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## Networking in the Republic of Letters:

### Magliabechi and the Dutch Republic

Recent years have seen an increase in the use of network analysis as a method for analyzing large data sets of correspondence within the Republic of Letters. The Republic of Letters was the self-proclaimed community of scholars that became popular across Europe throughout the course of three centuries (1500–1800). The Latin expression *Respublica literaria* appeared for the first time in 1417; Desiderius Erasmus (1466–1536) recovered it in 1500. Its very expression connoted mutual support, reciprocity, tolerance, and the accumulation of knowledge, emphasizing independence from the pressure of political structures, ecclesiastical interests, and social hierarchies.<sup>1</sup>

The relational character of the Republic of Letters has driven the turn to network analysis: It implies the existence of scholars (nodes) connected to one another by means of letters (edges). Not by chance, as Stolzenberg has pointed out, has the “historian’s interest in the early modern concept of the Republic of Letters ... grown in tandem with an interest in social networks.” This interest

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1 Howard Hotson and Thomas Wallnig (eds.), *Reassembling the Republic of Letters in the Digital Age: Standards, Systems, Scholarship* (Göttingen, 2019); Dan Edelstein et al., “Historical Research in a Digital Age: Reflections from the Mapping the Republic of Letters Project: Historical Research in a Digital Age,” *American Historical Review*, CXXII (2017), 400–424; Dirk van Miert, “What Was the Republic of Letters? A Brief Introduction to a Long History,” *Groniek*, CCXL (2014), 278–279.

is further evinced by the proliferation of several large-scale digital-network projects that have started to map sections of the letter network in the Republic. But although the Republic of Letters has attracted much scholarly attention in conjunction with a global turn in the practice of the digital humanities, studies that offer an actual implementation of how the tools and theories employed by social scientists help to understand the past have not seen a parallel increase. Much work remains to be done in devising network models capable of providing nuance, depth and, most importantly, meaning to historical metadata.<sup>2</sup>

Temporality is among the most fundamental dimension of historical networks, but it is also the least studied and theorized. The Republic of Letters was by no means a static web; its citizens were constantly on the move. New generations of scholars entered the network, while old generations gradually faded away. Traveling scholars established networks abroad, while others retreated out of fear of the Inquisition. Friendly relationships turned hostile; disputes were settled. Each change determined scholars' place in the network.<sup>3</sup>

This network study of the career of Antonio Magliabechi (1633–1714), librarian to the Medici family in Florence, shows the evolving dynamics of the Republic of Letters. It draws from two databases—the digitized card catalog of Magliabechi's correspondence and the *Catalogus Epistularum Neerlandicarum* (CEN)—a Dutch national database established around 1985 to pull together library holdings of letter collections in the Netherlands. Overlapping these two databases permits the creation of an ego-net to

2 Daniel Stolzenberg, "A Spanner and His Works: Books, Letters, and Scholarly Communication Networks in Early Modern Europe," in Ann Blair and Anja-Silvia Goeing (eds.), *For the Sake of Learning: Essays in Honor of Anthony Grafton* (Boston, 2016), 157–158. The best-known digital-network projects all map relationships between early modern scholars: Six Degrees of Francis Bacon (Carnegie Mellon University), Mapping the Republic of Letters (Stanford University), Circulation of Knowledge/ePistolarium (Huygens Institute for the History of the Netherlands in Amsterdam), RECIRC (University of Galway), Cultures of Knowledge (Oxford University), and SKILLNET (University of Utrecht).

3 Hotson and Walling (eds.), *Reassembling the Republic of Letters in the Digital Age*, 343–344. See also Paul D. McLean, *The Art of the Network: Strategic Interaction and Patronage in Renaissance Florence* (Durham, 2007), 12–13; Claire Lemerrier, "Taking Time Seriously: How Do We Deal with Change in Historical Networks?" in Marten Düring, Markus Gamber, and Linda Reschke (eds.), *Knoten und Kanten III: Soziale Netzwerkanalyse in Geschichts- und Politikforschung* (Bielefeld, 2015), 183–211.

perform a series of analyses of how Magliabechi constantly moved between interconnected and decentralized networks. On the one hand, he had to guarantee that his network was secure and trustworthy in view of the many confessional antagonisms of his time that required sensitive information to be kept secret and confidential. On the other hand, he desired to participate in the international exchange of ideas by becoming a broker, reaching out to others who could give him access to innovative knowledge and resources. Hence, he needed to strike the right balance between closure—a property of densely interconnected networks—and brokerage, a struggle that continued throughout his entire epistolary career.<sup>4</sup>

The last two decades have witnessed the proliferation of online catalogs of letters primarily devoted to the letters of one person, the ego, while neglecting the other members of the network, the alters. Bridging these “data silos” calls for an approach capable of analyzing the alters connecting multiple networks. The CEN offers a solution to this problem. As a meta-archive, the CEN contains the correspondence of several scholars whose overlap generates a network with many cross-linked connections. This overlap warrants the use of centrality measures, which are less suited to an analysis based on separated silos. The first important point to note in this analysis is that the temporal component of brokerage is not appropriately covered in histories of the Republic of Letters. A second point is that brokerage is not possible without closure. This article demonstrates how a qualitative analysis of archival sources can combine with quantitative methods of

4 For Magliabechi, see especially Jean Boutier, Maria Pia Paoli, and Corrado Viola (eds.), *Antonio Magliabechi nell' Europa dei saperi* (Pisa, 2017); van Vugt, “The Structure and Dynamics of Scholarly Networks Between the Dutch Republic and the Grand Duchy of Tuscany in the 17th Century,” unpub. Ph.D. diss. (Scuola Normale Superiore di Pisa, 2019), available at <https://hdl.handle.net/11245.1/94502a28-e642-4ecc-81e2-100fda93ecba> (accessed March 13, 2022).

The CEN data set in XML format comes from the Online Computer Library Center (OCLC) and the Royal Dutch Library (KB), October 2019. It was processed for the analyses in this article (version February 2021). Examples of possible processing operations were filtering, transforming, enriching, cleaning, interpreting, combining, or reconciling. At present, the collection consists of 584,723 references and abstracts of single letters and accumulated bilateral epistolary exchanges from 1303 to 2003, held at several Dutch institutions. Since January 2020, the CEN is available via Worldcat (<https://picarta.on.worldcat.org>, (accessed November 26, 2020).

network analysis to reveal the stories that shaped the social structure of the Republic of Letters.<sup>5</sup>

The originality of this research note lies in its computational methodology, which enables us to study Magliabechi's entire early-modern network and to identify patterns within it that are detectable only through a massive accumulation of data. This network analysis can also reveal the activities of brokers and intermediaries whose stories have rarely been told and to provide the centrality measures with which to quantify their importance. The diachronic approach adopted herein has the additional benefit of tracing the evolution of brokerage itself over time.

**METHODOLOGY: MAGLIABECCHI AND THE *CATALOGUS EPISTULARUM NEERLANDICARUM*** Magliabechi was a true "*bibliotheca vivens*"—an epithet conferred on him by Pierre Bayle (1647–1706). Magliabechi kept the citizens of the Republic of Letters informed about the latest developments in the scholarly world by circulating information about recently published books and newly discovered manuscripts. Over time, Magliabechi became one of the most consulted scholars in Europe, his vast correspondence network stretching all across Europe. His enormous epistolary reach, however, raises the question of how he coordinated his relationships across the confessional and cultural borders of his day. To answer this question, we first employ data about Magliabechi's correspondence and then mine all of his correspondents using the CEN. In theory, this strategy forms an ego-net—a network that involves all of Magliabechi's correspondents (alters) and all the relations between them. The metadata of Magliabechi's correspondence, recording the names of his correspondents and the dates and places involved, derive from the digitized card catalog of the National

5 Examples of catalogs are the Early Modern Letters Online (EMLO), available at <https://emlo.bodleian.ox.ac.uk/home> (accessed July 6, 2021); the Epistolarium, available at <https://ckcc.huygens.knaw.nl/epistolarium/> (accessed July 6, 2021). Ruth Ahnert and Sebastian E. Ahnert, "Networking the Republic of Letters," in Hotson and Wallnig (eds.), *Reassembling the Republic of Letters in the Digital Age*, 401. For meta-archives and the importance of connected collections, see Ahnert and Ahnert, "Networking the Republic of Letters," 402; for brokerage and closure, Ronald S. Burt, *Brokerage and Closure an Introduction to Social Capital* (New York, 2005), which argues that brokerage and closure are two complementary elements of social capital; for networks as forms of digital storytelling, Tommaso Venturini et al., "How to Tell Stories with Networks: Exploring the Narrative Affordances of Graphs with the Iliad," in Mirko Tobias Schäfer and Karin van Es (eds.), *Datafied Society* (Amsterdam, 2017), 155–169.

Library of Florence as well as a printed inventory. From these data, complemented with archival research of unpublished letters, a network of 2,112 Italian and European correspondents emerges between the years 1650 and 1714.<sup>6</sup>

The CEN helps to add alter ties to Magliabechi's first-degree contacts and their own immediate contacts. This Dutch national database was established around 1985 as an ambitious and collaborative initiative to pull together library holdings of letter collections in the Netherlands. Metadata fields include the names of senders and recipients, places and dates of sending, number of letters, language, and shelf mark. Taken together, all of these data form a unique witness to the Dutch early modern scholarly community, making it possible to create a network of multiple overlapping epistolary archives. In fact, Magliabechi corresponded with almost all the eminent figures in the Dutch Republic of his time; their respective corpora of correspondence largely appear in the CEN. The combination of Magliabechi's correspondence and the CEN results in an ego-net consisting of 3,766 nodes and 4,544 edges for the period from 1650 to 1714. The network is undirected and unweighted. The focus is not so much on the direction, volume, and frequency of the exchanges as on whether two correspondents were in contact with each other and, if so, when.<sup>7</sup>

Several important contacts of Magliabechi are absent from the collections of the CEN, such as the Amsterdam bookseller Pieter Blaeu (1637–1706), an important mediator between the Dutch

6 The digitized card catalog of the National Library of Florence is available at [https://catalogohistorici.bdi.sbn.it/dett\\_catalogo.php?IDCAT=10](https://catalogohistorici.bdi.sbn.it/dett_catalogo.php?IDCAT=10) (accessed November 19, 2020). Manuela Doni Garfagnini, *Lettere e carte Magliabechi: inventario cronologico* (Rome, 1988). Although the major part of Magliabechi's correspondence carries a date, the 6% of cases in which the years of exchange are missing provide the beginning of Magliabechi's correspondence (1650) and his death (1714).

7 Magliabechi's surviving communication with the Dutch Republic, which runs from 1660 until 1714, shows contact with fifty-four persons, most of them philologists and printer-publishers. Overlap with the CEN shows that forty-three of these correspondents are part of the CEN database. The reconciliation of all the different forms of timekeeping in the CEN was a laborious and challenging task. Even some of the letters cataloged individually lack a date, or have an ambiguous or unreliable one. Those with missing data (2999, s.a., [date unknown], 15XX–20XX, “must be sent after 1672”), and uncertain and vague entries such as “Monday evening” had to be replaced with a timestamp, recording the latest date of birth and earliest date of death of the two correspondents to indicate the earliest and the latest possible year of sending. In the absence of such data, the time span of Magliabechi's correspondence (1650–1714) was recorded.

Republic and the Medici court. Hypothetically, if Blaeu and his correspondents were added as nodes to Magliabechi's network, they could occupy structural holes otherwise missing from the network, and the overall picture derived from Magliabechi's ego-net would change. Recent research has proven, however, that letter archives are remarkably robust regarding missing data; centrality ranking remains stable even when entire letter catalogs are removed. Moreover, as underlined by Crossley et al., we cannot interpret network measures in an accurate way without bringing narrative accounts to bear on our analysis. Transparency about missing data and the validity of our interpretation depends on a historian's critical eye and a reading of the sources.<sup>8</sup>

**BROKERAGE IN THE REPUBLIC OF LETTERS** Early modern historians commonly use the term *brokerage* in their studies, portraying brokers as figures that connect disparate social worlds. One well-known such broker was the German theologian Henry Oldenburg (1619–1677), who made his career in England as secretary of the Royal Society. Tapping into an extensive network of contacts throughout the world, Oldenburg carefully accumulated knowledge encompassing everything from astronomy to chemistry. To paraphrase Burke, Oldenburg was eminently equipped to be an information broker. French Minister of State Jean Baptiste Colbert (1619–1683), a veritable “information master,” believed that virtually all knowledge was of concrete value to government. He valued input from humanists, ecclesiastics, merchants, and engineers alike and managed an international network of scholars to collect knowledge from multiple fields. The Dutch burgomaster Gijsbert Cuper (1644–1716) bridged the world of politics and scholarship by employing his political connections for the sake of learning. The French astronomer Nicolas-Claude Fabri de Peiresc (1580–1637) was renowned as the “foremost broker of the European-wide Republic of Letters,” and Findlen recognized the Jesuit Athanasius Kircher as “a powerful broker within the

8 Alfonso Mirto and Henk Th. van Veen, *Pieter Blaeu: Lettere Ai Fiorentini: Antonio Magliabechi, Leopoldo e Cosimo III de' Medici, e Altri, 1660–1705* (Amsterdam, 1993); Yann C. Ryan and Sebastian E. Ahnert, “The Measure of the Archive: The Robustness of Network Analysis in Early Modern Correspondence,” *Journal of Cultural Analytics*, VI (2021), 57–88; Nick Crossley et al., *Social Network Analysis for Ego-Nets* (London, 2015), 105–126.

Republic of Letters.” Magliabechi surely belongs to this distinguished list.<sup>9</sup>

Recently, historians have begun to use social-network analysis and quantitative methods to investigate the concept of brokerage in large collections of historical data. Metrics such as betweenness centrality can illuminate the role of “intelligencers” or bring attention to overlooked figures in historical scholarship. Even though brokerage has undergone both qualitative and quantitative analysis, it has yet to be fully explicated. Brokerage properly understood must be seen as a dynamic, continually evolving process in the network. In most studies of the Republic of Letters, brokerage is treated as a static attribute of a particular individual, the end stage or outcome of someone’s rise to fame. Rather than merely reiterate that Magliabechi was an influential broker in the Republic of Letters, however, we should determine how he became a broker and maintained that standing throughout the course of his career. Magliabechi’s position in the network was subject to change as the members continued to form, negotiate, and sever connections. In short, we need to go beyond the static view of brokerage to offer a new perspective on the evolution of brokerage in early modern society.<sup>10</sup>

9 Peter Burke, *A Social History of Knowledge* (New York, 2008), 25; Jacob Soll, *The Information Master: Jean-Baptiste Colbert’s Secret State Intelligence System* (Ann Arbor, 2009); Bianca Chen, “Digging for Antiquities with Diplomats: Gisbert Cuper (1644–1716) and His Social Capital,” *Republics of Letters: A Journal for the Study of Knowledge, Politics, and the Arts*, 1 (2009), available at <https://arcade.stanford.edu/rofl/digging-antiquities-diplomats-gisbert-cuper-1644-1716-and-his-social-capital> (accessed November 19, 2020); *idem*, “Politics & Letters: Cuper as a Servant of Two Republics,” in Marika Keblusek and Badeloch Vera Noldus (eds.), *Double Agents: Cultural and Political Brokerage in Early Modern Europe* (Boston, 2011), 71–93; Paula Findlen, “How Information Travels: Jesuit Networks, Scientific Knowledge, and the Early Modern Republic of Letters, 1540–1640,” in *idem* (ed.), *Empires of Knowledge: Scientific Networks in the Early Modern World* (New York, 2019), 82; Peter N. Miller, “Nicolas-Claude Fabri de Peiresc and the Mediterranean World: Mechanics,” in Christiane Berkvens-Stevelinck, Hans Bots, and Jens Häselser (eds.), *Les Grands Intermédiaires de La République Des Lettres* (Paris, 2005), 103–125; *idem*, Peiresc’s Mediterranean World (London, 2015); Findlen, *Possessing Nature: Museums, Collecting, and Scientific Culture in Early Modern Italy* (Berkeley, 1994), 381. For Magliabechi’s intermediary role, see Mario Rosa, “Un ‘médiateur’ dans la République des lettres: le bibliothécaire,” in Bots and Françoise Waquet (eds.), *Commercium Litterarium: La communication dans la République des Lettres: Forms of Communication in the Republic of Letters 1600–1750* (Amsterdam, 1994), 81–101.

10 Ahnert and Ahnert, “Metadata, Surveillance and the Tudor State,” *History Workshop Journal*, LXXXVII (2019), 27–51; *idem*, “Protestant Letter Networks in the Reign of Mary I: A Quantitative Approach,” *English Literary History*, LXXXII (2015), 1–33; Evan Bourke, “Female Involvement, Membership, and Centrality: A Social Network Analysis of the Hartlib Circle,” *Literature Compass*, XIV (2017), 1–17, which uses betweenness centrality to show that women provided important infrastructural support within the Hartlib Circle.

*Brokerage* What exactly does *brokerage* mean? The idea of brokerage has a long tradition in social-network analysis. Granovetter and others demonstrated that being in a position of control over bridging confers individuals with power. Brokers benefit from spanning a “structural hole” between individuals or groups who do not have direct access to each other. Burt refers to the competitive advantage of structural holes as a “vision advantage.” Having connections across structural holes grants people early access to diverse and innovative information that places them in the vanguard of seeing and developing ideas—a skill that not everyone can master. Those without the proper experience, who fail to see structural holes, cannot become brokers. In Burt’s words, “The brokerage opportunity awaits a more experienced eye to see it.” The mathematician Marin Mersenne (1588–1648)—known as a “successful knowledge broker”—possessed such an experienced eye. An expert at channeling mathematical ideas throughout Europe, Mersenne convinced his correspondents to share their claims with him. Knowing other people’s mathematical work made Mersenne appear to be “mathematically adept—even when he was not.”<sup>11</sup>

When acting as an intermediary, and particularly as a recommender, a broker could provide two acquaintances with a new contact, thereby drawing more people into their ever-expanding network. Brokers could also act as gatekeepers by isolating scholars from their network. Although the Republic of Letters often appears to have been a community of scholars living in perpetual harmony, this ideal was rarely achieved. In reality, it was regularly beset by controversy, jealousy, disagreement, and sometimes even outright hostility.<sup>12</sup>

Scholars deliberately attempted to sabotage the career of their opponents by preventing them access to their social network. For instance, in 1675, the Dutch philologist Jacob Gronovius (1645–1716), a noted gatekeeper and confidant, refused to deliver

11 Mark S. Granovetter, “The Strength of Weak Ties,” *American Journal of Sociology*, LXXVIII (1973), 1360–1380; *idem*, *Brokerage and Closure*, 59, 23; Justin Grosslight, “Small Skills, Big Networks: Marin Mersenne as Mathematical Intelligencer,” *History of Science*, LI (2013), 343, 360.

12 Lorraine Daston, “The Ideal and Reality of the Republic of Letters in the Enlightenment,” *Science in Context*, IV (1991), 367–386; Anne Goldgar, *Impolite Learning: Conduct and Community in the Republic of Letters, 1680–1750* (London, 1995).



Magliabechi's letters to the classicist Abraham van Berkel (1630–1688). Even four years later, Van Berkel deeply regretted that “Gronovius impede[d] the correspondence with Your Illustrious Lordship [Magliabechi].”<sup>13</sup>

Because gatekeepers held the key to networks that would otherwise have been closed, people had to resort to secrecy and back doors to bypass an uncooperative gatekeeper. When Magliabechi sent his letters to the Utrecht scholar Ludolf Küster (1670–1716) through Gronovius in 1698, he included a note saying that Gronovius could tear the letter apart if he did not deem Küster worthy of his letters. Gronovius—who came into conflict with Küster several times during his career—apparently did tear the letter apart because on September 11, 1699, the Dutch merchant Abraham Cousson informed Magliabechi that he “did not understand the reason why that Sir [Gronovius] did not want that Your Illustrious Lordship to write to Sir Küster.” Subsequently, Cousson promised Magliabechi to send his letter to Küster with “the necessary confidentiality and secrecy” so that Gronovius would not find out that Magliabechi had reached out to him.<sup>14</sup>

In a similar situation, on October 12, 1681, Magliabechi asked Apollonio Bassetti (1631–1699), the grand ducal secretary, to deliver his letters to the Dutch philologist Johannes Georgius Graevius (1632–1703) instead of asking Gronovius, because he was aware that Gronovius was not on speaking terms with Graevius. Magliabechi urged Bassetti “not to show [the letter to Graevius] to anyone” but to address the letter “in Holland to a trusted friend, who [would] put the letter directly into the hands of Sir Graevius.” Bassetti sent the letter to the Florentine merchant Giovacchino Guasconi (1636–1699), who forwarded it to Graevius “by means of a friend in his hands.” The risk of this strategy was that the greater the number of intermediaries involved, the greater the risk that the letter from Magliabechi to Graevius would be lost or intercepted, possibly alerting Gronovius to Magliabechi's betrayal. The utmost discretion was necessary to bypass a gatekeeper.<sup>15</sup>

13 Daniel Cousson to Magliabechi, May 22, 1675, Magl. VIII 274, ff. 108–109; May 18, 1679, Magl. VIII 274, f. 120, National Library of Florence (hereinafter BNCF).

14 Abraham Cousson to Magliabechi, September 11, 1699, Magl. VIII 1356, f. 41, BNCF.

15 Magliabechi to Bassetti, Florence, October 12, 1681, Mediceo del Principato (hereinafter MdP), Carteggi dei Segretari, 1526 (1681), State Archive of Florence (hereinafter ASF); Guasconi to Bassetti, Amsterdam, December 5, 1681, MdP, 4263 (XII), f. 637, ASF.

Magliabechi often tried to mediate between antagonistic scholars by referring to the bonds of friendships fundamental to the collaborative search for knowledge. He was keen to maintain overall peace in his network because the escalation of a single quarrel could reverberate throughout the entire network, thereby undermining his own reputation and social standing. Magliabechi was therefore often busy managing and extinguishing small fires before they became conflagrations. In the aforementioned conflict between Gronovius and Graevius in 1681, Magliabechi wrote Graevius a letter that contained “several pleas to promote the good intelligence between two edgy scholars.”<sup>16</sup>

By promoting connections among the citizens of the Republic of Letters—either through recommendations or conflict management—Magliabechi ensured that the network became more densely connected. In contrast to open networks, which posed a high risk of betrayal and conflict, closed networks—that is, densely interconnected networks—maximized stability through trust, social control, and safety. An analysis of closed networks offers insights as to why the citizens of the Republic of Letters devoted their intellects to the common good.

**BROKERAGE AND CLOSURE IN FLUX** Structural holes and brokerage opportunities arise in open networks. Yet the networks in the Republic of Letters tended to be tightly closed. Network closure relates to the working practices of the Republic of Letters, in which each citizen had an incentive to contribute toward the collective goal of sharing knowledge, trust, and support. Life in the Republic of Letters followed a specific scholarly etiquette. A prospective member needed recommendations from relevant contacts to be admitted into the network. When the Utrecht lawyer Johannes Kool (1672–1712) traveled to Florence in 1698, he went straight to the house of Magliabechi, carrying several books by his contacts Gronovius and Graevius. Standing at Magliabechi’s doorstep, Kool showed the books to Magliabechi through a narrow window to induce him to open the door. But when the Rotterdam jurist Henrik Brenkman (1681–1736) arrived in Florence with a letter of recommendation from Domenico

16 Bassetti to Magliabechi, Livorno, February 9, 1681, ab incarnazione [1682], Magl. VIII 425, f. 33, BNCF.

Passionei (1682–1761)—the official representative of the Holy See in the Dutch Republic—Magliabechi demurred because he “had not ever [before] received a letter” from Passionei. Magliabechi’s relationship with Passionei was evidently not close enough to accept Brenkman’s recommendation.<sup>17</sup>

What are the benefits of closure? According to Coleman, a closed network is a benefit to social capital for two reasons. First, it supports the exchange of accurate information by reducing the number of intermediaries through which communication has to pass. Communications passing directly across channels (edges) increases the likelihood that each node will receive the same information. Second, the more closed a network is, the more likely it is to detect misbehavior. The fact that no one in the network can escape the notice of others makes it less risky for the members to trust each other. When someone misbehaves, “there is the potential for social sanctions and reputational consequences from their mutual friends.”<sup>18</sup>

Like Coleman, Granovetter argued that the threat of social control makes trust more likely between people with mutual friends: “My mortification at cheating a friend of long standing may be substantial even when undiscovered. It may increase when a friend becomes aware of it. But it may become even more unbearable when our mutual friends uncover the deceit and tell one another.” This “structural embeddedness,” as Granovetter calls it, explains why Magliabechi couched his report to Gronovius that Nicolaas Heinsius’ (1620–1681) had made disparaging comments about him with the admonition that Gronovius “pretend not to know anything about it, in order not to spread the secret, so that it does not seem that I have violated the secrecy of [Heinsius’] letters.” Likewise, when Magliabechi severely criticized the latest publication of the Venetian historian Giovanni Palazzi

17 Koen Scholten and Asker Pelgrom, “Scholarly Identity and Memory on a Grand Tour: The Travels of Joannes Kool and His Travel Journal (1698–1699) to Italy,” *Lias: Journal of Early Modern Intellectual Culture and Its Sources*, XLVI (2019), 103–104; letter from Magliabechi to Gronovius, undated, Cod 4° Cod. Msc. 778, f. 16, Ludwig Maximilian University Library (hereinafter LMU).

18 James S. Coleman, “Social Capital in the Creation of Human Capital,” *American Journal of Sociology*, XCIV (1988), 95–120; David Easley and Jon Kleinberg, *Networks, Crowds, and Markets: Reasoning about a Highly Connected World* (New York, 2010), 59. Easley and Kleinberg follow Granovetter, “Problems of Explanation in Economic Sociology,” in Nitin Nohria and Robert Eccles (eds.), *Networks and Organizations: Structure, Form, Action* (Boston, 1992), 29–56.

(1640–1703), he urged Gronovius to treat the letter with the utmost discretion because Palazzi was his friend.<sup>19</sup>

*Betweenness Centrality* Although densely connected networks tend to cultivate trust, social control, and cooperation, they are in principle isolated. If two people share a connection with the same person, they are likely to have the same information. As noted earlier, however, open networks, by promoting the creation of bridge relations that provide new information and contacts, pose a risk of betrayal and conflict. Therefore, rather than seeing them as competing networks, Burt argued that brokerage and closure are complementary because they augment one another in creating social capital. To this point, histories of the Republic of Letters have ignored the fact that brokerage cannot be studied without closure. Brokerage and closure are two fundamental features in the structure of a social network. But how can we define these two concepts? One way is to find brokerage in a network based on *betweenness centrality*, a metric that has been proven effective within the broader field of the digital humanities. Betweenness centrality measures the number of shortest paths that pass through a particular node. The higher the betweenness, the more brokerage opportunities are available in the network.<sup>20</sup>

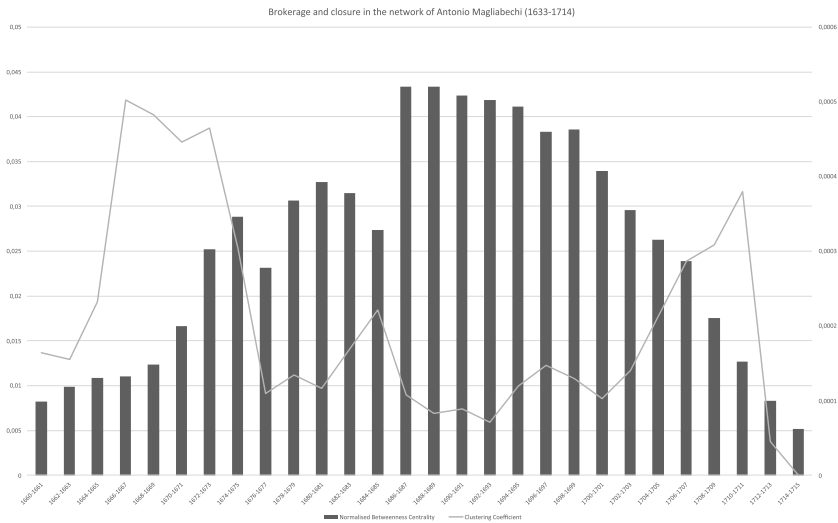
*Clustering Coefficient* One of the basic principles that defines network closure is based on the notion of triadic closure—a measure of the tendency of edges to form triads. A long line of research in sociology has discovered that “if two people in a social network have a friend in common, then there is an increased likelihood that they will become friends themselves at some point in the future.” The most common measure of triadic closure is the *clustering coefficient*, which quantifies the connected triads in a network. In general, the clustering coefficient of a node ranges from 0 (when none of Magliabechi’s correspondents were in contact with each other) to 1 (when all of Magliabechi’s correspondents were in contact with each other).<sup>21</sup>

19 Granovetter, “Problems of Explanation in Economic Sociology,” 44; Magliabechi to Gronovius, May 6, 1675, Cod 4° Cod. Msc. 777, f. 171; Magliabechi to Gronovius, October 1675, Cod 4° Cod. Msc. 777, f. 184, LMU.

20 David S. Lux and Harold J. Cook, “Closed Circles or Open Networks? Communicating at a Distance during the Scientific Revolution,” *History of Science*, XXXVI (1998), 179–211, which defines brokerage and closure as two contradictory network forms; Linton C. Freeman, “A Set of Measures of Centrality Based on Betweenness,” *Sociometry*, XL (1977), 35–41.

21 Easley and Kleinberg, *Networks, Crowds, and Markets*, 44–45.

Fig. 1 Betweenness Centrality (Brokerage) and Clustering Coefficient (Closure) in Antonio Magliabechi's Epistolary Network



A BLUEPRINT OF THE NETWORK OF AN EARLY MODERN SCHOLAR Rather than seeing tightly knit communities and edges with structural holes as competing structures, the key to successful networks is to bring the two phenomena together, building closure around valuable bridge relations. Following this line of thinking, we can envisage a framework that shows how the oscillation between periods of brokerage and closure shaped the networks of the Republic of Letters. These dynamics emerge in Figure 1, which can serve as a blueprint of Magliabechi's epistolary career, tracing the network processes that led to Magliabechi's becoming, maintaining, and losing his brokerage position in the Dutch Republic. It also highlights that his social relations underwent profound alterations over time. Indeed, the network approach, as Findlen pointed out, shows Magliabechi's brokerage career to have been only a "partial success, if not [an] abject failure, since the web of relations binding people was a fragile, indeed tenuous connection." Findlen's statement is mapped out in Figure 1.<sup>22</sup>

22 Burt, *Structural Holes: The Social Structure of Competition* (New York, 1992); *idem*, "Structural Holes versus Network Closure as Social Capital," in Nan Lin, Karen S. Cook, and *idem* (eds.), *Social Capital: Theory and Research* (New Brunswick, 2001), 31–56; Findlen, "Introduction," in *idem* (ed.), *Empires of Knowledge: Scientific Networks in the Early Modern World* (New York, 2018), 5.

At first sight, the graph starts with a high clustering coefficient and a low betweenness centrality. The increasing clustering coefficient in the first stage of the graph implies that Magliabechi's initial career was characterized by internal cohesion. This closed network helped him to build a reputation, which was essential in the practice of seeking introductions. Correspondents of correspondents became his new contacts, establishing a network of trust. The sharing of mutual contacts gave Magliabechi confidence to reach out to the "learned heretics" of the Dutch Republic, as Magliabechi called Dutch Protestant scholars.<sup>23</sup>

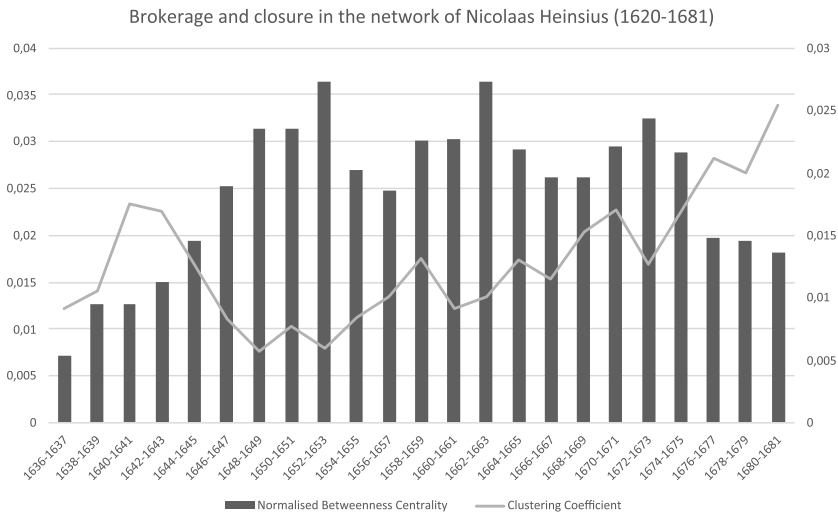
When Magliabechi became the court librarian of Cosimo III in 1673, he needed new resources to satisfy the Grand Duke's efforts to revitalize the intellectual life of the Grand Duchy of Tuscany. To obtain this knowledge, he had to establish contact with the wider scholarly world, reaching out to scholars far removed from his local network. Figure 1 shows that from the 1670s onward, Magliabechi opened his network, which is confirmed by the increasing betweenness centrality of those years. In 1671, Heinsius joined the network of Magliabechi. As was the case with most of his contacts, Magliabechi never met Heinsius in person, only through a recommendation by the French scholar Emery Bigot (1626–1689), who had become acquainted with Magliabechi during his stay in Florence from 1659 to 1660. After Bigot granted Magliabechi access to his network based in Paris, he introduced him to Heinsius.<sup>24</sup>

Heinsius was no stranger to the Tuscan court. In 1648 and 1652, he traveled to Florence with the express purpose of consulting manuscripts in the rich collections of the Medici libraries. During his stay in Florence, he took part in the intellectual life of the city, meeting as many scholars as he could and assessing their trustworthiness in the process. When he returned to The Hague in 1652, he

23 Magliabechi to Lorenzo Panciatichi, undated, in Giovanni Gaetano Bottari, Rosso Antonio Martini, and Tommaso Buonaventura (eds.), *Prose fiorentine raccolte dallo Smarrito [pseud.] accademico della Crusca* (Florence, 1716), V, Part 2, 183.

24 For further contextualization of the grand duchy's intellectual life, see van Veen, "Cosimo de' Medici's Reis naar de Republiek in een Nieuw Perspectief," *BMGN: Low Countries Historical Review*, CII (1987), 44–52; *idem* and Andrew P. McCormick, *Tuscany and the Low Countries: An Introduction to the Sources and an Inventory of Four Florentine Libraries* (Florence, 1985); Franco Angiolini, Vieri Becagli, and Marcello Verga (eds.), *La Toscana nell'Età di Cosimo III: Atti del Convegno, Pisa-San Domenico di Fiesole, 4–5 giugno 1990* (Florence, 1993). For Bigot's introduction, see the letter from Heinsius to Magliabechi, December 15, 1671, BUR F 1, Leiden University Library (hereinafter UBL).

Fig. 2 Betweenness Centrality (Brokerage) and Clustering Coefficient (Closure) in Nicolaas Heinsius' Epistolary Network



maintained close contact with the Florentine nobleman Carlo Dati (1619–1676), prince Leopoldo de' Medici (1617–1675), Andrea Cavalcanti (1610–1673), Lorenzo Panciatici (1635–1676), and Valerio Chimentelli (1620–1668). They exchanged hundreds of letters and books, keeping each other apprised of the scholarly activities in their respective countries, thus strengthening Heinsius' brokerage position, as shown by Figure 2.<sup>25</sup>

At the end of the 1660s, however, little was left of the network that Heinsius had built in Italy. In 1667, Leopoldo de' Medici was elected Cardinal and left Florence for Rome. The *Accademia del Cimento* that he had created vanished, along with the Florentine scholarly network. Moreover, the deaths of Chimentelli, Cavalcanti, Dati, and Panciatici accelerated the intellectual decline of Florence. In his letters, Magliabechi constantly lamented the scarcity of books circulating there at the time—a consequence of the shortage of scholars on whom he could rely to gather new publications from abroad.<sup>26</sup>

25 Frans Felix Blok, *Nicolaas Heinsius in Dienst van Christina van Zueden* (Delft, 1949).

26 Magliabechi to Cuper, February 2, 1693, KW 72 D 10, ff. 92–93, KB; Magliabechi to Gronovius, undated, Cod 4° Cod. Msc. 778, f. 17, LMU; Magliabechi to Heinsius, July 28, 1674, BUR F 8, UBL.

The disappearance of an entire generation of Florentine scholars collapsed the bridges that had allowed Heinsius' communication with Tuscany. After 1668, as shown by Figure 2, Heinsius' intermediary position in the network dropped, while the density of his inner circle continued to increase. The tightly knit network structure from 1668 onward formed an insuperable barrier for the flow of recent and innovative information in his network, hampering Heinsius' ability to keep abreast of scholarly developments in Italy. At that moment, Heinsius needed someone to replace his old network, which had all but vanished. Sixteen years after his visit to Florence, he reached out to Magliabechi as someone sufficiently connected to fill the structural holes left behind by his Florentine predecessors. Thanks to Magliabechi, Heinsius' brokerage position strengthened again, as shown by the increasing betweenness in his network after 1670.

NETWORK CLASHES BETWEEN SCHOLARS The dynamics in Figures 1 and 2 form a navigational tool to define the exact moments when scholars were embedded in sparse or dense networks. Together, these moments help us to focus our attention on certain letters or particular periods in a scholar's intellectual life. Witness, for example, the sudden drop of Magliabechi's betweenness centrality in 1676/7. The reason for Magliabechi's decreasing brokerage position at that time was a series of disputes between him and Heinsius that centered around a conflict between the Dutch Gronovius and the University of Pisa. According to Magliabechi, in 1674, soon after Grand Duke Cosimo III offered Gronovius the prestigious chair of Greek at Pisa, Pisan scholar Giovanni Andrea Moniglia (1624–1700) turned the Florentine lawyer and university auditor Ferrante Capponi (1611–1689) against him. Capponi could not accept a northern scholar installed as the chair in Pisa without his permission. Consequently, vicious lies and rumors about Gronovius circulated in Florence, rapidly spreading in the closed circles surrounding the Medici court, including such eminent figures as Bassetti, Dati, and the church historian Enrico Noris (1631–1704). The inherent interconnectedness of the Italian network provoked a cascade effect, turning people against Gronovius one after the other.<sup>27</sup>

27 Gronovius, *Dagverhaal eener reis naar Spanje en Italië in 1672 en 1673*, LTK 860, ff. 2–3, UBL; Giovanni Targioni Tozzetti, *Clarorum Belgarum ad Ant: Magliabechium nonnullosque alios epistolae*



Heinsius feared that the conflict between Gronovius and the University of Pisa would negatively affect the nearly thirty-years' relationship between the Dutch Republic and the Grand Duchy of Tuscany that he had curated. Magliabechi advised him to put in a good word about Gronovius in his next letters to Cosimo III. After all, Heinsius had met Cosimo during his grand tours in the Dutch Republic during the 1660s, even acting as Cosimo's guide when he visited the Elzevier publishing firm, the botanical garden, and the university library in Leiden. After his return to Florence, the grand duke had even instructed Bassetti, his secretary, to maintain close contact with Heinsius. Through this channel, Magliabechi explained, Heinsius could make sure that the grand duke did not believe the lies of Gronovius' opponents. Yet, Heinsius' reaction to Magliabechi's advice was not what he had expected. On August 1, 1674, Heinsius wrote to him that rumors attributed the blame to Gronovius for repeatedly insulting professors at the University of Pisa and that Gronovius "should immediately tone down his attacks and insults against his own colleagues." Magliabechi warned Heinsius against the duplicity of Gronovius' opponents, who only pretended to be loyal correspondents, acting "with so much courtesy that he may think that they are angels, while some of them are actually worse than the devil himself."<sup>28</sup>

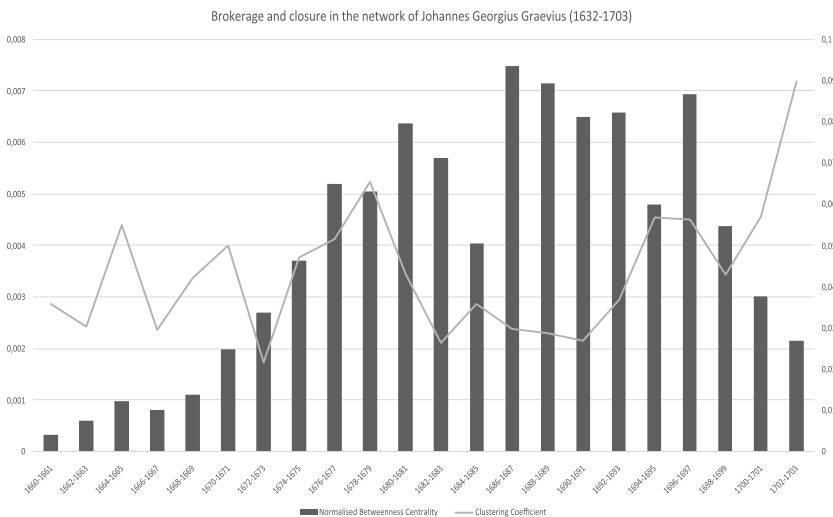
Heinsius resented the sharp tone of Magliabechi's letters and decried his inability to quell the conflict and mollify Gronovius: "Instead of pouring water on the fire, he [Magliabechi] had poured oil on the fire." Out of anger, Heinsius cut off all contact with Magliabechi in May 1675. Figures 1 and 2 show that Heinsius' decision to exclude Magliabechi from his network had broad implications for his and Magliabechi's brokerage positions, leading to an overall drop in Magliabechi's and Heinsius' betweenness centrality in 1676. The disagreement also pulled the network apart, involving others that were not initially participants in the

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*ex autographis in biblioth. Magliabechiana; quae nunc Publica Florentinorum est, adservatis descriptae* (Florentiae, 1745), II, 4. For Capponi, see Francesco Martelli, "'Nex Spes Nec Metus': Ferrante Capponi, Giurista ed altro Funzionario nella Toscana di Cosimo III," in Angiolini, Becagli, and Verga (eds.), *La Toscana nell'Età di Cosimo III* (Florence, 1990), 137–163.

<sup>28</sup> Godefridus J. Hoogewerff, *De Twee Reizen van Cosimo de' Medici, Prins van Toscane, Door de Nederlanden (1667–1669): Journalen En Documenten* (Amsterdam, 1919). For the correspondence between Heinsius and Bassetti, see MdP, 4260–4263, ASF. Heinsius to Magliabechi, August 1, 1674, in Tozzetti, *Clarorum Belgarum ad Ant. Magliabechium*, vol. I, 177. Magliabechi to Heinsius, August 28, 1674, BUR F 7, UBL.

Fig. 3 Betweenness Centrality (Brokerage) and Clustering Coefficient (Closure) in Johannes Georgius Graevius' Epistolary Network



quarrel; Magliabechi and Heinsius shared mutual contacts in the Dutch Republic. As the old saying goes, “You cannot be friends with your friend’s enemy.” After the controversy, Heinsius could no longer trust anyone in contact with Magliabechi; triadic closure could no longer happen. In fact, Heinsius made certain that none of his correspondents was also Magliabechi’s correspondents. When Heinsius apprised the Dutch burgomaster Coenraad Ruysch (1650–1731) about whom he should meet during his travels in Italy, he mentioned more than “two hundred people” in Florence but not Magliabechi. Likewise, Heinsius secretly tried to convince Willem van der Goes (1613–1688), Daniel Cousson, and Graevius to sever their connections with Magliabechi.<sup>29</sup>

Despite Heinsius’ efforts, Graevius contacted Magliabechi in 1677 after the conflict had abated. Figure 3 shows that Graevius’ betweenness centrality increased in the aftermath of the conflict, indicating that he was able to fill the structural holes emerging

29 Heinsius to Magliabechi, February 28, 1675, in Tozzetti, *Clarorum Belgarum Ad Ant. Magliabechium*, I, 190; Magliabechi to Gronovius, May 6, 1675, Cod 4° Cod. Msc. 777, ff. 171–174; Magliabechi to Gronovius, December 11, 1674, Cod 4° Cod. Msc. 777, f. 155; undated [1675], Cod 4° Cod. Msc. 777, f. 123; May 30, 1675, Cod 4° Cod. Msc. 778, ff. 169–171, LMU.

from it. A close reading of the letters written by Magliabechi illustrates the intermediary role that Graevius had assumed: “I am surprised that Sir E ... [Heinsius] has had the guts to greet me by way of sir Graevius. I, as sly as a fox, ask you to pass on my greetings to him.” Eventually, after Gronovius’ opponents informed the Roman Inquisition about the inappropriateness of a Protestant scholar lecturing at a university supported by the Catholic Church, Grand Duke Cosimo III received numerous letters protesting Gronovius’ appointment. Worried about repercussions to the ties between Florence and Rome, Cosimo III told Gronovius that he either had to convert to Catholicism or lose his support. Refusing to change his religion, Gronovius resigned his position at the University of Pisa in September 1674.<sup>30</sup>

WITH GREAT POWER COMES GREAT DANGER In the years following the conflict, new contacts gradually filled the void that Heinsius left. From 1678 onward, Magliabechi was able to reassess his brokerage position in the network, thanks in large part to Gronovius, who granted him an entrée into his extensive network within the Dutch Republic. In the 1680s and 1690s, leading scholars such as Antoni van Leeuwenhoek (1632–1723), Pierre Bayle, Jean Le Clerc (1657–1736), Adriaan Reland (1676–1718), and Pieter Burman (1669–1741) began corresponding with Magliabechi because of Gronovius’ mediation. These scholars were well-aware that the best way to distribute their books in Italy was to dedicate their publications to bridging figures like Magliabechi. In 1695, for example, Leeuwenhoek dedicated his *Arcana Naturae Detecta* to Magliabechi so that “scholars both in Italy and elsewhere [would] become acquainted with [his] trifling labors.” This web of socially dependent connections allowed Magliabechi to remain one of the leading players in the Republic of Letters for more than thirty years, despite the waning glory of Florence at that time.<sup>31</sup>

Magliabechi’s influential brokerage position, however, posed a significant threat to others. Because he had access to a wide variety of information and books, including those listed in the *Index*

30 Magliabechi to Gronovius, undated [1675], Cod 4° Cod. Msc. 777, f. 132; undated, Cod 4° Cod. Msc. 778, f. 18, LMU.

31 L.C. Palm, *Anthoni van Leeuwenhoek, Alle de brieven. Deel 11: 1695–1696* (Amsterdam, 1983), 51.

*Librorum Prohibitorum*, he was often the subject of attacks. Those eager to discover what information Magliabechi had received from the farthest reaches of Europe often read, and sometimes took pains to decipher, Magliabechi's letters. To counter this threat, Magliabechi had to resort to secrecy. His writings were rife with allusions and omissions, and he urged his most trusted correspondents to destroy his letters immediately after reading. He often wrote confidential information on tiny pieces of paper that he could easily hide, especially when criticizing his fellow courtiers or when planning the publication of unorthodox manuscripts in the Dutch Republic.<sup>32</sup>

As Magliabechi's fame reached its peak, his enemies' efforts to undermine him became more vigorous. In 1684, the tensions escalated so quickly that Magliabechi handed his resignation to the Grand Duke. Magliabechi informed his patron of the false accusation that he (Magliabechi) had authored the fourth edition of *Della Biblioteca Volante* (1682), to which Moniglia, the Pisan scholar mentioned earlier, had taken offense. The accusation appeared in a fake biography entitled *Io. Cinelli et A. Magliabechi vitae*, which evidently Moniglia had ordered Niccolò Francesco da Barga to compose in exchange for a position at the University of Pisa. The work appeared first in Florence (1684) anonymously, printed by Vincenzo Vangelista and later reprinted in Venice, and distributed as though it were, in the words of Magliabechi, "Christian doctrine."<sup>33</sup>

Moniglia's contemporaries knew him primarily for his quarrelsome character. His influential position at the University of Pisa and the Medici court allowed him to make scholarly reputations as easily as he could break them. He apparently sabotaged the career of many university professors, as he had in the aforementioned case involving Gronovius. Moniglia was also responsible for destroying the career of the Florentine poet and physician Giovanni Calvoli Cinelli (1626–1706), the real author of the fourth edition of *Della*

32 Magliabechi warned Heinsius to be careful about what he wrote in his letters to him because they risked interception by Bassetti, who controlled all his incoming mail from the Dutch Republic. See Magliabechi to Heinsius, September 29, 1674, BUR F 8, UBL; Magliabechi to Gronovius, undated, Cod 4° Cod. Msc. 778, f. 25, LMU.

33 Magliabechi to Cosimo III, December 8, 1684, Autografi Palatini Magliabechi, f. 123; 1684, Autografi Palatini Magliabechi, f. 131, BNCF.

*Biblioteca Volante* that was falsely attributed to Magliabechi. In its *Quarta Scanzia*, Cinelli questioned Moniglia's medical abilities. Moniglia retaliated; Cinelli spent ninety-three days in prison for the insult, and all the copies of the *Quarta Scanzia* were publicly burned in the inner courtyard of Florence's Bargello prison on March 11, 1683. Though not the author of the *Scanzia*, Magliabechi had provided Cinelli with the information and books to carry out his research. Intercepting some of this material, Moniglia plotted his revenge, in the form of the *Io. Cinelli et A. Magliabechi vitae*.<sup>34</sup>

As shown by Figure 1, the publication of *Io. Cinelli et A. Magliabechi vitae* in 1684 runs parallel with Magliabechi's decreasing brokerage. At that time, Magliabechi was more worried about the book's damage to his reputation than about searching for new brokerage opportunities. Figure 1 also shows that the density of his inner circle substantially increased, as indicated by a high clustering coefficient in 1684/5. Why was his network denser at that point? In his letters to the Grand Duke, Magliabechi offered a bright side to all the commotion caused by the *Io. Cinelli et A. Magliabechi vitae*. The many colleagues whom he had asked for support wrote letters and poems that proved his innocence and restored his reputation, thereby forming a protective closed network around him.<sup>35</sup>

Supported by scholars throughout Europe, Magliabechi threatened to resign his post if the grand duke did not sentence Moniglia and arrange to burn the *Io. Cinelli et A. Magliabechi vitae*. Vangelisti the printer went to prison, but Moniglia escaped punishment. In his anger, Magliabechi wrote to Cuper that "in any other part of the world his head would have been cut off. Here, he is not even punished, but praised. O what times, O what times!" The grand duke never gave Magliabechi permission to leave the Medici court, but Magliabechi still managed to take justice into his own hands. Together with Gronovius and the poet Federico Nomi (1633–1705)—another scholar whose career is said to have suffered at Moniglia's hands—he published a satirical work

34 Gabriel Maugain (1872–1950) went so far as to label Moniglia as "l'adversaire le plus dangereux des modernes dans le dernier tiers du XVIIe siècle." See Franco Carnevale, "Ramazzini vs. Moneglia: Una 'Terribile' Polemica Medica Seicentesca," *Medicina & Storia*, XI (2011), 213. For more details about Cinelli's critique, see Carnevale, "Ramazzini vs. Moneglia." Magliabechi to Cosimo III, December 28, 1684, Autografi Palatini, f. 122, BNCF.

35 Magliabechi to Cosimo III, 21 May 1685, Autografi Palatini Magliabechi, f. 127, BNCF.

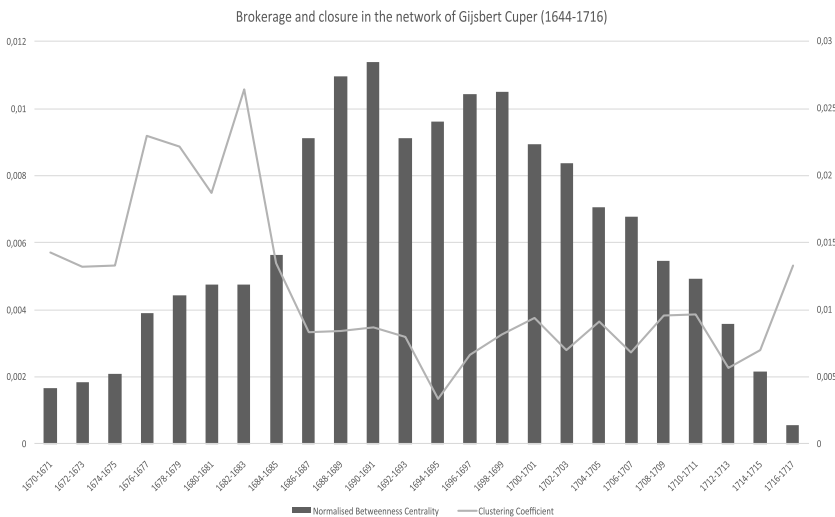
about Moniglia in 1696, the *Liber satyrarum sexdecim* in Leiden. It included a dedicatory letter by Gronovius stressing Moniglia's never-ending harassments at the University of Pisa.<sup>36</sup>

**FUTURE GENERATIONS OF SCHOLARS** Figure 1 illustrates that when Magliabechi neared the end of his career, he was decreasingly efficient as a broker. From 1710 onward, Magliabechi's deteriorating health began to undermine his position in the Republic of Letters. Continuously tormented by severe inflammations of his eyes and not having the benefit of a secretary, he could barely manage his incoming correspondence from the Dutch Republic. He therefore often refrained from informing his Dutch colleagues of books newly printed in Italy, directing them instead to consult the literary journals that emerged at the turn of the eighteenth century. The editors of these journals—for example, Benedetto Bacchini (1651–1721) at the *Giornale de' letterati di Modena* and Apostolo Zeno (1669–1750) at the *Giornale de' letterati d'Italia*—sometimes closely collaborated with him. These journals tended to discuss the same topics that Magliabechi did in his letters—a publication's date and place, what people thought of it, and who was working on what subject. The journals thus greatly supplemented, and indeed partially replaced, the *commerce de lettres* maintained by Magliabechi with the Dutch Republic.

The reduction in Magliabechi's intermediary role, however, was the result not only of his failing health and the rise of literary journals but also of a shift in his networking strategy. As Figure 1 confirms, the gradual decline of his brokerage position after 1700 was marked by an increase in the cohesion of his network at the very moment when he started to introduce many of his Italian correspondents to the Dutch, especially Cuper, the aforementioned burgomaster and political scholar. Magliabechi seemed to be preparing his network for the next generation of Italian scholars. Figure 4, which shows the pathway of Cuper's emergence as a broker between the Dutch Republic and Italy, also shows dynamics that we have encountered before: The closed network of densely clustered mutual contacts in the beginning of his

36 Magliabechi to Cuper, undated [1684], KW 72 D 10, f. 60, KB; Magliabechi to Gronovius, undated, Cod 4° Cod. Msc. 778, f. 12, LMU. Dedicatory letter of Gronovius in Federico Nomi, *Liber satyrarum sexdecim* (Leiden, 1703), 140.

Fig. 4 Betweenness Centrality (Brokerage) and Clustering Coefficient (Closure) in Gijsbert Cuper's Epistolary Network



epistolary career helped him to establish a reputation in the scholarly world, which facilitated the practice of seeking introductions. Consequently, his reputation for trustworthiness enabled him to build safe bridges in Italy that would otherwise have been too risky. Magliabechi was the right person to help with these ambitions. Through him, Cuper could gain access to additional sources of information and scholarship in Italy. Following a recommendation by Gronovius, their mutual contact, Magliabechi and Cuper began a correspondence that endured from 1677 until 1711, resulting in Cuper's increasing brokerage activities (Figure 4).

From 1690 onward, Magliabechi introduced Cuper to key figures in Italy. Thanks to Magliabechi, Cuper was able to contact the Roman academician Giovanni Giustino Ciampini (1633–1698) about becoming a corresponding member of his *Accademia Fisicomatematica* in Rome. He then communicated with Ludovico Antonio Muratori (1672–1750), one of the most influential cultural figures in Italy during the first half of the eighteenth century, as well as the famous antiquarian Francesco Bianchini (1662–1729) and the Roman curial official Giusto Fontanini (1666–1736). Fontanini even forwarded Cuper's letters to Pope Clement XI, who “read them with great satisfaction, and by his own hand,

had copied the reports, and literary news.” Cuper’s growing lists of acquaintance in Italy contributed to his strengthening brokerage position at the end of the seventeenth century.<sup>37</sup>

A temporal analysis of Magliabechi’s ego-net generates a blueprint of his epistolary career, revealing that he could not have become a powerful broker without an awareness of the safety and security of dense networks. A highly connected network was especially important in times of religious disunity, when scholars needed the proper credentials, even if, in Magliabechi’s words, as “learned heretics” of a different faith. A secure network of trusted contacts allowed Magliabechi to exchange confidences and secrets and protected him against threats from his enemies.

Nonetheless, Magliabechi had to move outside his network of trust to collect books and knowledge from the world at large. As his network evolved and opened to other people and ideas, he realized that he did not want to confine himself to one local group, the academic circles surrounding the court of Cosimo III. He navigated his way within the Republic of Letters by finding structural holes between parts of the network with few interactions. Network metrics can capture how his prudence and his desire for knowledge and power alternately combined and clashed throughout the scholarly network.

Mixing methods is a growing trend in the digital humanities. The ego-net analysis in this article provides an opportunity to mix quantitative and qualitative methods. The network stories herein told from the ego’s point of view, as documented in letters, travel journals, and diaries, are crucial to explain structural changes in a network, but they are also amenable to metrics that can extend the findings even further. A close reading of Magliabechi’s correspondence confirms that he worked to find balance between closure and brokerage in his network, trying to correct irregularities in his relationships by arbitrating between quarreling scholars. Sometimes he had to act in secret by finding a detour that allowed him to stay in contact with the foes of his correspondents; at other

37 Jetze Touber, “‘I am happy that Italy fosters such exquisite minds’: Gijsbert Cuper (1644–1715) and Intellectual Life of the Italian Peninsula,” *Incontri*, XXX (2015), 91–106; *idem*, “Religious Interests and Scholarly Exchange in the Early Enlightenment Republic of Letters: Italian and Dutch Scholars, 1675–1711,” *Rivista di Storia della Chiesa in Italia*, II (2014), 411–436; Magliabechi to Cuper, October 28, 1702, KW 72 D 12, f. 41, KB.



times, he openly defended his friends at the risk of losing vital contacts. The birds-eye view of the quantitative analysis performed in this study sheds light on these dynamics. Together with a close reading of the written sources, it provides a comprehensive narrative about the dynamics of brokerage and closure in the early modern scholarly network, and points to possible future research. Indeed, other scholarly brokers—such as Peiresc, Oldenburg, Mersenne, and Bayle—who are well documented within large data sets, such as Kalliope and *Early Modern Letters Online*, are eminently worthy of the same treatment that Magliabechi receives in this research note.<sup>38</sup>

38 Crossley et al., “Narratives, Typologies and Case Studies,” in *Social Network Analysis for Ego-Nets*, 105–125.

