MAPPING THE ARCHIVES: EPISTOLARY NETWORKS AND THE STATE PAPERS OF ENGLAND, 1523–1540

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Abstract *As the number of digital archives increases – both traditional archives that have been digitized and 'born digital' collections – so, too, grows the number of tools and methodologies through which they can be better understood. This article explores how archives can be 'mapped' digitally, using network analysis to examine epistolary networks built on the State Papers archives of England. It will outline some of the core contributors to the archives, while also pointing to smaller actors and collections, whose place in the epistolary network and the archives are best revealed when viewed at scale within this 'mapping' process. This article demonstrates that – as with any other historical dataset – understanding the archives and the ways in which they are constructed is vital to further quantitative analysis, and how this is turn may bolster digital historical narratives. As such, this article not only demonstrates the outcomes of adopting digital methodologies, and how they may shape ongoing historical research and narratives, but also illustrates the ways in which the adoption of these quantitative measures allows for a critical reconsideration of historical sources, their origins and the ways in which they can be used.*

Keywords: archives, Tudor England, quantitative network analysis, degree measurements, epistolary networks, digital mapping, network visualization, research practice

International Journal of Humanities and Arts Computing 18.1 (2024): 95–108
DOI: 10.3366/ijhac.2024.0323
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www.euppublishing.com/ijhac

1. INTRODUCTION

As the number of digital archives increases – both traditional sources that have been digitized and born digital collections – so, too, grows the number of tools and methodologies through which they can be better understood. Archives have long been heralded as carefully controlled and constructed sites of power, not least by Michel Foucault's power/knowledge theory, which linked the two concepts intrinsically. In part, this stemmed from what Foucault termed 'discursive formation', the process by which knowledge was ordered and made articulate.[1] For Foucault, archives are systems built to both create and regulate these discursive formations, 'systems that establish statements as events (with their own conditions and domain of appearance) and things (with their own possibility and field of use)'.[2] In archives, knowledge is not just organized but authorized and validated: information therein is not just the available narrative of history, but the consciously presented one. As institutions which are consistently renegotiated and reconfigured, both in their origin and during later editorial processes, archives '*create* the histories and social realities they ostensibly only *describe*'.[3] Within Foucault's power/knowledge framework, where both having and controlling knowledge are forms of power, archives are inherently sites of both passive and active influence, and understanding them fully is vital to both creating and challenging historical narratives.

With a growing number of digital methodologies offering new frameworks for this kind of understanding in the humanities, archives can be reassessed using quantitative approaches to shed fresh light both on the collections themselves and the histories they seek to present. Recent work has sought to expand on the possibilities of using archives in digital research, focusing both on the creation or use of digital archives, as well as the technologies through which this might be achieved.[4] Archives are a unique entry point to the digital humanities, then, and quantitative analysis of these collections can be used not only as the answer to historical questions but also as a mode to inspire further investigation. This article reflects on these possibilities by reconstructing early modern epistolary networks from archives and using quantitative network analysis to examine the make-up of and contributions to the collections. It first introduces an overview to network analysis for archives (*Archives as Networks)*, before qualitatively detailing the State Papers archives used in this article (*State Papers of England, 1523–1540)*. It then moves to quantitative analysis and establishes the greatest contributors to the archives in this period (*Network Measures: Degree*), finally demonstrating how these measures can be used to map the archives (*Overlaps in the Archives*). Though these uses of network analysis do not drastically reimagine Tudor history, it offers a new framework to rethink how we approach historical questions. By acknowledging both the opportunities *and* limitations of exploring archives with digital technologies, this article not only demonstrates

the possibilities of digital investigation of archives for research but also models how the digital humanities themselves can be framed and understood.

2. ARCHIVES AS NETWORKS

Archives are a significant resource but are not without their challenges in the digital humanities: they often form incomplete datasets and different survival rates of authors and recipients can potentially distort results in network analysis. Important or dangerous documents were occasionally victim to deliberate destruction; in the case of Thomas More, little of his correspondence survives, as his household destroyed much of it to protect him from further accusations during his extended stay in the Tower of London. In many ways, both deliberate and accidental absences in material create 'silences' in the archives, moments in which authors and actors are perhaps unexpectedly missing.[5] Often the silence of a particular writer can suggest a change in circumstances or location, and this absence can be just as significant as the presence of a correspondent. In some cases, survival rates reflect contemporary acknowledgement of power and importance: much more of Thomas Cromwell's correspondence survives from later years in power than his early career.[6] Although this may reflect a higher volume being written, it also speaks to a tendency – both in Cromwell's time and our own – to preserve the works of the powerful and politically important. As such, it is imperative to remain aware of any archival prejudice that places more emphasis on conserving that which is known (or presumed) to be valuable.

When using network analysis to understand these archives, then, it is important to establish what this means in terms of data collection for social studies in comparison to more traditional modes. Brea Perry, Bernice Pescosolido and Stephen Borgatti's *Egocentric Network Analysis* provides a critical interrogation of the process involved in network analysis, including how initial data collection methods can shape the network. Perry et al. outline networks as having boundaries – that is, inclusion in the network – defined either emically (by the participants) or etically (by the researcher). Etical research can be more arbitrary, as definitions of relationships and their importance are set by the researcher, who is external to the subjects of the study; emical research, however, is much more reliant on the willingness of participants to disclose information truthfully and accurately to an interviewer.[7] Perry et al. also point to the difference between sociocentric and egocentric models. Sociocentric research creates networks by collecting information from many, often connected, participants, to produce a decentralized view of interactions. In contrast, an egocentric model focuses on one person and allows them and their interactions to define the focus and scope of the gathered data. While archives can create either socio- or egocentric networks depending on the material they contain, they often blur the line between etical and emical models. Although researchers can

term the definition and extent of relationships without relying on participants remembering all their correspondents, the archives are emically defined by deliberate preservation or destruction by the original writers and recipients. Yet using archives for network analysis also offers exclusive and useful ways of approaching history, creating, as Perry et al. have highlighted, 'opportunities to address unique empirical questions that cannot be examined any other way'.[8]

Digital approaches offer a novel way to view these collections at scale, then, in ways not heretofore possible with traditional analogue means, allowing us to 'map' archives in new and exciting ways. Using digital methodologies allows us to view the micro and macro simultaneously, considering archives both as sets of individual documents as well as one cohesive, consciously collated compilation. In viewing archives in such a way, researchers can reflect more critically not only on what is contained within a collection – as well as what may be missing or lost – but also how the archives have come to be, offering potential insight into both contemporary and more modern archival processes.

3. THE STATE PAPERS OF ENGLAND, 1523–1540

This article explores this concept of digital mapping, focusing on letters in the State Papers of England archive between 1523 and 1540.[9] As a state archive, the State Papers represents a curated collection of documents related to the governance of the country, developed out of individual collections, both confiscated and consciously preserved, from the start of the sixteenth century. In the 1830s the State Paper Commission first sought to consolidate the papers of the Tudor reign as the *Calendar of State Papers*, bringing together the records of the State Paper Office and the confiscated papers kept in the Chapter House of Westminster Abbey. When the State Paper Office was subsumed by the larger Public Record Office in 1852, a more comprehensive collection of the papers of Henry VIII began, completed in 1920 as the first edition of *Letters and Papers, Foreign and Domestic, of the Reign of Henry VIII, 1509–1547*.[10] In this long history the contents of the State Papers archives have been shaped by both contemporary and more modern archival processes: as Arnold Hunt phrased it, 'the early modern archives that have come down to us are very often the product of a deliberate but largely invisible process of selection'.[11] While this certainly applies to contemporary processes for document survival, J. S. Brewer explicitly outlined the selection of material for *Letters and Papers*, a process more concerned with the inclusion of available material than exclusion. Brewer followed a different editorial process to that used by the rest of the Calendars; where these focus on one office or state department, *Letters and Papers*:

> embraces an abstract of all Letters and Miscellaneous Papers, illustrative of the reign of Henry VIII, foreign or domestic, printed or in manuscript,

> preserved either in the different departments of the Great National Depository, or in the British Museum, the Bodleian and the Lambeth libraries, or the colleges of Oxford and Cambridge [… and includes] a complete index and summary of the French, the Scotch, the Patent and the Parliament Rolls, the Signed Bills and Privy Seals, the army, navy, ordnance, and wardrobe accounts of the same period, not omitting the transcripts made by the late Record Commission from foreign archives [… which] have now for the first time been brought together and arranged chronologically.[12]

Letters and Papers includes, therefore, a broader range of material than other periods included in the State Papers archives, subject as it is to Brewer's different choices in archival selection.

What does this mean in quantitative terms then? While these experiments use all *available* letters as data for the networks, it is once more worth stating that the archives cannot include everything ever written, and the analysis is to some extent working within 'predefined conditions', set both by contemporaries and archivists. The archival process is therefore key to quantitative analysis, and, as argued, it is important to remain aware of the impact of decisions already made about archival inclusions or exclusions. While the history and make-up of the State Papers has been *qualitatively* detailed, network analysis can also be used to *quantify* this. This article uses letter data taken from *Letters and Papers* on Gale's digitized *State Papers Online* to build epistolary networks for analysis. As part of their AHRC project, *Tudor Networks of Power, 1509–1603*, Ruth and Sebastian Ahnert collected the available metadata of over 130,000 letters (including sender, recipient, date, and place of writing), before extensively cleaning them in a laborious 18-month process, disambiguating and deduplicating letters, places, and names.[13] This article, focusing on 1523–40, uses a subset of this considerable and large-scale work containing 7,202 directed letter connections and 4,314 writers or recipients, using a combination of Gephi and custom-written NetworkX code in Python for both visualization and analysis.

Using letters as the basis for networks builds on understandings of materiality in correspondence, considering letters not only as physical administrative documents, but also as tangible evidence of connections, emphasizing how contemporaries viewed this as a primary function of letter-writing.[14] Understanding the significance of letters as social markers emphasizes the usefulness of correspondence when engaging in network analysis. Inherently containing to and from categories as part of the correspondence process, letters can be abstracted into data for directed networks, in which relationships can be measured and explored in mutual and reciprocal terms. By examining these letter networks, statistical measures can be used to understand the shape of the archive in different ways.

4. NETWORK MEASURES: DEGREE

Some of the most regularly used measurements in networks are the collectively termed *centrality measurements*, which offer a means of assessing the most 'central' nodes in a network, including assessing opportunities to act as an intermediary (betweenness); identifying nodes in proximity to other actors of influence (eigenvector); and calculating actors in close contact to all members of the network (closeness). These measures are often used as proxies for power and importance and can be used for a well-rounded view of interactions in social networks. While acknowledging the usefulness of these, this article will focus on another measurement, degree, which quantifies the number of connections each node has in a network. This article uses degree not only as a measure of individual influence in the network, but also as a means of conceptualizing wider network structures and how this relates to archival understandings.

Degree is most useful for identifying the most active members of a network and assessing the 'busy-ness' of each node. Because the network is directed, there may be two edges between the same two nodes, reflecting the bidirectionality of letter communication. Essentially, degree here is measured in terms of the number of unique people found in the inbox and the number found in the outbox, but does not consider the total number of letters. As such, if person A writes to person B 10 times, but gets no response, this counts as only one edge and thus a degree score of one; however, if A writes to B only once but B writes back, this is then two edges and a degree score of two. In these measurements, degree does not count the number of contacts or number of letters, but number of distinct, directed interactions. Identifying the nodes with the highest degree score in this network can detect the largest contributors to the archives in this period. Given the nature of the State Papers collection outlined in the introduction, these actors are therefore those most connected to or involved in state business and can be identified by ranking the top 25 scoring correspondents for degree in the 1523–40 network.

It is unsurprising – and perhaps expected – that Henry himself, alongside Thomas Cromwell and Thomas Wolsey, the two chief ministers for his reign, claim the top ranks for degree in this network. While to a large extent Henry's busy-ness in the network reflects his role as king, the high rankings of Cromwell and Wolsey attest to the volume of work they both did in service to their royal master. The top 25 is predictably dominated by these closest advisors – Thomas Wriothesley; Thomas Howard, Duke of Norfolk; Thomas Cranmer, Archbishop of Canterbury; Thomas Dacre; Charles Brandon, Duke of Suffolk; William Fitzwilliam, Earl of Southampton; Thomas Magnus; Brian Tuke; Stephen Gardiner; Thomas Audley – many of whom were important court administrators or key members of the newly influential Privy Council, which as an institution was also a significant correspondent in the archives in 1523–40,

Table 1. Top 25 ranked degree centrality scoring nodes, with corresponding scores.

Rank	Name	Score
1.	Thomas Cromwell	2,134
2.	Henry VIII	726
3.	Cardinal Thomas Wolsey	449
4.	Arthur Plantagenet, Lord Lisle	382
5.	Honor Plantagenet, Lady Lisle	195
6.	Thomas Wriothesley	161
7.	Charles V, Holy Roman Emperor	149
8.	Thomas Howard, Duke of Norfolk	139
9.	Archbishop Thomas Cranmer	105
10.	Francis I, King of France	104
11.	James V, King of Scotland	100
12.	Thomas Dacre	96
13.	Thomas Darcy	82
14.	Cardinal Reginald Pole	71
15.	The Privy Council	60
16.	Anne du Montmorency	59
17.	Charles Brandon, Duke of Suffolk	48
18.	William Fitzwilliam, Earl of Southampton	47
19.	Thomas Magnus	41
20.	Desiderius Erasmus	39
21.	Sir Brian Tuke	38
22.	Bishop Stephen Gardiner	37
23.	Jean du Bellay	37
24.	Thomas Audley	35
25.	Philip Melanchthon	35

ranking fifteenth in degree. While maintaining correspondence in a much smaller volume than Cromwell and Wolsey, these actors still held many contacts and regularly wrote to or from court, keeping up to date with ongoing state affairs. These rankings support traditional narratives of importance, but also suggest perhaps more unexpected actors of interest. For example, Thomas Dacre ranks twelfth in the network for these 17 years, despite writing only for a short period of time: a close advisor of Henry VII, Dacre died on 24 October 1525, only two years into the period for this network. Despite this, he still ranks higher than other actors traditionally considered important in historiography, such as Suffolk, Gardiner, and the Privy Council who were present and active at court throughout this period.

For some, their high degree ranking stems from how surviving letters have been collected: Arthur Plantagenet, Lord Lisle, and his wife, Honor Plantagenet, Lady Lisle, have a very high degree ranking given Lisle was only Deputy of Calais. While his placement in Calais necessitated his writing to court – rather

than regular physical attendance – it was his arrest in 1540 that guaranteed the survival of so much correspondence, seized alongside him and stored as state documents. While Lady Lisle was not arrested, many of her own writings were included in the seizure, accounting for her high degree ranking, and her place as the only female writer in the top 25. Although most of the State Papers are political in essence, seizures and accidental inclusions occasionally add an extra 'personal' dimension to this archive. It is important to acknowledge how different parts of the collection have survived, and how this may influence the ranking of individual nodes in the network.

Another large portion of these rankings is made up from foreign monarchs and ambassadors: Charles V, Francis I, James V, Anne du Montmorency, and Jean du Bellay. While their presence in the English State Papers is naturally smaller than in their own respective domestic state archives, these high-ranking foreign writers indicate the extent to which different national State Papers overlapped and the impact of European politics on English early modern letter networks. Some of Henry's key advisors in this list also acted as foreign ambassadors: Stephen Gardiner was resident ambassador in France from 1535 to 1538, and Thomas Magnus was deployed on several diplomatic missions to Scotland between 1524 and 1529. In this way, many of the largest contributors to the archives did so by holding multiple offices or roles, and as such had more cause to write to a wider variety of people, contributing to their higher degree score. In doing so, they are also in part responsible for this overlap or connections between national archives, reflecting again both contemporary archival practice and more modern editorial ones.

Finally, a number of these high-ranking nodes reflect contemporary events or issues. Desiderius Erasmus and Philip Melanchthon were both famous humanist scholars of the early sixteenth century, involved to differing extents in the religious Reformation across both mainland Europe and England. Both men were in contact with Henry himself, as well as other humanists and reformists at his court, reflecting the ongoing correspondence around political and religious discourse in England in this period. Cardinal Reginald Pole, self-exiled from England from 1532 in opposition to Henry's divorce from Catherine of Aragon and break from the Roman Catholic Church, wrote extensively to the king, the Pole family in England, and various other members of the Church across Europe throughout Henry's reign. Lastly, while Thomas Darcy worked for Henry on the Scottish borders from the 1520s, he was more active in the epistolary network as a leading member of the Pilgrimage of Grace rebellion in 1536.

5. OVERLAPS IN THE ARCHIVES

These degree measurements give insight into individuals in the archives, but they can also be used as a tool to map the archives and gain insight into collection and

archival processes. While the State Papers are commonly considered a collection of the documents belonging primarily in this period to Thomas Cromwell as the Principal Secretary (later renamed Secretary of State), the letter network demonstrates that the archives are much less centralized within this one main office. Rather, the State Papers are made up of eclectic sets of overlapping correspondences from several different original collections. Each collection – or a number of these individuals listed here – make up an egocentric or ego network, a network consisting of just one node and their neighbours, that then overlap with one another. Several writers in this archive appear in the intersection between these ego networks; while their own individual papers may not form part of the archives, they exist in a number of these sub-collections. At the same time, certain members of the archives are demonstrably significant in their own right, rather than merely existing in the periphery of another person's correspondence collection. This is one of the fundamental problems with regarding the State Papers as the collection of the Principal Secretary alone: some of the most qualitatively and quantitatively significant actors – Henry VIII, Thomas Wolsey, and other European monarchs – would evidently remain in the State Papers without their connections to Cromwell or other Principal Secretaries of this period.

Degree measurements can also be used then as a way of understanding this overlap and considering how the archive has been shaped. This not only offers a means of contextualizing individual actors and their correspondence, but creates a means of measuring and defining the archives in a way that has not been achieved by traditional qualitative methods. Focusing specifically on the Giant Component – the largest, connected portion of the network – the most prominent ego networks can be mapped out to visualize the overlap of different collections and consider to what extent these dominate the archives, focusing on the top five degree scoring nodes: Cromwell, Henry, Wolsey, and Lord and Lady Lisle. Using custom-written code with Python's NetworkX, the nodes are sorted into seven categories according to their relationship to the top five scorers: if they are a neighbour to just one of these top five; a neighbour to two or more, demonstrating the overlap between collections; or not connected to any of these five.[15] From this, the proportion of the archive belonging to each of these five actors in this period could be calculated.

Having assigned these categories in Python, the network was exported into the visualization software Gephi (Figure 1). The graph is arranged using a force-directed layout algorithm, which arranges nodes according to their connection with one another: nodes which have a strong connection (i.e., have a large body of correspondence passing between them) are placed close to one another, while simultaneously pushing away those they are not connected to. In this graph each node is coloured according to its category, and each of the top five nodes are indicated by their slightly larger size and are circled in white.

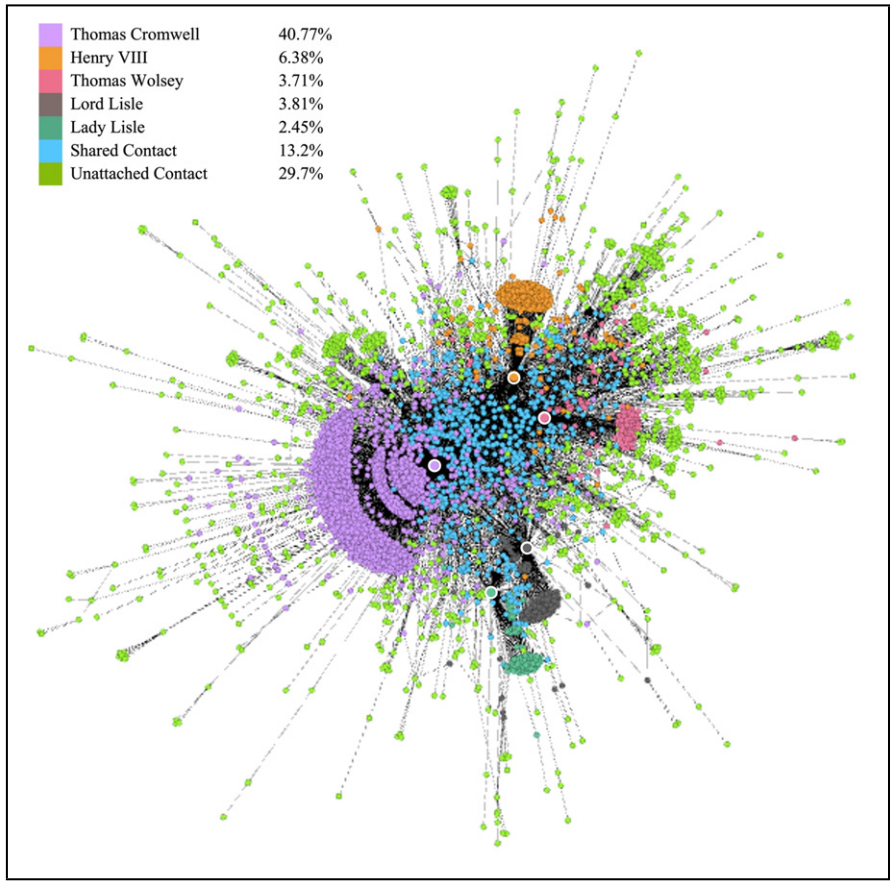

Figure 1. The Giant Component from the 1523–40 network, with nodes coloured according to overlap between ego networks of the top five degree scorers (Cromwell, Henry VIII, Wolsey, Lord Lisle, and Lady Lisle).

Unsurprisingly, Cromwell claims the largest portion of the network, with 40.8 per cent of those in the archives (coloured purple in Figure 1) corresponding with him but not with the other four highest degree scoring nodes. In large part, this is because Cromwell held many one-degree contacts, actors with only one link in the network. In fact, of his 1,598 incoming correspondents, 1,009 – 63 per cent – communicated only with Cromwell in the network. Unlike other nodes in the network that exist in an overlap, these nodes are only in the network because of their connection with the chief minister. In contrast, Henry (orange) and Wolsey (pink) hold only a small proportion of the network each, as theirs alone given their high-ranking degree score, taking 6.4 per cent and 3.7 per cent,

respectively. These percentages suggest that, while Henry and Wolsey both had many contacts, there is a sizeable overlap between these contacts and those of other high-ranking nodes.

There is also a distinct overlap between just Lord and Lady Lisle (1.03 per cent), although this is expected given their linked personal (as well as professional) circles and the seizure of their papers one as collection. Interestingly, at 3.8 per cent Lord Lisle claims slightly more of the network as his alone than Wolsey does. This likely reflects the extent to which the Lisle Papers are a more distinct sub-collection within the State Papers, holding less of an overlap with some of the central figures, as well as the different time frames they cover: Lisle's presence in the network is most distinctive after 1533, three years after Wolsey's death.

The total overlap – nodes that are connected to two or more of the top five scorers – makes up 13.2 per cent of the network, a larger portion than Wolsey, Henry, and Lord or Lady Lisle hold on their own. This is a high percentage of the giant component, given that these are contacts shared between just five of a 3,966-person component. Such a large overlap between just the five largest contributors to the archives suggests that affairs of state were not just the purview of one member of the court or administration but were regularly shared out. Table 2 breaks this down further to indicate how this percentage is made up of different combinations. Perhaps as expected, the largest overlaps occur in a combination of Cromwell, Wolsey, and Henry, accounting for 7.86 per cent of the component. Interestingly, for both Henry and Wolsey, the percentage of the network they share with Cromwell alone amounts to around half of their independent contacts.

Perhaps most interestingly, 29.7 per cent of the correspondents – the second largest portion in this diagram, shown in green – are not connected to any of the top five contributors. This means that they exist outside of these five ego networks and take their place in the State Papers by other means. It is important to note at this point as well that we are still talking about just the main component: there are also another 318 correspondents that make up a further 160 smaller components. Those in the smaller remaining components are often writers who wrote to each other in a small group rather than to ministers at court, or any of their contacts. Quite often, these smaller groups contain household correspondence that has been accidentally included with state business, or letters that have been intercepted and stored in the same way. One such case is Jehan Lange, a French merchant, visiting the English court in January 1537, meeting the king and facilitating the sale of 'my image, Jacques Poullain's image, [Thibault Comtet's] mirror, a hat of Mons. Caillot, and a collar and vizor (*cachenes*), and a martin (*une martre*), and some linen worth 400 cr. which belongs to Jan de Gran'.[16] Writing only to his family, friends, and fellow merchants at home in France, Lange's letters were intercepted in search of

Table 2. A breakdown of the 13.2 per cent of the graph as a 'Shared Contact' into the different overlap combinations.

Shared contact combination	**%**
Cromwell and Henry	3.3
Henry and Wolsey	1.56
Cromwell, Henry, and Wolsey	1.54
Cromwell and Wolsey	1.46
Cromwell and Lord Lisle	1.21
Lord Lisle and Lady Lisle	1.03
Cromwell, Henry, Lord Lisle, and Wolsey	0.76
Cromwell, Henry, and Lord Lisle	0.68
Cromwell, Lord Lisle, and Lady Lisle	0.55
Cromwell, Henry, Lord Lisle, Lady Lisle, and Wolsey	0.25
Lord Lisle and Wolsey	0.18
Cromwell and Lady Lisle	0.13
Cromwell, Henry, Lord Lisle, and Lady Lisle	0.13
Cromwell, Lord Lisle, and Wolsey	0.13
Cromwell, Henry, and Lady Lisle	0.08
Henry, Lord Lisle, and Wolsey	0.08
Cromwell, Lord Lisle, Lady Lisle, and Wolsey	0.05
Henry and Lord Lisle	0.05
Lady Lisle and Wolsey	0.03

important information on French affairs and kept among other state materials.[17] While the reasons his letters are included are openly acknowledged in other letters in the archives, Lange's position in the network may act as a profile, a means by which to identify other similar material.

Quantitative analysis offers a quick means to identify these periphery writers in the archives, often included through interception, accidental inclusion, and Brewer's editorial process. But mapping the archives in such a way demonstrates that, even in the main component, almost a third of the archive is made up of a medley of these smaller ego networks, likely included in the same way. Furthermore, though many writers in the archives appear in an overlap between the five largest contributors, a number of these nodes would still operate as a member of their own collection without these five. Just as Wolsey and Henry would still appear in the archives without Cromwell, so, too, would other nodes such as Cranmer or European monarchs such as Francis I and Charles V hold substantial individual collections without communicating with one of the top five contributors mapped above. In fact, when measuring the communication links themselves instead of the writers, 44.99 per cent of all the edges in the network do not involve any of these top five, reflecting communication between smaller actors. Cromwell, as the largest contributor, is part of only 31.5 per cent of

these edges in comparison. Even with Cromwell, Wolsey, Henry, and the Lisles holding the largest contributions, the State Papers still cannot be definitively classed as 'their' collection, but truly papers belonging to the whole state and even further abroad. Though Cromwell is still undeniably the most dominant *single* contributor to the archives, it is unfair to suggest that this is simply because they are the papers of his office. As scholarship continues to study the composition of the State Paper archives, network analysis offers a means of formally discerning different segments of the collection and engaging with an enormous corpus of material that could not be so succinctly conceptualized with traditional and analogue modes of analysis.

6. CONCLUSION

Using digital network analysis to map the archives offers a means to research *around* both actual and perceived archival bias. In applying these mapping methodologies to the letter metadata from the Tudor court, we can demonstrate not merely the roles of traditionally important actors – such as Cromwell, Wolsey, and Henry VIII – but also the extent to which they were *not* involved in aspects of the archives, offering new means by which to both engage with and challenge traditional archival narratives. More importantly, however, both these quantitative experiments and other, broader, digital approaches are not the answer to historical queries, but rather new ways of asking questions. How have the collections been formed? Who are the largest contributors and why? Who exists inside – and, just as importantly, outside – of these overlaps? In doing so, mapping the archives in such a way not only offers a mean to reconceptualize the size and connectivity of collections – something that basic visualizations of networks are wont to offer at a quick glance – but prompts us to critically reconsider historical sources, their origins and how they can be used. Doing so does not fundamentally shift understandings of history and significant events or people, but offers an additional means to conceptualize and explore them. At its most fundamental quantitative network analysis 'makes it possible, with relative ease and speed, to measure the relationships between many entities in multiple ways, allowing a rich, multidimensional reading of complex systems never possible before'.[18] More than this, it prompts us to consider how nuanced and custom digital tools and code might allow us to push these kinds of questions and methodologies even further, considering how digital humanities in practice might contribute to and expand traditional narratives, not just mapping archives, but history itself.

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END NOTES

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[5] For more, see L. F. Klein, 'The image of absence: archival silence, data visualization, and James Hemings', *American Literature*, 85, no. 4 (2013), 661–88.

[6] Unlike More, who predicted his arrest with time to destroy much of his work, Cromwell was taken by surprise with his arrest and, as such, most of his papers remained to be confiscated. While a large volume of Cromwell's incoming correspondence survives in the archives, much of his outgoing material is missing, however. The volume of incoming correspondence indicates how much of Cromwell's business was conducted through letters and implies that the number of outgoing missives was probably relative to his inbox, even if exactly what is missing cannot be quantified.

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[13] Ahnert and Ahnert, *Tudor Networks of Power.*

[14] G. Schneider, *The culture of epistolarity: vernacular letters and letter writing in early modern England, 1500–1700* (Newark, NJ, 2005), 27.

[15] Code for this article can be found at https://github.com/CBurge95/Mapping_Archives/tree/main

[16] *L&P*, 15, 47.7.

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