

## Striking a NERV: the case for Networking English Renaissance Verse

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In their recent book, *The Network Turn: Changing Perspectives in the Humanities*, authors Ruth Ahnert et al make the case for the considerable benefits of applying network analysis to cultural materials—and not only to the social human networks that are involved in these cultural productions, but to the cultural products themselves.<sup>1</sup> One such application, mentioned briefly, is the literary miscellany, manuscript collections of various works by various authors, usually collected and compiled by a single individual for personal use. In our formulation, we might think of these individual works as sociable texts, the nodes of the graph, sitting in relationship to each other in these documents. To be in the same document is to be part of a social group, with varying relationships of spatial nearness that could be understood in terms of other kinds of relationships, perhaps thematic or generic, or originary. Such an approach might bring insight into the way in which these works were read, received, and understood by those who collected them. It might have much to say about canon formation: the authors and texts that are identified for inclusion and the factors (whether practical or philosophical) involved in their selection. This approach might also be of service in textual studies, in determining the relationships between the documents and their contents and how they were transmitted. As Ahnert et al. put it,

Scaling up this idea, we can begin to see how an analysis of all catalogued Renaissance poetry miscellanies might enable us to understand the early modern poetic universe in different ways. It could tell us which poems most commonly appeared together, it might help us see which manuscripts were most similar in their contents, and it may uncover patterns of scribal circulation.

The project outlined here arrives at this application of network analysis from a different direction, starting with a single author, the manuscript poet *par excellence*, John Donne, and (on the one hand) a growing body of scholarship on Donne and literary manuscript culture and (on the other hand) a well developed body of digital materials that make the sort of network analysis Ahnert describes possible.<sup>2</sup>

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<sup>1</sup> Ruth Ahnert author. *The Network Turn: Changing Perspectives in the Humanities*. Cambridge Elements. Elements in Publishing and Book Culture, 2020.

<sup>2</sup> See for examples Lara M. Crowley, *Manuscript Matters: Reading John Donne's Poetry and Prose in Early Modern England* (Oxford: OUP, 2018); Joshua Eckhardt, *Religion Around John Donne*. University Park, PA: The Pennsylvania State UP, 2019); Joshua Eckhardt and Daniel

Networking English Renaissance Verse is a nascent project that aims to expand and aggregate three vital digital resources that have shaped the study of early modern English literature in manuscript, and to use this data in network visualizations that, we think, have the potential to yield new insights in a wide range of critical issues.

*CELM, the Catalogue of English Literary Manuscripts 1450-1700*, compiled by Peter Beal, itemizes every manuscript witness (a transcription of a given work of literature) by 234 named authors in every literary manuscript held in 498 archives, with particular attention paid to poetry, amounting to some 27,000 items. This resource began in print but has since been converted into a site of linked HTML webpages, published, somewhat precariously, by the King's College Digital Lab. The notable virtues of CELM include its description of each manuscript, including brief notes on its material properties, publication history, provenance, etc. and its provision of unique identifiers for authors and short forms for works and manuscripts. CELM also has some notable limitations. Its focus is on the best known and most important manuscripts and (by the standards of the time when it was compiled) the most important authors, excluding certain known authors as well as all anonymous or unattributed works. It thus presents a very selective, twentieth-century view of the literary manuscript culture of the period.

*Digital Donne* is a resource of rather different scope and depth, a complete archive of the poetry of a single author, but arguably the most important manuscript poet of the period, both by virtue of the sheer amount of material that circulated, but also because of the personal social network involved in this circulation: Donne's poems account for more than fifteen percent of all the items contained in CELM. *Digital Donne* is the archive of raw materials that were used for the collations that inform the John Donne Variorum edition of Donne's poems, a nearly forty year project that is about to see its ninth and final volume published. In addition to a transcription of every witness of every Donne poem (just over 4200 of them) it also provides a table listing these poems in the context of their manuscripts (some 260 of them), along with their ordinal position, together with a short form identifier, page or folio number, heading or title, and first line. The limitations of *Digital Donne* are obvious: it focuses on a single author, albeit the most important manuscript poet of the period. On the benefit side, it is complete and presents a model for

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Starza Smith, eds. *Manuscript Miscellanies in Early Modern England* (Farnham, England): Ashgate, 2014); Daniel Starza Smith, *John Donne and the Conway Papers: Patronage and Manuscript Circulation in the Early Seventeenth Century* (Oxford: OUP, 2014). On Donne as a poet of manuscript culture, see Arthur F. Marotti, *John Donne, Coterie Poet* (Madison, WI: U Wisconsin P, 1986).

thoroughness of representation. It also has a very robust system of short-form identifiers for manuscripts and works.

*The Folger Union First Line Index*, a project of the Folger Shakespeare Library, is more expansive than either of the above, providing all poems (including authors omitted in CELM as well as anonymous and unattributed poems) in all manuscripts in eight large repositories, currently amounting to 128K items.<sup>3</sup> While it is more extensive in its range of authors and thorough with respect to its chosen repositories than CELM is, it is more limited in the range of repositories it represents and in the amount of detail it presents for each manuscript. It says nothing about the material artefact, provides no short form for works or witnesses, and does not provide the ordinal position of each witness. UFLI does provide information the others do not, including second and last lines (particularly important for unattributed poems), the number of lines, verse/stanza form, gender of the author and others.

On their own, each of these resources affords interesting possibilities for visualization (see further below for two illustrative cases) and for potential aggregation to unlock even more possibilities. With the prospect of Linked Open Data in mind, specifically with respect to the activities of the CFI-funded LINCS project (<https://lincsproject.ca/>), these resources again provide a mixed bag of possibilities for aggregating data and for visualizing poems as they occur in manuscripts.

- From the perspective of LOD, CELM has the virtue of providing short-forms for each manuscript, work, and individual witness that could be used as unique identifiers. *Digital Donne* also provides a robust set of short-forms that could be correlated to CELM. UFLI provides no short forms.
- With respect to data structure, both UFLI and *Digital Donne* are well structured (a database in the case of the former, a csv table in the case of the latter). CELM, on the other hand, functions as a series of webpages, although with fairly consistent data structure.
- With respect to extensibility: CELM and *Digital Donne* are complete with respect to their defined scope, and while UFLI is an on-going and growing project, its plans are to expand into print sources (already present) and later periods, rather than extending the scope within our period of concern.

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<sup>3</sup> These eight repositories are: Beinecke Library (Yale)—Osborn Collection; Bodleian Library (Oxford); British Library (handwritten 1895 index); British Library (1894-2009 index); Folger Shakespeare Library; Houghton Library (Harvard); Huntington Library; Leeds University Library—Brotherton Collection.

	<i>DigitalDonne</i>	<i>CELM</i>	<i>UFLI</i>
<b>Range</b>	Low just John Donne's poetry (4200 items; some 15% of <i>CELM</i> total)	Medium individual listings for every ms witness by 234 named authors in every literary manuscript in 498 archives (27k + items of poetry)	Medium all poems (including anonymous) in all manuscripts in 8 large repositories (128k + items)
<b>Detail</b>	High full transcriptions of every early modern witness; images for many; more complete listings for 37 major manuscripts; extensive stemmas of textual relationships between individual witnesses	Medium basic citation info plus ms provenance and later publication history	Low just au, title, first/last lines, archive, self mark, p./f. number
<b>Data Structure</b>	Medium csv	Medium Consistently formatted author and repository html files (which are non-overlapping)	High database
<b>Level of Regularization</b>	High short-form titles, ms sigla	High Author ids, numbers for items, works, manuscripts	Low [the database "unites" several print resources and smaller data sets, between which reporting standards vary]
<b>Linkable to Secondary Criticism</b>	Medium: short-form titles link to the comprehensive Roberts annotated bibliographies	Low: Some scattered references to publication history and recent criticism in broader ms descriptions	none
<b>Current Status</b>	Funding and print edition of <i>DV</i> completed; most digital resources publicly available; <i>DigitalDonne</i> housed at Texas A&M	Our understanding is that there are no current plans to develop / expand <i>CELM</i> at this time.	Data continues to be added, but focus is to include print sources and later periods (i.e., expand range, not depth or complexity)

**Figure 1** Table of Three Key Early Modern Manuscript Poetry Resources

In the longer term, the prospect of aggregating and augmenting these resources, whether in some sort of collaborative and programmatic way, or in an ad hoc implementation of LOD, is tantalizing and something we would like to pursue. In the meantime, our intermediary step is to model some of the processes that might be implemented with this data and to better understand the kinds of research questions we might be able to pursue. In this, we present two case studies.

### **Case Study #1: John Donne, Canon Formation, and Editorial Practice**

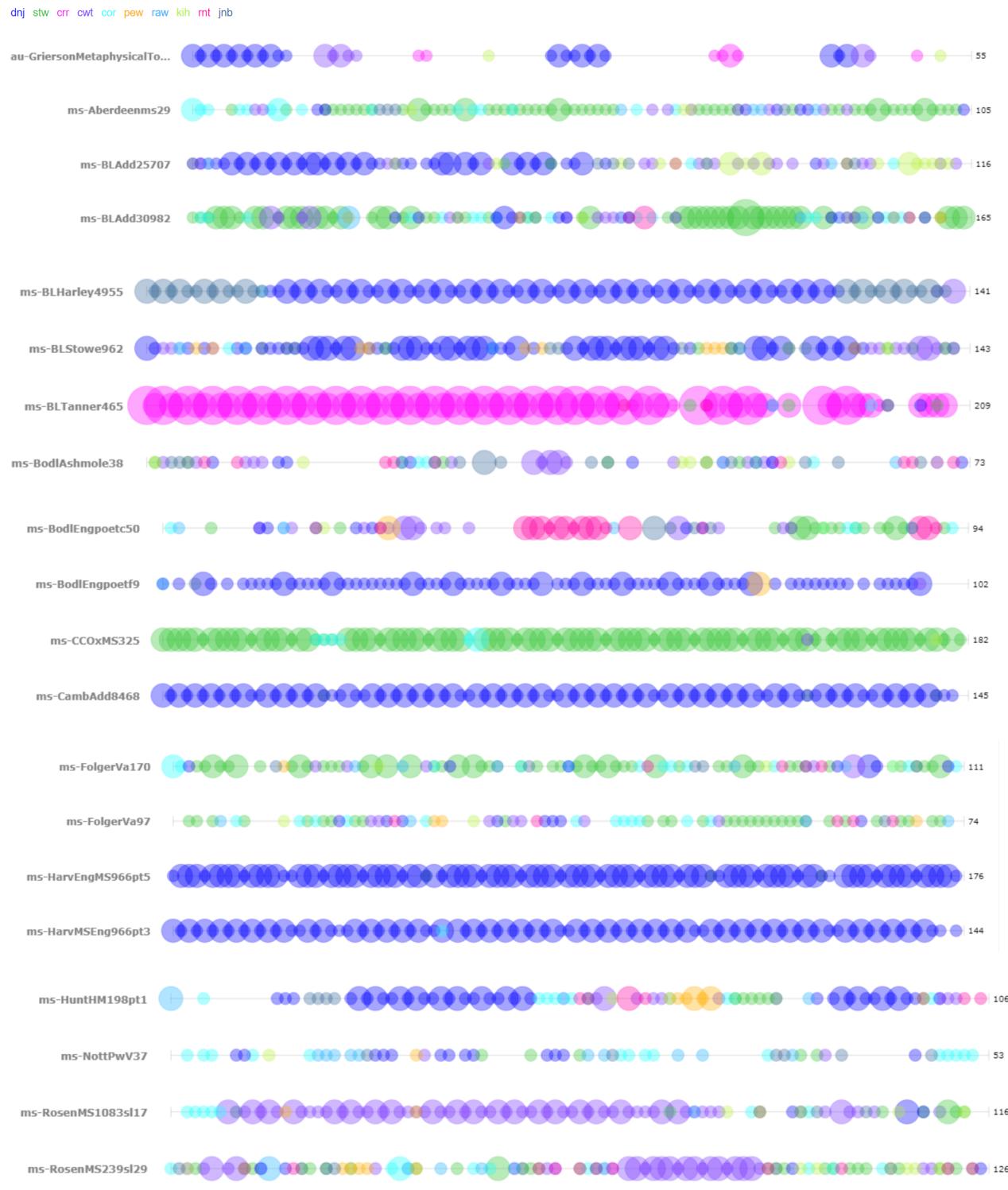
Working with these three resources, so far we have: 1) scrapped html data from *CELM*, married data from repository and author sides, and restructured it all as csv files; 2) regularized the individual work titles from *CELM* into shorter, more easily visualized forms, following the example of the *Donne Variorum*'s short-form titles. Any poem in *CELM* with five or more witnesses now has a short-form title based on *CELM* author abbreviations; those with fewer than five retain their unique *CELM* work number assignation. So we now have a database with data for every poem listed in *CELM*, and with proposed short-form titles for any poem appearing more than five times.

Using this database, we can compare and contrast the contents of every early modern poetic miscellany, and compare their contents to what modern readers encounter in modern editions. For example, 2021 marks the centenary of the publication of Herbert J. C. Grierson's *Metaphysical Lyrics and Poems of the Seventeenth-Century* (Oxford, 1921), an anthology that—boosted by T. S. Eliot's influential review of it—transformed the reception of Donne's poetry in particular and the study of early modern English literature in general. Grierson's anthology was influential—a careful selection of some of the best metaphysical poetry the English Renaissance has to offer—but was it representative? How closely did Grierson's selection of poems resemble what seventeenth-century readers would have encountered?

Scholars have shown over the past decades that early modern readers would have commonly encountered Donne's poetry in individually-crafted manuscript collections. In order to compare the contents of these early modern collections with the contents of Grierson's anthology, we identified the 30 early modern manuscripts with the largest number of poems (by any author whatsoever) and created text files listing each manuscript's contents by author name; we then made a similar file of the contents of Grierson's anthology. We removed four manuscripts that are, in effect, *monoscripts* (collections of individual poets whose poetry does not appear in other manuscripts). We then fed this data into Voyant and used its Bubblelines

visualization tool to compare the contents of Grierson's anthology with the early modern miscellanies (click [here](#) to investigate the data on Voyant). Voyant identifies the top 10 authors in the early modern manuscripts and assigns each a color (see figure 2).

In the visualization presented here, Voyant's Bubblelines chops each manuscript into 100 segments, each represented as a bubble that is sized and colored according to the number of poems in that segment. Gaps in the line indicate material by non-top-10 poets. Figure 1 shows Grierson's anthology compared to half of the early modern miscellanies we included. As you can see, Donne was really popular. But he also frequently appeared with poets who were excluded from Grierson's anthology and who are rarely anthologized today (Richard Corbet, Thomas Cartwright, William Strode). He also did *not* appear regularly alongside the metaphysical poets that Grierson surrounded him with (only four of the top ten poets appear in Grierson's anthology). Donne appears at the head of each of Grierson's three subsections ("Love Poems," "Divine Poems," and "Miscellany"), and Grierson sanctified the practice of treating Donne as the founder of a school ("metaphysical poetry") and the start of an era ("the seventeenth-century").



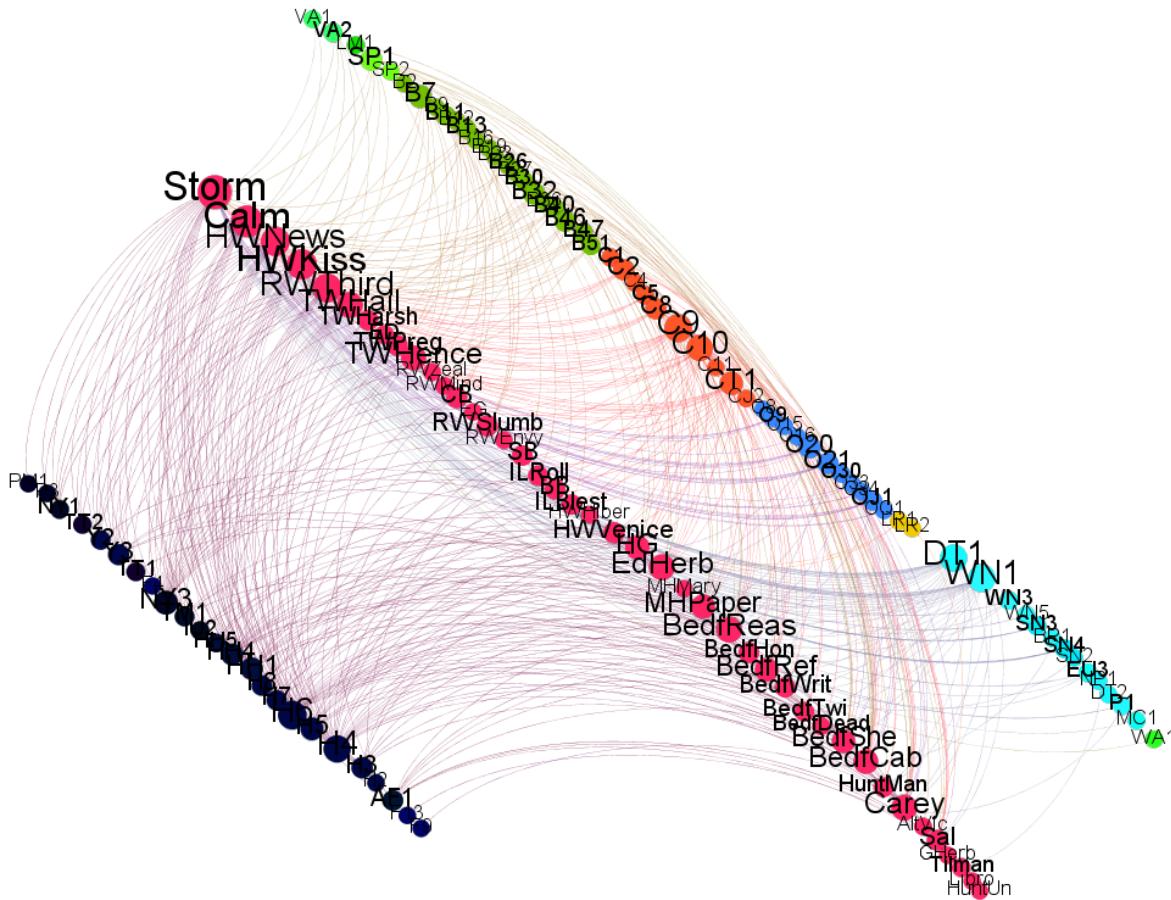
DnJ = John Donne	CwT = Thomas Cartwright	PeW = William Herbert, Pembroke	RnT = Thomas Randolph
CoR - Richard Corbet	JnB = Ben Jonson	RaW = Walter Ralegh	StW = William Strode
CrR = Richard Crashaw	KiH = Henry King		

**Figure 2** Author Contents of Grierson's 1921 anthology vs. Early Modern Manuscripts

## Case Study #2: Distribution and Concentration of Donne's Verse Letters

While the previous example demonstrates the manuscript relationship between Donne's poetry and that of his contemporaries, our second example presents the manuscript relationships shared among one subset of Donne's poems, his verse letters. This network visualization displays the frequency with which John Donne's Verse Letters appear in early modern manuscripts in the form of a "bipartite network of texts and miscellanies" as theoretically outlined by Anhert et al. (50). The data itself has been adapted from materials in the Donne Variorum made using *Digital Donne's* "[Master List of Poems in the 17th-Century Sources](#)" csv file: labels in the visualization correspond to the sigla for the poems and manuscripts. We then input that data into the network visualization tool Gephi, and tailored the visualization to highlight certain network attributes such as degree and distinguish between nodes based on their types (e.g. poems vs. manuscripts, different manuscript repositories). The greater a node is in size, the more connections it has (i.e. a larger node indicates either that the poem it represents appears in more manuscripts or the manuscript it represents contains more of these verse letters). The central line of nodes are the poems, while the right-hand line represents UK manuscripts (colour-coded according to repository) and the left-hand line represents other manuscripts (colour-coded as a group, but not according to repository). While using this visualization in Gephi, a user can select and highlight nodes as a means of exploring relationships, examine the data tables behind the visualization, and augment the features and parameters of the visualization to highlight different relationships and features of the data.

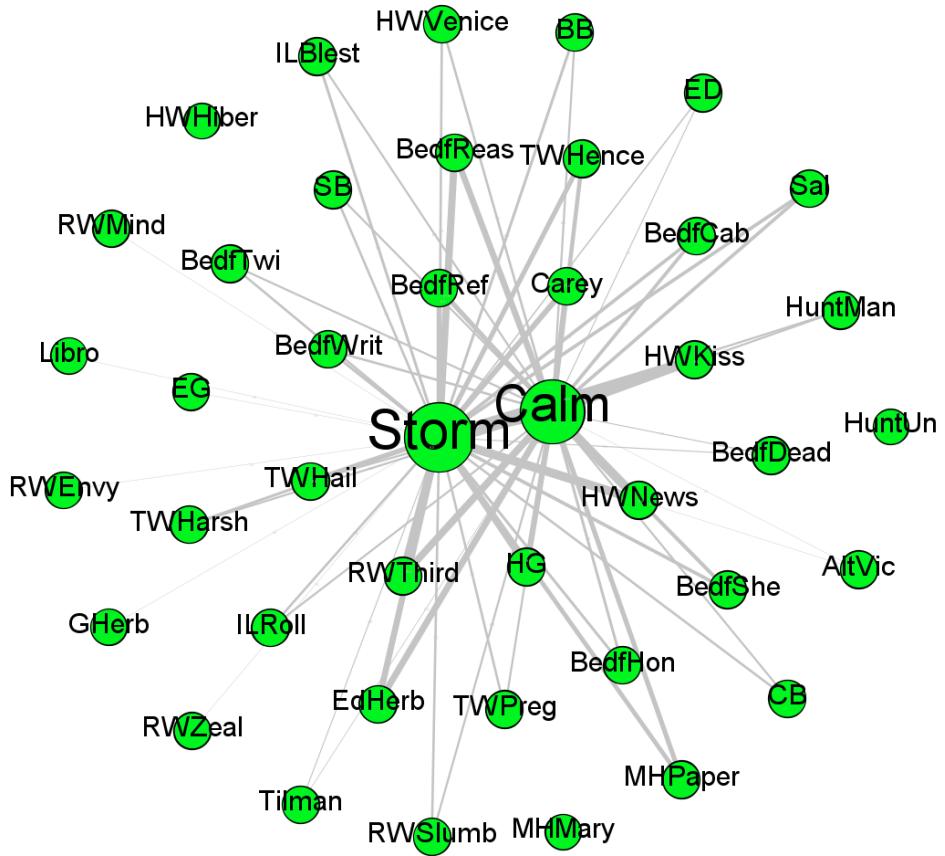
This particular visualization was designed as a research tool for exploring Donne's verse letters within manuscript repositories. It highlights both the frequency with which Donne's Verse Letters appear in early modern manuscripts, where they appear in greatest concentration, and each poem's relationships to every manuscript witness. This visualization highlights the popularity of each verse letter in manuscript circulation and the relevance of each manuscript witness to the verse letters, at least in terms of the number of verse letters a manuscript contains, but one could very easily imagine similar visualizations that link poems to one another directly based on their appearance in common manuscripts as a means of exploring communities of texts or communities of manuscripts in what Anhert et al. call a "projected network of texts" (50).



**Figure 3** A Gephi Network Visualization of the Presence of John Donne's Verse Letters in Manuscripts

For instance, the visualization in figure 4 is a network visualization adapted from the same dataset as the previous example, but it compresses the manuscripts and their repositories into the edges of the visualization. As a result, the specific poem-manuscript relationships are lost but the direct relationship between poems becomes readily apparent as the width of each edge between two poems represents how many manuscripts those two poems appear in together. This particular visualization presents only a portion of the data of the previous visualization. Instead, it shows the manuscript relationship that two closely related poems, “The Calm” and “The Storm” (both

verse letters), share with one another and with all of Donne's other verse letters (but not the relationship of those other verse letters to one another).



**Figure 4.** A Gephi Network Visualization of the relationship that two verse letters—“The Calm” and “The Storm”—share with one another and all other verse letters adapted from the same dataset as Figure 2.

While certain implications of these results are to be expected—“The Storm” and “The Calm” appear together frequently since the latter is a sequel to the former—others are more surprising. For instance, while “The Calm” and “The Storm” appear together in more manuscripts than any other verse letter (thirty of them), both poems share a close connection to a small cluster of familiar epistles—verse letters circulated among friends as opposed to patrons—including *HWNews*, *HWKiss*, and *RWThird*. Indeed, the manuscript connections between these three poems and the other two correlate with their social connections as artifacts exchanged among young men concerned with their place in the world, their potential careers, coterie connection through friendship, and notions of the active and contemplative life. In other words, the visualization above reaffirms preexisting notions about the connection between “The Calm” and “The Storm”

while establishing new evidence for a connected cluster of poems that can inform our readings of these works as social artifacts that share not only common themes, tropes, and conceits, but a common circulation among an early modern audience.

## Conclusion

Starting with John Donne, a poet for who there is a very mature body of scholarship, and who has such a central place not only in manuscript culture of the period, but in our inherited understanding of the literature of the area, we are in a good position to identify research question and begin exploring methods for examining these questions with the resources already available to us. From here, we hope to also explore new possibilities, perhaps arising out of an aggregated, more developed set of data, that could be expanded to a broader re-examination of our critical assumptions about an entire period of English literary history.

## Resources cited:

CELM, the Catalogue of English Literary Manuscripts 1450-1700, compiled by Peter Beal.

<https://celm-ms.org.uk/>

*Digital Donne*, eds. Gary A. Stringer and Jeffrey S. Johnson. <http://donnevariorum.dh.tamu.edu/>

The Folger Union First Line Index, a project of the Folger Shakespeare Library.

<https://www.folger.edu/digital-resources/union-first-line-index>

LINCS: Linked Infrastructure for Networked Cultural Scholarship. <https://lincsproject.ca/>

## Tools used:

*Voyant*. <https://voyant-tools.org/>

*Gephi*. <https://gephi.org/>