery of their marriage contract in July 1536 resulted in their arrest and imprisonment in the Tower of London. Howard was attainted—condemned by decree without trial—on July 18, 1536. He was sentenced to death, although the sentence was not carried out. By the end of the year, Douglas had been removed to confinement at Syon Abbey, where she eventually renounced her erstwhile husband. The King released her on 29 October 1537, while Thomas remained in the Tower where he died of an illness two days later. With the birth of Edward VI as a legitimate male heir and the death of Howard, Henry felt that Douglas was no longer a "valuable and dangerous pawn in the succession" (Head 15).

Though earlier studies of courtly love games (such as Stevens) hinted at the desperate lack of privacy at court and the need for poems of the sort found in the Devonshire Manuscript to communicate by concealing information from certain individuals, later critical attention was focused resolutely on the subversive agenda of courtly poetry. Harold Love, for example, maintained that manuscripts were the media of choice for making available privileged information meant for a select audience, with the additional effect of promoting allegiances within groups of individuals with similar values and ideals (177). There is little doubt that an extensive, even elaborate, interaction spanning forty-two poems between Douglas and Howard was such a correspondence, a conversation conducted in verse and coded with poetic metaphor between the pair of unlucky lovers. For instance, Howard draws an implied comparison between Douglas and Chaucer's Criseyde. In Chaucer's *Troilus and Criseyde*, the name "Criseyde" appears in the line "Iff I forgo that I so dere haue bought / Syns ye Criseyde and me haue fully brought" (Book IV 289-90) and "Flee forth out of myn herte, and lat it breste, / And folwe alwey Criseyde, thy lady dere" (Book IV, 805-6). In his transcription of the same verses in the Devonshire Manuscript, Howard leaves a gap instead of entering the name "Criseyde," rendering the lines as "Syns ye _____ / & me haue fully brought" and "and folowe alwaye _____ thy lady dere" (29v). The metre and sense requires the reader to insert a name and, given Howard's circumstances as we know of them, the name "Margaret" fits. If we accept that this indeed is the case, Douglas is represented in these intentional omissions—these deliberate gaps and silences demonstrating the close association between her life and the circumstances of the inscription, compilation, and circulation of the manuscript.

Another poem, "My heart is set nat to remoue," this time by Douglas, exists in two versions: one an expression of undying love (presumably) for Howard (58v), the other containing an additional stanza suggesting acceptance of the heart-breaking influence of those who oppose the secret romance (65r). As with the example of the adaptation of Chaucer by Howard to demonstrate his love for Douglas during their separation, here Douglas demonstrates the same for him. Again, the meaning of the poem is sharpened by an awareness of the biographical circumstances that may have prompted its composition. In the poems, Douglas seems to be vowing her constancy to her mésalliance with Howard in the face of the disapproval of her uncle and guardian, King Henry VIII. Political reality may have dictated the first line of the fourth stanza, "do what they wyll and do ther warst," and the additional stanza in the variant entry completes the symmetry of the poem poetically, demonstrating her understanding of the affair's consequences.[35]

To reflect her difficult situation, Margaret also adapts an unattributed poem. In "the pleasaunt beat of swet delyte dothe blynd / our eyes" (66r), as discussed above, she writes the word "doutt," crosswise, on the word "daunger" in the final lines of the poem, which reads: "whereas wysdome the soft Iudge doth raign / there wyl avoyedes all daunger breding pain." Where delight blinds and makes one embrace a foe, yet "will" should make one avoid the disdainful lover ("daunger") that breeds pain. Douglas changes "daunger" to doubt and thus changes the last line to mean the will should be wary of doubt that causes pain. This significant change might be interpreted as characterizing her feelings during the affair with Howard—her principal care seems to be with continued certainty of her lover's steadfastness.[36]

Considering the textual evidence, one might assume that the hands of Margaret Douglas and Thomas Howard would be directly linked frequently. However, the visualizations of the manuscript interactions generated by PieSpy reveal that these links are not as numerous as might be anticipated. In **Figure 9**, Howard is surrounded by H3, H4 and unknown, whereas Douglas interacts with H2, H3 and indirectly with H10, hands which are seen throughout the visualizations as part of her circle. Perhaps Howard may not have had the same physical access to the places where the manuscript resided since, as far as biographical research has established, the scribal circle seems to have centered on the women of the court, and it may have been circulated primarily among them.
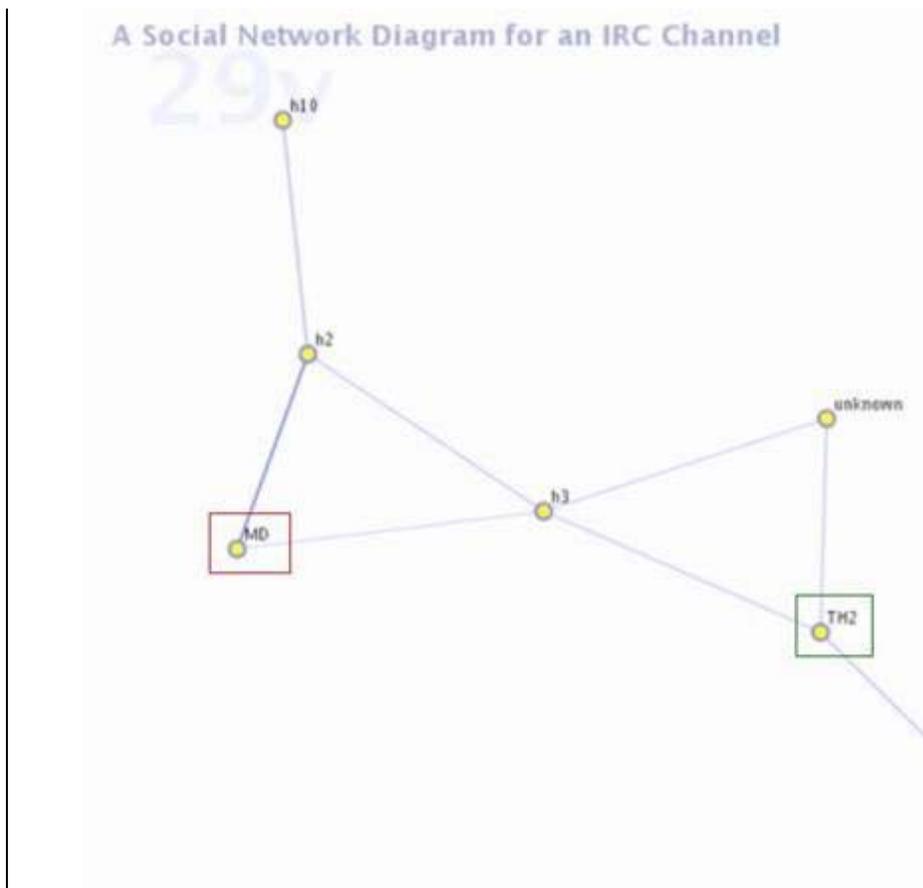
Figure 9

However, the verse entered by Howard on the pages leading up to this point focus on his predicament, and on the fact that the lovers' situation is well-known to this coterie. In fact, Howard makes it clear in his poem "Who hath more cawse for to complayne" that the injustice he and Douglas are suffering is well known to others around him. He makes obvious his concern with being powerless in this instance: "I can not optayne that ys my none / Wych cawsyth me styll to make great mone / To se thus ryght with wronge ouerthrowne / as not vnknowne / It ys not vnknowen how wrongfully / The wyll me hyr for to deny" (28r). Other members of the coterie seek to protest the unjust treatment of the lovers. One annotation is particularly resonant when read in this light: an unidentified hand adds "amen" after H1's transcription of a poem ("I lowe lovyd and so doithe she") about a couple in love but kept apart by others. The last lines read, "but they that causer is of thes / of all owr cares god send then part / that they may knowe what greve it es / to lowe so will and leve in smart" (6r). Apparently the members of the coterie involved with the Devonshire Manuscript were responsive to the plight of Douglas and Howard, which is suggested by the hands surrounding Howard on the PieSpy visualizations.

Shelton's and Douglas' verses together on 58r to 59r, and again on 65r to 68v, appear to support one another in similar themes. They lament the passing of happier times ("When I bethink my wontet days" [58r, 59r]), profess steadfast love in the face of adversity ("My hart is set not to remove" [58v, 65r]; and "Lo in thy hat thow hast be gone" [59r]), and express the need to conceal (and perhaps the difficulty of concealing) one's true feelings ("I am not she be prowess off syt" [65r]; "Myght I as well within my song be lay" [65v]; and, "To cowntarfette a mery mode" [65v]). Interestingly, Douglas and Shelton copy the same poem, "When I bethink my wontet days" (58r, 59r), almost identically except for spelling variations, as if they were echoing one another's poignant sorrow over the loss of happier times and the "wery days / that [were] apoyntyt to be" theirs (58r).

The PieSpy visualization of folios of 58r and 65v (**Figure 10**) shows the strong link between Douglas and Shelton and the more distanced link between Douglas and Howard. Though there are many instances in which Douglas and Howard are connected, it is interesting to notice the supportive network that is revealed clearly in the visualizations.[37] Thus, by demonstrating the intensity of interactions between certain individuals, the types of interactions in certain sections, as well as the themes that are particularly conspicuous, these digital tools can visually highlight areas that might be of interest for further investigation.
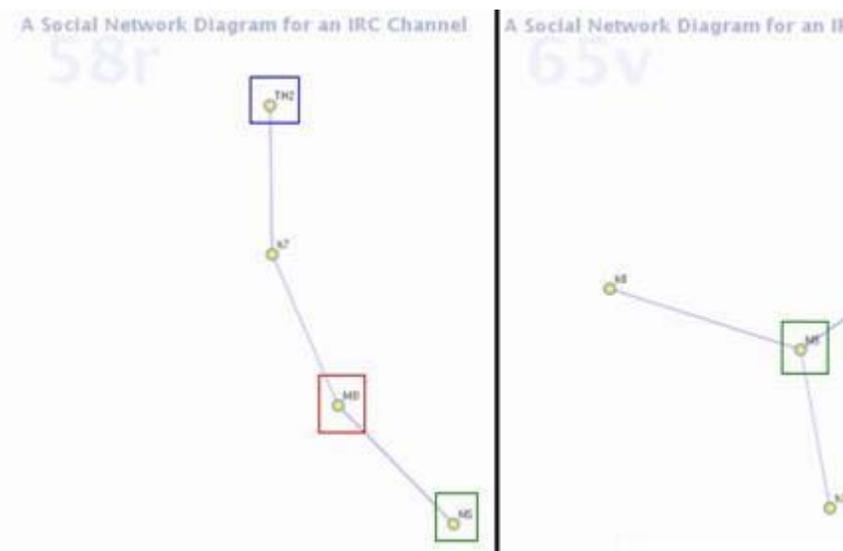

Figure 10

3.4 Personal Validation

The networking images generated with PieSpy and Timeline visually manifest the links between the various individuals engaging with the Devonshire Manuscript materials as well as highlight salient features of those interactions. However, these visualizations also position the nodes that represent these individual participants at the core of analysis: by bringing forward the participants' individuality, these visualizations draw attention not only to *textual* interaction, but also to the interplay of *people*.

In addition to being recognized as a literary space where poetry and politics interact, the Devonshire Manuscript is recognized as a document that reflects concerns associated with gender and literary production at the time. However, as Kim Walker has cautioned, the notion of lyric-as-personal-expression must be tempered: rather than naively reading texts from personal albums such as the Devonshire Manuscript as "transparent accounts of the self or of experience," one should approach these commonplace books as "a space for constructing a personal voice, constituting the self, shaping a self-image, and articulating an identity within and against available structures of meaning" (26). Adopting this model, the Devonshire Manuscript might be better conceptualized as a space where the compilers could construct their personal view of the world around them and share these views with their entourage. In order to do so, however, the contributors had to feel free to express themselves in a political and social context that was fraught with tension, where friends were also courtiers and rivals, and where social and political advancement were dispensed capriciously. These sentiments are resoundingly expressed in h8's transcription of Wyatt's "My nowne Iohn poynt" (85v-87r), and many instances of descriptions of the thin line separating friends and foes are found throughout the manuscript. When these instances are examined using TextArc, the mention of friend ("frend" and "ffrynd") appears more localized, yet correlates with the mention of foes ("foo"). "Foo" is found

near the center of the TextArc screen demonstrating that it is somewhat evenly distributed throughout the lyrics (**Figure 11**). This can undoubtedly be explained by the concern of courtly love poetry with rivals and opponents. However, this visual representation of the text highlights a noteworthy subversive use of the social and personal space provided by the manuscript.
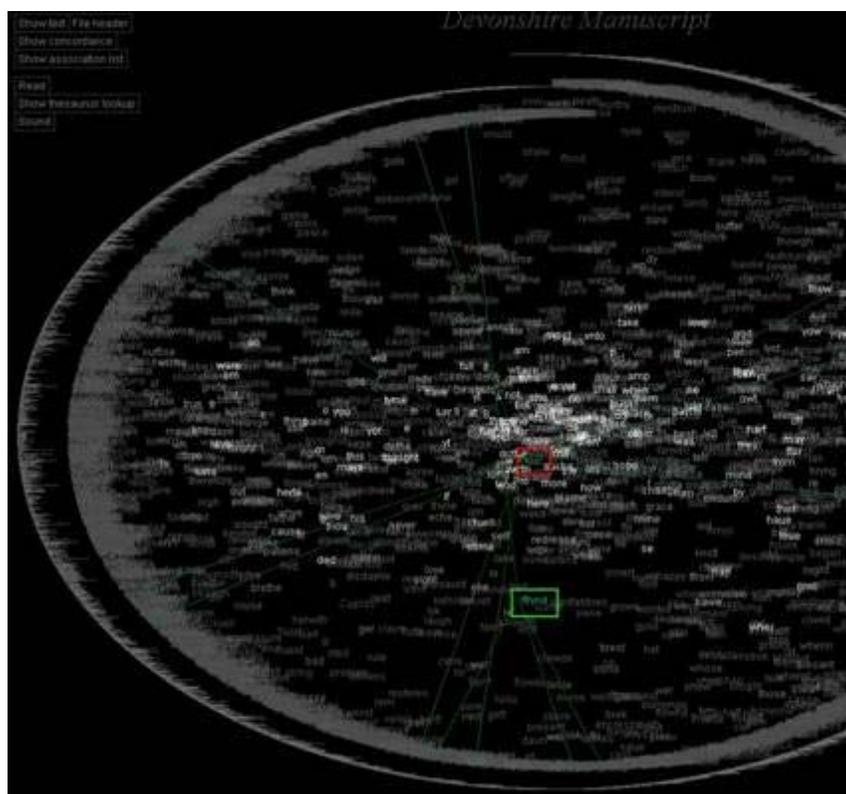

Figure 11

Women were particularly disadvantaged in finding a space in which they felt free to reply and appropriate courtly literary language for their own purposes. Publication was particularly problematic for women, even well into the sixteenth century, and remained a rare occurrence until Lady Margaret Cavendish published her poems in the mid-seventeenth century (Marotti 54). Coterie circulation being relatively private and print culture being an unsympathetic medium, women continued to produce verse in manuscript form well after the stigma of print diminished for their male counterparts. The use of the commonplace book as "a statement of personal experience," as Julie Sanders has argued, remained, until the seventeenth century and beyond, an accessible means for women to solidify allegiances as well as to acquire "authorial strength, confidence and aesthetic identity" through identification with a group (52, 50). Sanders' recent study of the early seventeenth century Aston-Thimelby or Tixall group miscellany certainly helps to demystify the image of the early modern woman writer as an isolated individual separate or separated from society. Sanders' findings support Ezell's contention that texts by women include also those works circulated and compiled by women, preserved and transmitted by "interweav[ing] their voices with the voices of others (79)."

One important aspect of the exchanges in the Devonshire Manuscript is that women felt comfortable to express themselves alongside men and to interweave their voices throughout the miscellany. Coterie circulation usually did not attribute verse to specific authors, which, as Helen Hackett has noted, makes the task of distinguishing between "reading a man using a female voice" and "a woman's own composition" especially difficult (172). The Devonshire Manuscript, however, contains many attributions using

initials and even full names, making the identification of women authors less problematic in those cases. But these initials and full names are more than just helpful bibliographic details; though the compilers and authors felt they were part of a coterie—a network engaged in writing, responding and correcting one another—they still maintained their individuality by leaving distinct personal markings on the pages of the manuscript, validating their individual efforts, experiences, and sentiments, and those of the other contributors.

The most significant of these marks are by Mary Shelton, Margaret Douglas, and Mary Howard. As mentioned above, the first page of the manuscript features Mary Shelton's full name as well as "margayg," and "garet how," which could represent Margaret Howard (Douglas). Mary Shelton's full name also appears after a poem in her hand (22v), and the acrostic poem in H1, "Suffryng in sorow in hope to attain" (7r), where the first letter of the first word of every stanza ("Suffryng," "Hope," "Encrease," "Love," "Then," "Vntrew," "Neu[er]") taken together forms the name "SHELTVN." The notation found on 68r reads, "Madame / Madame d / Madame margeret / et madame de Richemont," reflecting a certain experimentation with personal identity. Mary Howard is identified as Duchess of Richmond, whereas Margaret Douglas is given no patriarchal association by H7.

These seemingly idle notations in fact make these women leap out of the manuscript page. In a culture in which the practice of authorial attribution was still emerging and compilation and editorial duty were still mostly anonymous, the intermingled voices of women are often difficult to differentiate from those of men. The indistinctness of voices to those outside the coterie was not usually a concern in commonplace books. The recording of the identities of these women is therefore a fascinating aspect of the Devonshire Manuscript. However, as the sixteenth century progressed, the manuscript text (especially the courtly lyric,) moved from manuscript compilation to print miscellany, and, as Elizabeth Heale has shown, the early Tudor courtly balet "became an almost exclusively male-voiced genre with the female-voiced poems of passion and retaliation largely silenced." The move from manuscript to print, Heale contends, saw "the role of women as crucial to the culture and the production of courtly verse disappeared from sight" (" 'Desiring Women Writing'" 26). Tottel's miscellany and later anthologies of Wyatt's works completely eclipse these marks of self-validation by women in the Devonshire Manuscript. As our experiments have shown, approaching early modern manuscript texts with new digital tools allows those aspects that have disappeared from the original—such as the contributions of women—to resurface.

4. Conclusion

Margaret Ezell argues that until recently, "little effort has been made to catalogue and reconstruct patterns in women's manuscript texts to provide an inclusive overview of literary activities rather than isolated, individual authors" (23). The use of visual representation tools allows us to draw out a more encompassing view of early modern writing; one, as Rabb explains, that does not depend so much on a linear progression along a continuum, but which attempts to capture a more circular, back and forth movement "along the interconnecting threads of a fabric of words" (354). Of course, each line, dot, or position of a word produced with these digital tools reflects an editorial decision made in the process of encoding the manuscript. There was also the assumption that the order of the manuscript materials, foliation by foliation, bore some relationship to the order of their entry into the manuscript—something that our own work, and that of others, draws into question. This research model, however, has a flexibility that will allow the opportunity for more accurate representation as a greater understanding about the composition of this particular manuscript text becomes available. Though the nature of the networks of interaction documented via these methods would not necessarily be altered, new information regarding the order of entries could impact the way we understand instances of successive layering within the exchanges of the manuscript.

The kinds of observations that can be investigated with these visualization tools are tentative; even so, they can be revealing inasmuch as they offer the ability to quickly expose areas of investigation by giving new perspectives and highlighting problems. Many issues illuminated by these tools would be difficult to identify and examine when looking at the flat manuscript page: the centrality of Margaret Douglas' interactions, for instance, or the emergence of certain words such as "women" and "foe," which demonstrate the conspicuousness and importance of certain themes and how they relate to the social networks in specific sections of the manuscript. The applications described here are but a small indication of the technology available, and yet they demonstrate the potential of visualization tools for textual analysis in the humanities.

Works Cited

Baron, Helen . "Mary (Howard) Fitzroy's Hand in the Devonshire Manuscript." *Review of English Studies,* new series. 65.179 (1994): 318-35. Print.

Boffey, Julia . *Manuscripts of English Courtly Love Lyrics in the Later Middle Ages.* Cambridge: D. S. Brewer, 1985. Print.

—— . "Women Authors and Women's Literacy in Fourteenth- and Fifteenth-Century England." *Women and Literature in Britain, 1150–1500.* Ed. Carol M. Meale. Cambridge: Cambridge UP, 1993. 159-82. Print.

Chaucer, Geoffrey . *The Riverside Chaucer.* Ed. Larry D. Benson. Boston: Houghton Mifflin, 1987. Print.

Chorney, Tatjana . "Interactive Reading, Early Modern Texts and Hypertext: A Lesson from the Past." *Academic Commons.* 2005. Web. <http://www.academiccommons.org/commons/essay/early-modern-texts-and-hypertext> 3 Dec. 2007.

Devonshire Manuscript . British Library Additional MS 17492. London, British Library.

Dillon, A., and R. Gabbard . "Hypermedia as an educational technology: A review of the quantitative research literature on learner comprehension, control and style." *Review of Educational Research* 68.3 (1998): 322-349. Print.

Erickson, Peter . "Rewriting the Renaissance, Rewriting Ourselves." *Shakespeare Quarterly* 38 (1987): 327-37. Print.

Ezell, Margaret . *Social Authorship and the Advent of Print.* Baltimore: John Hopkins UP, 1999. Print.

Fox, Alistair . *Politics and Literature in the Reigns of Henry VII and Henry VIII.* Oxford: Blackwell, 1989. Print.

Garfinkel, Harold . *Studies in Ethnomethodology.* Second edition. Malden, MA: Blackwell, 1984. Print.

Gibson, Jonathan . "Anne Southwell and the Construction of MS Folger V.b.198." Renaissance Society of America Annual Conference. Cambridge University, Cambridge. 7 Apr. 2005. Address.

Goldberg, Jonathan . *James I and the Politics of Literature: Jonson, Shakespeare, Donne, and Their Contemporaries.* Baltimore: Johns Hopkins UP, 1983. Print.

Greenblatt, Stephen . *Renaissance Self-Fashioning: From More to Shakespeare.* Chicago: U of Chicago P, 1980. Print.

Hackett, Helen . "Courtly Writing by Women." *Women and Literature in Britain, 1500–1700.* Ed. Helen Wilcox. Cambridge: Cambridge UP, 1996. 169-89. Print.

Harrier, Richard . *The Canon of Sir Thomas Wyatt's Poetry.* Cambridge: Harvard UP, 1975. Print.

Hassenzahl, M. and Tractinsky, N . "Empirical studies of the user

experience." A special issue. *Behavior and Information Technology* (2006). Print.

—— . "User Experience – a Research Agenda." *Behavior & Information Technology* 25.2 (2006): 91-97. Print.

Head, David M . " 'Beyn Ledde and Seduced by the Devyll': The Attainder of Lord Thomas Howard and the Tudor Law of Treason." *Sixteenth Century Journal* 13.4 (1982): 3-16. Print.

Heale, Elizabeth . " 'Desiring Women Writing': Female Voices and Courtly 'Balets' in Some Early Tudor Manuscript Albums." *Early Modern Women's Manuscript Writing: Selected Papers from the Trinity/Trent Colloquium.* Eds. Victoria E Burke, Jonathan Gibson, and Elizabeth Clarke. Aldershot: Ashgate, 2004. 9-31. Print.

—— . "Women and the Courtly Love Lyric: *The Devonshire MS* (*BL Additional* 17492)." *Modern Language Review* 90 (1995): 296-313. Print.

—— . *Wyatt, Surrey and Early Tudor Poetry*. London: Longman, 1994. Print.

Herman, E . "End-users in academia: meeting the information needs of university researchers in an electronic age – Part 1." *ASLIB Proceedings* 53.9 (2001): 387-401. Print.

—— . "End-users in academia: meeting the information needs of university researchers in an electronic age – Part 2. Innovative information accessing opportunities and the researcher: user acceptance of IT-based information resources in academia." *ASLIB Proceedings* 53.10 (2001): 431-457. Print.

Howard, Jean E . "The New Historicism in Renaissance Studies." *English Literary Renaissance* 16 (1986): 13-43. Print.

Ives, E. W . *Anne Boleyn.* Oxford: Blackwell 1986. Print.

Klene, Jean . " 'Monument of an Endless affection': Folger MS V.b.198 and Lady Anne Southwell." *English Manuscript Studies 1100–1700.* 9 (2000): 165-86. Print.

Lerer, Seth . *Courtly Letters in the Age of Henry VIII*. Cambridge: Cambridge UP, 1997. Print.

Love, Harold . *Scribal Publication in Seventeenth-Century England*. Oxford: Clarendon, 1993. Print.

Maguire, Laurie E . *Shakespearean Suspect Texts: The 'Bad' Quartos and their Contexts.* Cambridge: Cambridge UP, 1996. Print.

Marcus, Leah S . *Puzzling Shakespeare: Local Reading and Its Discontents*. Berkeley: U of California P, 1988. Print.

Marotti, Arthur F . *Manuscript, Print, and the English Renaissance Lyric*. Ithaca: Cornell UP, 1995. Print.

May, Steven W . *The Elizabethan Courtier Poets: The Poems and Their Contexts.* Columbia: U of Missouri P, 1991. Print.

McGann, Jerome J . *A Critique of Modern Textual Criticism.* Chicago: U of Chicago P, 1983. Print.

McKenzie, D. F . *Bibliography and the Sociology of Texts.* London: British Library, 1986. Print.

miniircd . Web. <http://freshmeat.net/projects/miniircd/>.

Mutton, Paul . "Inferring and Visualizing Social Networks on Internet Relay Chat." *Eighth International Conference on Information Visualization: IV 2004.* Los Alamitos: IEEE Computer Society, 2004. 35-43. Print.

Norbrook, David . *Poetry and Politics in the English Renaissance*. London: Routledge & Kegan Paul, 1984. Print.

Nott, G. F., ed . *The Works of Henry Howard, Earl of Surrey, and of Sir Thomas Wyatt.* 2 vols. London: Longman, Hurst, Rees, Orme & Brown, 1815. Print.

de Paula, Maíra Greco, Barbosa, S.D.J . "Using an Interaction Model to Support Communication among HCI Design Team Members from Multidisciplinary Backgrounds." *VI Simpósio sobre Fatores Humanos em Sistemas Computacionais*. IHC'2004, 2004. Curitiba. Anais do VI Simpósio sobre Fatores Humanos em Sistemas Computacionais. 171-178. Print.

——, Bruno Santana da Silva, and Simone Diniz Junqueira Barbosa . "Using an interaction model as a resource for communication in design." *CHI Extended Abstracts* (2005): 1713-1716. Print.

Pechter, Edward . "The New Historicism and Its Discontents: Politicizing Renaissance Drama." *Publications of the Modern Languages Association of America* 102 (1987): 292-302. Print.

PieSpy Social Network Bot . Web. <http://www.jibble.org/piespy/>

Rabb, Melinda Alliker . "The Work of Women in the Age of Electronic Reproduction: The Canon, Early Modern Women Writers and the Postmodern Reader." *A Companion to Early Modern Women's Writing.* Ed. Anita Pacheco. Malden: Blackwell, 2002. 339-360. Print.

Rebholz, R. A., ed . *Sir Thomas Wyatt: The Complete Poems*. New York: Penguin, 1978. Print.

Remley, Paul . "Mary Shelton and Her Tudor Literary Milieu." *Rethinking the Henrician Era: Essays on Early Tudor Texts and Contexts*. Ed. Peter C. Herman. Urbana: U of Illinois P, 1994. 40-77. Print.

Sanders, Julie . "Tixall Revisited: The Coterie Writings of the Astons and the Thimelbys in Seventeenth-Century Staffordshire." *Women Writing, 1550-1750.* Ed. Jo Wallwork and Paul Salzman. *Meridian* 18.1 (2001): 47-57. Print.

Saunders, J. W . "From Manuscript to Print: A Note on the Circulation of Poetic MSS in

the Sixteenth Century." *Leeds Philosophical and Literary Society* 7.5 (1951): 507-28. Print.

Seaton, Ethel . *Sir Richard Roos: Lancastrian Poet*. London: Hart-Davis, 1961. Print.

Shevelow, Kathryn . *Women in Print Culture: The Construction of Femininity in the Early Periodical*. London: Routledge, 1989. Print.

Siemens, Raymond. G . "Thomas Wyatt, Anne Boleyn, and Henry VIII's Lyric 'Pastime with Good Company'" *Notes & Queries* 44.1 (1997): 26-27. Print.

—— , Karin Armstrong, and Barbara Bond. "The Devil is in the Details: An Electronic Edition of the Devonshire MS (British Library Additional MS 17492), Its Encoding and Prototyping." *New Technologies and Renaissance Studies*. Eds. William R. Bowen and Raymond G. Siemens. New Technologies in Medieval and Renaissance Studies 1. Tempe: Arizona Center for Medieval and Renaissance Studies, 2008. 261-99. Print.

Simile Timeline . Web. <http://www.simile-widgets.org/timeline/>

Smith, W. G., and F. P. Wilson . *Oxford Dictionary of English Proverbs*. 3rd ed. Oxford: Clarendon P, 1970. Print.

Southall, Raymond . "The Devonshire Manuscript Collection of Early Tudor Poetry, 1532–41." *Review of English Studies*, new series. 15 (1964): 142-50. Print.

—— . *The Courtly Maker: An Essay on the Poetry of Wyatt and His Contemporaries*. Oxford: Blackwell, 1964. Print.

Stephann Makri, Ann Blandford, Jeremy Gow, Jon Rimmer, Claire Warwick, and George Buchanan . "A library or just another information resource? A case study of users' mental models of traditional and digital libraries." *JASIST* 58.3 (2007): 433-445. Print.

Stevens, John . *Music and Poetry in the Early Tudor Court*. London: Methuen, 1961. Print.

TextArc . Web. <http://www.textarc.org/>

Tilley, Morris Palmer . *A Dictionary of the Proverbs in England in the Sixteenth and Seventeenth Centuries*. Ann Arbor: U of Michigan P, 1950. Print.

Walker, Greg . *Writing Under Tyranny: English Literature and the Henrician Reformation*. Oxford: Oxford UP, 2005. Print.

Walker, Kim . *Women Writers of the English Renaissance*. New York: Twayne, 1996. Print.

Wayne, Valerie . "Some Sad Sentence: Vives' *Instruction of a Christian Woman*." *Silent But For The Word: Tudor Women as Patrons, Translators, and Writers of Religious Works*. Ed. Margaret Patterson. Kent: Kent State UP, 1985. 15-29. Print.

Appendix 1

A. Hands in the Devonshire Manuscript (following Baron)

Named hands

· HS – Henry Stuart (Lord Darnley)

· MD – Margaret Douglas

· MF – Mary (Howard) Fitzroy

· MS – Mary Shelton

· TH1 and TH2 – Scribes associated with Thomas Howard (Lord Surrey)

Unidentified hands

· H1 – Hand 1

· H1.1 or H1? – Hand 1? or Hand 1.1

· H2 – Hand 2

· H3 – Hand 3

· H4 – Hand 4

· H5 – Hand 5

· H6 – Hand 6

· H7 – Hand 7

· H7.1 or H7? – Hand 7? or Hand 7.1

· H8 – Hand 8

· H9 – Hand 9

· H10 – Hand 10

· H11 – Hand 11

· H12 – Hand 12

· H13 – Hand 13

B. Selected Indications of Non-Professional Scribal

Presence

· 6r – H1 gets larger and sloppier over the course of the page

· 15r-16v – H2 gives capital "B" in correct and incorrect manner

· 16v – H2 copies beginning of next line continuous with present line, cancels it

· 17v – H2 has filled "w," leaning "l," obscured "u" and obscured minim on "m" in "In feythe welcum to me myselffe" (l. 15)

· 19r – H2 sketches a little heart

· 27v – TH2 begins indenting every second line but with inconsistent execution

· 29r – TH2 uses a terminal "s" in the initial position

· 40v – MD's hand gets larger, sloppier, and fainter over course of page

· 41r – MD fails to provide macron for "n" in "miyd" (mind) (l. 1)

· 43r – MD begins following line continuous with current line, realizes her mistake, and cancels (l. 8)

· 43r – MD fails to provide macron for "n" in "myd" (mind) (l. 30)

· 43r – MD begins a poem, crosses out the first line, and starts again on the next page

· 43v – MD appears to have retroactively linked two previously separate words ("be" and "ffor" as "be–ffor") in "by prowff I se beffor myne neyne" (l. 5)

· 44v – MD's hand greatly enlarges over the course of the page; two big smudges

· 46r – TH1 squeezes a virgule in between two words so that it becomes a vertical bar

· 47v – H11's lines cross the page boundary

· 58r – MD incorrectly spells "Ioy" (joy) as "yoI" (l. 3)

· 65v – MS, where one word appears on the facing page ("beste")

· 65r – MD's hand becomes larger and sloppier over course of three stanzas, with many smudges

· The following errors made by H8 may be the result of haste, not lack of training:

o 70v – one word ("of") added in margin, possibly as an afterthought (l. 4)

o 76r – terminal "s" in initial position (l. 6)

o 77r – combines two lines and omits a line in "What shulde I saye"

o 77v – carries over from previous line "for love to finde suche crueltye /" and "for hertye love to finde such crueltie"

o 78v – retroactively separates two words in "that bothe / we might be well con*n*te" (l. 30)

o 79v – scribe makes an abbreviation for "ra" and writes out "a" in "Wherefor I p*r*aye you forget not" (l. 9)

o 81r – three instances where a single metrical line is combined with two graphical lines in "now all of chaunge"

o 83v – starts to write, realizes error, cancels and starts again

o 84r – writes first line in large letters, then reverts to usual size

o 85v-87r – inconsistencies with indentation and capitalization over the course of an 100 line poem that omits three lines

· 88r – MD's (emotional?) "testament Intyer" blotches, smudges, large untidy writing

· 91v – TH2 uses terminal "s" in initial position in "so cesseth loue / and forth to loue a newe"

· Smudges, blotches, ink spills, incomplete erasures, cross-outs (e.g. 39v, 58v)

· Stanzas that span pages/columns (e.g. 71r, 79v, 80r)

· Poems that break off short (review – possible additions):

o 22v – "the knot which fyrst my hart dyd strayn"

o 22v – "He Robyn gentyll robyn"

o 62r – "fancy framed my hart ffrust"

o 66r – "Myght I as well *with*in my songe"

o 87v – "My mothers maides"

· Omitted lines:

o 17v – last stanza (H2)

o 74v – stanza 3 (H8)

o 75v – l.11 of sonnet (H8)

o 77r – l. 18 (H8)

o 80r – l.31 (H8)

o 85v – ll. 28-30 (H8)

· Overwriting/Scribal Corrections/ Scribal Errors:

o 16v – H2 overwrites "d" with "c" in "& yf suche chance do chawnce" (l. 30)

o 17r – H2 overwrites "s" with "w" in "And wylt thow leve me thus" (l. 17)

o 18v – H2 overwrites "y" with "r" in "truly . therfore they be to blame" (l. 16)

o 40r – MD overwrites "t" with "p" in "my ffathffulnes *with* sech despyt" (l. 6)

A full list of examples is available from the encoded text by searching on "orig/reg" and "sic/corr" pairs, as well as on "overwritten" and "overwrites".

C. Originals

H1

· 58v – "Sum sum*m* say I love sum say I moke"

H2

· 7v – "My ferefull hope from me ys fledd"

· 8r – "Yowre ferefull hope cannot p*reva*yle"

· 8v-9r – "Bownd am I now & shall be styll"

· 10v – Anthony Lee's "May not thys hate from *thee* estarte"

· 18v – Rychard Hattfeld's "All women have vertues noble & excelent"

· 21v-22r – Anthony Lee's "In faythe methynks yt ys no Ryght"

H7

· 59v – Edmund Knyvett's "Wyly no dought ye be a wry"

· 59v – "To dere is bowght the doblenes"

· 60v – "Myn vnhappy chaunce / to home shall I playn"

· 62v – "In plac*es* Wher that I company"

· 63v – Edmund Knyvett's "If *that* I cowlde in versis close"

· 68r – "Madame"

H12

· 62r – "fancy framed my hart ffrust"

H13

· 66r – "The pleasaunt beat of swet delyte dothe blynd"

HS

· 57r – "My hope is yow for to obtaine"

MD

· 41r – "ther ys no cure ffor care o̶-off miyd"

· 41r-41v – "as ffor my part I know no thyng"

· 43v-44r – "what nedythe lyff when I requyer"

· 44r – "and thys be thys ye may"

· 58r – "when I bethynk my wontet ways"

· 58v-59r – "my hart ys set not remove"

· 59r – "lo in thy hat thow hast be gone"

· 61v-62r – "ffanecy fframed my hart ffurst"

· 65r – "my hart ys set nat to remowe"

· 67v – "the sueden ghance ded mak me mves"

· 88r – "now that ye be assemblled heer"

MS

· 22v – "A wel I have at other lost"

· 59r – "wan I be thyng my wontyd was"

· 60r – "to men that knows ye not"

· 65r – "I ame not she be prowess off syt"

· 65v – "to cowntarffete a mery mode"

· 68r-68v – "my ywtheffol days ar past" *

TH1

· 44v – "Too yoye In payne my will"

· 45r-46r – "T Hou"'s "Yff reason govern fantasye"

· 46v-47r – "What helpythe hope of happy hape"

· 47v – "This rotyd greff will not but grow"

TH2

· 26r – "Now may I morne as one off late"

· 26v – "mar h"'s "Wyth sorowful syghes and wondes smart"

· 27r – "What thyng shold cawse me to be sad"

· 27v – "Alas that men be so vngent"

· 28r – "Who hath more cawse for to complayne"

· 28v – "I may well say *with* Ioyfull hart"

· 29r – "T. h."'s "To yowr gentyll letters an answere to resyte"

· 67v – "am el mem"

D. Further Examples of Personal Interaction via Scribal Annotation

· 02v – MD inserts "that I hawe lost" into H1's poem

· 03r – MD adds lines to H1's poem

· 15r – (possibly H1) inserts change into H2's poem "haue now"

· 22v – H10 declares "finis" to H3's part-poem

· 23r – (possibly) MD inserts "ffytt" into H3's poem

· 24v – (possibly) unknown hand writes "s a i r" after "ffynys q*uod*" by H3

· 47v – a hand not unlike H5 continues a poem by H11 and breaks off ("o hart aprest")

· 55v – MD inserts "he cum" into MF's poem

· 61v-62r – unknown hand "corrects" MD's poem

· 69r – TH2 adds three words to H8's poem "as semyth me"

Appendix 2

A. Using IRC Analysis Tools on an Encoded Text

The supportive technical structure which was employed in undertaking the analysis is composed of three overarching components—a transcript of the manuscript's content derived from the XML-encoded source, a local Internet Relay Chat (IRC) server, and a collection of small programs known as IRC bots. The roles of each of these, and the methods by which they are combined together to generate the output used in the analysis, are discussed below.

We have the ability to manipulate an XML-encoded text in a variety of ways depending on the needs of our analysis. For example, XML may be transformed through XSLT into a different XML file, a PDF file, an HTML web page, a delimited text file for importation into a spreadsheet application such as Calc or Excel, or any other appropriate format. In the case of the analysis being discussed here, the encoded text was transformed into a basic text file comprising of a transcript of the manuscript's contents, broken down into individual lines. The transformation stripped away the components of the encoding that are not a part of the original manuscript, including all tags, notations on physical bibliography and comments made by the encoders. What results is a text file with one line of text for each line in the original manuscript. This file becomes the source from which we can undertake further aspects of the analysis. The contents of the transcript file are used to reproduce the conditions of concurrent interaction between users.

A further component of the analysis toolkit is an IRC server itself, which in this case is a very simple IRC server application written in Python and running under Linux.[38] The IRC server provides the operating environment under which analysis procedures can be executed. Once the server is up and running, we create a channel on the server in which to execute the analysis. An IRC channel is essentially an Internet chat room in which participants log in and converse

with one another by sending text messages to the room. The analysis strategy is to simulate the conditions of a real-time chat room by injecting the text of the manuscript from the transcript file, line by line, into the IRC channel, with each hand of the manuscript seeming to "speak" to the rest the group.

This brings us to the third component of the analysis toolkit, a collection of scripts which instantiate what are known in IRC parlance as "bots." Bots are scripts that, as the name suggests, automate certain functions. Bots can be written in a variety of programming languages and programmed to perform a wide array of different tasks. In the case of this analysis, we are using bots written in the Perl to interact with an IRC channel and respond in a controlled manner to conversational events taking place therein. Given that there are roughly 20 hands at work in the manuscript, and the total number of lines of text runs into the thousands, it would be highly impractical to attempt to reproduce the contents of the manuscript manually. Bots provide a means of automating the simulation of a conversation. For each hand present in the manuscript, one individual bot is instantiated—we will call these the hand bots. Upon instantiation, each hand bot logs into the IRC server as though it were a real user. The bot's user name in the IRC channel corresponds to the name of the hand it represents, e.g. the bot representing Henry Stuart's hand is assigned the user name Henry_Stuart in the channel. Instantiating one bot per manuscript hand populates the IRC channel with users. However, these users do not actually perform any actions on their own—the hand bots which control these users are programmed to respond to specific instructions, and in the absence of such instructions they do nothing. This arrangement allows for the manuscript transcript to be output in a controlled and ordered fashion.

What remains, then, is inducing the hand bots (and thus the IRC channel users) to output those lines of the manuscript for which they are responsible and no others. This is accomplished by the use of another bot that is programmed to output a series of instructions, one by one, into the IRC channel—we'll call this the controller bot. The instructions contain two pieces of information: the name of the hand bot that is to respond, and the line number of the transcript that the hand bot should output. When the controller bot outputs an instruction, all hand bots observe and evaluate the instruction. However, the instructions apply to only one hand bot, and only one will ultimately respond. When a hand bot determines that it is the target of an instruction, it retrieves the line of text indicated by the instructions from the manuscript transcript and outputs it to the channel. There is therefore a call-and-response behavior between the controller bot and the hand bots. The controller bot calls a hand bot, and a hand bot responds with a line of manuscript text. This process repeats itself for each line in the manuscript, and in so doing simulates the actual occurrence of real chat room session. The entire process takes about eight hours to complete.

While all this is transpiring, PieSpy, another type of IRC bot, is operating in the background, observing the ongoing conversation and responding to changes in the channel wrought by the interactions between its users.[39] The PieSpy analysis tool was originally designed to be deployed on an active IRC channel in which a real-time conversation is taking place between channel users. The use of bots, as described above, allows us to simulate these conditions. Within the PieSpy configuration file are directives that can be set to specify which IRC server and channel the tool should monitor. When launched, PieSpy logs in to the designated server, joins a channel, and begins to monitor the conversational activity taking place.

PieSpy operates by interpolating channel activity into diagrams designed to reflect the strength of relationship between each user in the channel. The generated diagrams contain clusters of nodes joined together with lines, with each node corresponding to a user active within the channel. The connections between the nodes, and the position of each node relative to the others, form the crux of the analysis. Those users who seem to be addressing one another are shown to have a stronger connection to each other than to others in the channel, indicated by the proximity of their respective nodes and the thickness of the line joining them together. Similarly, those users who participate more in the ongoing conversation are given a more dominant role in the channel than those users who say relatively little, and are shown to be nearer the centre of the cluster of user nodes. The end result of using PieSpy to analyze the manuscript transcript is a collection of about 200 diagrams. These can be strung together into an animation that shows the evolution of the conversation taking place.

PieSpy offers some capacity for fine-tuning its interpretation of activity on the channel. The configuration file allows for the specification of a temporal decay value, which is used by PieSpy in quantifying the degree to which a channel user can be considered active within the conversation. A higher setting for temporal decay causes those channel users who have not output anything recently to be dropped from the analysis more quickly, removing them from any subsequent channel activity diagrams until they are observed to be speaking again. The exact method by which this figure is interpreted by PieSpy is not documented, but some experiments demonstrated its potential utility in generating a variety of different views of the source data. The default setting of 0.02 produced diagrams in which users persist for a relatively long time beyond their final output to the channel. Although their diminishing roles in the channel are more or less accurately described by the diagrams, the resultant user node clusters tend to be more cluttered when using the default temporal decay setting. User nodes are present which, strictly speaking, should be interpreted as inactive. Therefore, it is instructive to run the complete simulation through multiple times, altering the temporal decay setting slightly with each iteration to influence the weighting PieSpy imparts upon the channel users. This produces diagrams that achieve a visual representation of the channel activity that is both informative and accurate.

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[1] See also Ezell, *Social Authorship,* Klene "Monument," and Gibson, "Anne Southwell."

[2] For a discussion of the encoding and prototyping of the electronic edition, see Siemens et al, "The Devil is in the Details."

[3] See the discussion of these theories in: Harrier, *Canon* , Southall, *Courtly Maker* and "Devonshire Manuscript," and Remley, "Mary Shelton."

[4] The British Library acquired the manuscript from Nott's collection, through a Thomas Rodd, in 1848.

[5] The best-known examples of this approach to Wyatt's works, as represented in the Devonshire Manuscript and elsewhere, are those that championed a reading of the poems as topical allegories about Wyatt's alleged illicit relationship with Anne Boleyn.

[6] Representative studies include: Southall, *Courtly Maker*, and "Devonshire Manuscript;" Stevens, Seaton, and Harrier.

[7] That is, the New Historicism as exemplified in the work of Greenblatt, Montrose, Marcus, and others. Early assessments of the impact of New Historicism on Renaissance studies include Erickson, Howard, and Pechter.

[8] That is, the social theory of text as exemplified in the work of McGann and McKenzie, among others.

[9] Exemplary studies include Greenblatt, Norbrook, May, Fox, and Goldberg. See also the following more recent studies: Remley, "Mary Shelton;" Baron, "Mary (Howard) Fitzroy's Hand;" and Heale, *Wyatt, Surrey, and Early Tudor Poetry*, "Women and the Courtly Love Lyric," and "'Desiring Women Writing.'" On the importance of the Devonshire Manuscript specifically, see Boffey, *Manuscripts of English Courtly Love Lyrics*, and "Women Authors."

[10] Southall's work is traditionally cited as the central discussion of the manuscript and its import. See also Boffey, "Women Authors" 180, and *Manuscripts,* passim.

[11] Representative examples include: Heale, "Women;" Baron, "Mary (Howard) Fitzroy's Hand;" and Remley, "Mary Shelton." Heale explores the roles of Margaret Douglas, Mary Shelton, and Mary (Howard) Fitzroy and discusses "the evidence [the manuscript] yields of the parts women might have played as copiers, audiences, respondents, and, in a variety of senses, producers of love poetry in the early Tudor court" (297). Baron confirms that Surrey's sole contribution to the manuscript, the poem "O Happy Dames," is in the hand of his sister Mary (Howard) Fitzroy, and also provides the very valuable service of making public her work with the various hands of the manuscript in a convenient table, identifying the personal hands of Margaret Douglas, Mary Shelton, Thomas Howard, Mary Howard, and others. Remley focuses specifically on

Shelton's role in the manuscript and her use of a deliberate method that "attempt[s] to recast poetry written by others as a new and proprietary sort of literary text" to the end of, for example, documenting "the sense of outrage felt by her circle at the unjust imprisonment of two close acquaintances (Margaret Douglas and Thomas Howard) and [...] to protest the mistreatment of women by self-serving lovers" (42).

[12] See Greenblatt 115-56, and Siemens, "Thomas Wyatt."

[13] The significance of their choices and an analysis of the ways in which they adapted such verses to their own situations represents one way of exploring the social and political dynamics of courtly poetry, as is attention to the content and presentation of the poems they composed as inscribed in the manuscript.

[14] Such may be the case with Wyatt's "If yt ware not" (78v), which contains a burden that echoes a motto employed by Anne Boleyn in 1530, in turn echoing a line from Henry VIII's "Pastime With Good Company" (ca. 1509) which is itself an echo of one of the mottos employed by the Burgundian court in which Henry likely first met Boleyn. While often referred to as "If it ware not," the title of the piece as derived from the Devonshire Manuscript is "my yeris be yong even as ye see," with the incipit and burden "Grudge one who liste this ys my lott / no thing to want if yt ware not." See Siemens, "Thomas Wyatt."

[15] Baron has documented 18 hands plus two slight examples, 6 of which have been identified thus far.

[16] See Appendix 1B for a list of selected indications of nonprofessional scribal usage, including instances of overwriting and corrections.

[17] See Appendix 1A for a list of hands and their abbreviations in the Devonshire Manuscript. Our work follows that of Baron.

[18] See Appendix 1C for a list of original entries by hand.

[19] See 1r, 7r, 22v, and also 6v-7r.

[20] These include: "margayg" (1r); "[mar] garet how" (1r); "mar h" (26v, after the so-called "marriage" poem); and "m h" and "m h̶" (58v, one by MD). On the so-called "marriage" poem, see Boffey, "Women Authors."

[21] This occurs in "Now that ye be assembled here," where Margaret Douglas addresses her "ffather Dere / that off my blud ar the nerest" (88r).

[22] "Syns ye *duh duh* / & me haue fully brought" (29v); "and folowe alwaye *duh duh* thy lady dere" (29v).

[23] One of the most popular of these, raised often in discussions of the manuscript, is a riddle Southall has suggested was entered by Anne Boleyn. It reads: "am el men / an em e / as I haue dese / I ama yours an" (67v). This riddle, Southall observes (*Courtly Maker* 17-18), is of the sort posed by Wyatt in his "What word is that that changeth not though it be turned." The answer (possibly a reply by Boleyn to Wyatt) is ANNA, solved by transposing the second and fourth letter of each line resulting in the following: "a lemmen / amene / ah I saue dese / I ama yours an."

[24] "Madame / Madame d / Madame margeret / et madame de Richemont" (68r).

[25] See Appendix 1D for a list of further examples of personal engagement through scribal annotation.

[26] For example, XML may be transformed through XSLT into a different XML file, a PDF file, a HTML web page, a delimited text file that can be imported into a spreadsheet application such as Calc or Excel, or any other appropriate format that is needed to generate the representations employed here.

[27] Technical details about applying IRC analysis tools to an encoded text are provided as Appendix 2.

[28] For example, words that have a higher rate of occurrence are rendered brighter in color, drawing the eye to potentially significant focal points of the text. Any word that appears more than once is drawn at its average position, exposing the structure implied by word distribution. In other words, the

visualization reveals, at a glance, the distribution of words used throughout the text or only in a particular section.

[29] The combined operation of the tools is captured in a movie

[30] Anne Boleyn completed her education at the court of Margaret of Austria where she sought to acquire "continental manners and good French" so that she could be secured a position at home with the French-speaking Queen, Katherine of Aragon (Ives 23). Anne had surely heard or read some of Margaret's prescriptive lyrics advising the young ladies sent to her for grooming on how one should behave in courtly games of love. Margaret Douglas arguably received an excellent education since she resided during her adolescence in the household of Princess Mary who was instructed in consultation with the Spanish scholar Juan Luis Vives. Mary Howard was the niece of Lord Thomas Howard and first cousin to Anne Boleyn. She was therefore connected to one of most powerful noble families of England and almost certainly had had an exceptional education. Her brother, the earl of Surrey, was a poet and she transcribed one of his poems in the Devonshire Manuscript. Mary Shelton's mother was governess to Princess Mary who was very well educated, which might account for Mary Shelton's high degree of literacy (Remley 43).

[31] See Appendix 1D for additional examples of personal interaction via scribal annotation, including those of Douglas.

[32] For instance, the following corrections and insertions can be quickly uncovered in this way: Thomas Howard inserts "that I have lost" into H1's poem "O cruell causer of vndeserrved change" (2v) and adds "as semyth me" to H8's rendition of Wyatt "To cause accorde or to agree" (69r). H10 declares "finis" to H3's excerpt of Wyatt's "The knot which fyrst my hart dyd strayn" (22v), possibly as a separation to his/her own poem following. H5 writes the cryptic "s a i r" after H3's "finis quod" to "Hey Robyn Ioly Robyn tell me" (24v) and an unknown hand (possibly H5) continues "O hart aprest" transcribed by H11 but breaks off after two lines (47v).

[33] Two other entries by Margaret Douglas are annotated: "In the name of god amen" is added to her rendition of Wyatt's "to my meshap alas I ffynd" (42r); and Mary Shelton comments on Margaret's poem "the sueden ghance ded mak me mves / off hym that so lat was my ffrend" (67v), with "hape hawe bedden / my happe a vaning" and then the annotator adds a stylized monogram with her own initials ("S" overwriting the middle descenders of a capital "M").

[34] There are other instances of playful interactions between the scribes. Several poems are entered as answers to another. For instance, H8 enters Wyatt's "Patiens for my devise" (71r) and adds an explicit link to the earlier entry, "Pacyence tho I have not" (13v) transcribed by H2. H8 writes "to her that saide this patiens was not for her but that the contrarye of myne was most metiste for her porposse" (71r). Evidently, H8 teasingly pays homage to a woman's point-of-view about patience with a poem about the hardships of being unfaithful.

[35] The last two lines of the recovered stanza return poetically to the last line of the first stanza, "nor never chaung hes ffantesy." The poem ends with her reciprocal assertion of her loyalty: "ffor a sunder my hart shall borst / sow[r]er then change my ffantesy." The actions of the foe(s), though in vain, lead to heartbreak; only the "bursting" of her heart will be able to change the fantasy of the female lover's experience.

[36] Douglas also modifes entire lines of Howard's poems which, according to Remley, suggests that she had received his verse. For example, Howard wrote, "My loue truly shall not decay / For thretnyng nor for punysment " (27r) to which Douglas responds, "From me his loue wyll not decay" and "Wyth thretnyng great he hath ben payd / Off payne and yke off punnysment" (28v).

[37] Many of these individual poems work as responses to one another, playing off attitudes and sentiments expressed in an epistolary manner. When we consider the striking parallels between the social context in which the verse was created and copied and the content of this verse, it can be argued that the contributors to the Devonshire Manuscript were, in Greg Walker's words, "writing *about* the King, *despite* him, and in many ways *against* him" (416).

[38] For our experiment, we used miniircd > http://freshmeat.net/projects /miniircd

[39] See also Mutton 35-43.