

Network Analysis and the Sociology of Modernism

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Not as a theologian interpreting the Divine Will in infallible dogma, but as a simple-hearted anthropologist putting specimens into different large boxes—merely for present convenience tumbling things apparently similar into the same large box until a more scientific and accurate and mature arrangement is feasible, let me attempt a very general classification of such periodicals as have yet obtruded themselves in my research . . .

—Ezra Pound, “Studies in Contemporary Mentality”

Writing in 1917, Ezra Pound scarcely could have imagined the kinds of “arrangements” that would be feasible nearly a century on.¹ While he had to sift through the “little magazines” of the era in an analog and serial fashion, classifying each according to some unspecified formula, the “simple-

For full-color versions of all the figures in this essay, please download this document from our website: <http://lucian.uchicago.edu/blogs/literarynetworks/files/2012/10/NetworkAnalysisImages.pdf>.

1. The passage is taken from the sixth installment of an essay series written for the *New Age* 21, no. 1306 (September 1917): 446–47.

hearted” and technically inclined anthropologist of today can opt for methods of sorting entirely digital in nature.² In this essay, we experiment with a method that transforms detailed publication data (i.e., who published when and where) into complex network diagrams such as this one (Figure 1). This image represents an interpretation of how thirty-five major American poets might be arranged according to which US-based periodicals they published in between 1917 and 1918. The closer two poets appear, the more likely they were publishing in similar venues and in similar amounts, as with Sherwood Anderson and Carl Sandburg. Conversely, distance between poets implies less of an overlap in their publishing activity. The principal assumptions organizing this particular “arrangement” of the historical record are, first, that publication in a specific periodical can be taken as a measure of a poet’s objective relation to other poets publishing in that periodical for a given time span. And second, that the combined weight of these relations can be calculated across many hundreds of poets and many thousands of poems.³ Using techniques borrowed from the fields of social network analysis and relational sociology, we argue that the ability to visualize such patterns both diachronically and across a complete corpus opens up new ways of interrogating the collaborative networks that underwrote the evolution of modernist poetry globally. Moreover, we see this ability to generate empirical evidence at such high orders of magnitude not as an excuse to reject traditional hermeneutics or cultural critique but as a means to introduce new categories of analysis (e.g., brokerage, closure, structural

2. We gesture here toward the range of techniques that have been introduced to literary studies in recent years under the banner of “digital humanities.” Specifically, to those techniques that are computational in nature (e.g., text and data mining, visualization and image analysis, network analysis) and that can be addressed to massive amounts of digitized data in order to uncover novel patterns or structures. On the “computational turn” in the humanities and the emergence of what has been called “Digital Humanities 2.0,” see David M. Berry, “Introduction: Understanding the Digital Humanities,” in *Understanding Digital Humanities*, ed. David M. Berry (New York: Palgrave Macmillan, 2012), 1–20.

3. In making such assumptions, we do not see ourselves as deviating too far from Pound’s original impulse. All acts of categorization must apply a principle or “algorithm” of sorting that, by temporarily bracketing certain individual particularities of an object, allows for the discernment of patterns across multiple instances of that object. Although we have always to interrogate the principles that guide this sorting, and no less so when they are being carried out by the machine as opposed to the solitary critic, we agree with Mark McGurl’s observation that while “the whole truth of any given instance of art exceeds its membership in some category . . . insofar as the category might help to make that excess visible, it is all the more useful.” See his *The Program Era: Postwar Fiction and the Rise of Creative Writing* (Cambridge, MA: Harvard University Press, 2011), 32.

autonomy) for elucidating the network effects of literary affiliation on poetic style and form.⁴ The primary test case for these categories is poetic production in the United States from 1915 to 1930, but we also look at the cases of Japan and China to show how our proposed methodology can lend itself to a comparative sociological approach.

Approaches to the Sociology of Literature

While a desire for the empirical in literary studies, and more “scientific” methods of sorting, may seem new in an age of digitized information, it is in fact—as Pound’s quote reminds us—rather old. Kenneth Burke, in his classic work *The Philosophy of Literary Form* (1941), posited a “statistical method” for breaking down literary texts into discrete aesthetic components.⁵ Caroline Spurgeon, the great Shakespeare scholar of the 1930s, similarly employed statistical tools to track word use and thereby identify consistencies in Shakespeare’s style.⁶ A desire for a robust sociology of literary production and form has also been around for some time, though it is curious that in its many instantiations over the past half century and more, this desire has tended to keep the empirical at a safe remove.

Consider research produced under the rubric of “the sociology of literature” from the 1960s to the present. Lucien Goldmann set the agenda in the early 1960s with his “genetic structuralist method,” which posited a direct homology between “the consciousness” of a social group, or the “mental structures” by which they live, and the formal features of a text. In

4. Alan Liu writes of the need to infuse digital approaches with cultural critique in “Where Is Cultural Criticism in the Digital Humanities?,” in *Debates in the Digital Humanities*, ed. Matthew K. Gold (Minneapolis: University of Minnesota Press, 2012), 490–510. Stephen Ramsay offers an excellent defense for why computational methods do not have to be seen as antithetical to traditional hermeneutics in *Reading Machines: Toward an Algorithmic Criticism* (Urbana: University of Illinois Press, 2011), 1–17. He argues that such methods augment the critic’s implicit drive to seek out patterns across a range of cultural objects by performing similarly *algorithmic* transformations of these objects, just at a different scale and in a more rigidly holistic manner.

5. Kenneth Burke, *The Philosophy of Literary Form; Studies in Symbolic Action* (Baton Rouge: Louisiana State University Press, 1941).

6. Caroline Spurgeon, *Shakespeare’s Imagery and What It Tells Us* (New York: Macmillan, 1936). First published in 1935 at the height of the Great Depression, the text was republished by Cambridge University Press in 1958. Of note is that Spurgeon explicitly used a more “objective,” self-described “statistical” method of counting specific images to refute class-biased charges of Shakespeare’s plays being written by an upper-class author rather than Shakespeare himself.

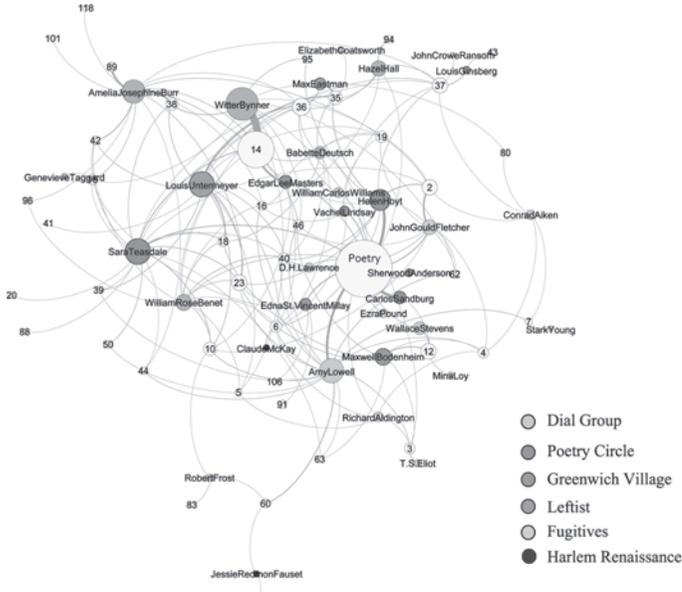


Figure 1. American poets, 1917-18

Figure 2. Weighted bipartite network

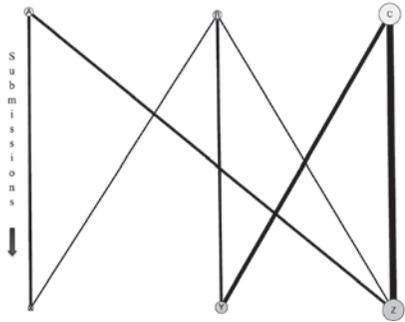
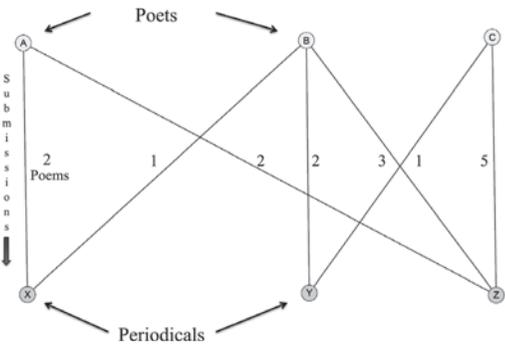


Figure 3. Node size and edge thickness reflect total number of publications

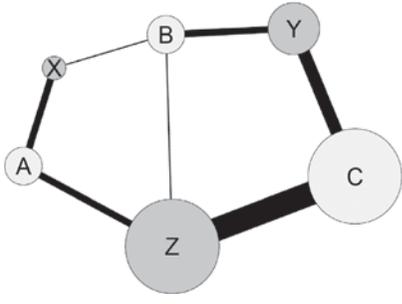


Figure 4. Nodes placed according to weight of relationship between them

method, however, Goldmann's work largely rests on intensive close readings of novels that correlate stylistic forms to theoretically framed accounts of capitalism.⁷ In the early 1970s, Raymond Williams refined Goldmann's method—which, in his view, too narrowly reduced culture to a set of pre-established economic or social “facts”—to assert a more robust interaction between literature and social institutions, thus reframing the work of literature as “mediation” as well as “reflection.”⁸ More recently, Pierre Bourdieu, in now canonical texts such as *Distinction* and *The Rules of Art*, developed a particularly sophisticated sociological reading of art that situates literature within a broad field of cultural production whereby authors actively struggle against each other as well as the conventions of their field, while simultaneously responding to external social and economic pressures from the “real world” beyond their field.⁹

Goldmann, Williams, and Bourdieu have all made lasting marks on literary criticism in the United States. Goldmann laid the ground for the emergence of British cultural studies in the 1970s, which would be taken to its apex by Williams in the 1980s, a program of research that reached American PhD graduate programs in literature by that same decade and powerfully influenced the direction of English literary studies. Similarly, the arrival of Bourdieu in America in the early 1980s, and his eventual importation into the English literary field by the early 1990s, facilitated a number of outstanding studies of the relationship between literature and social institutions, such as Janice Radway's now classic *Reading the Romance*.

More recently, there has been a revival of interest in Bourdieu's approach with the arrival of two extraordinary studies that operate at both national and international levels: Pascale Casanova's *The World Republic of Letters* and Mark McGurl's *The Program Era*. Indeed, Bourdieu's account of “the literary field” has proven unusually durable and attractive for current literary scholars. Somewhat paradoxically, his call for an empirically extrapolated vision of an overall field of literary production that shapes the contours of individual texts aligns well with the discipline's renewed interest in historicism and its “return to form”—its reengagement with the specificity of literature. The success of both Casanova's and McGurl's work certainly augurs a new round of innovation in attempts to investigate “the sociology of literature.”

7. Lucien Goldmann, *Towards a Sociology of the Novel* (London: Tavistock, 1975). See “The Genetic Structuralist Method in the History of Literature,” 156–60, in particular.

8. Raymond Williams, *The Sociology of Culture* (New York: Schocken Books, 1982), 24–25.

9. Pierre Bourdieu, *The Rules of Art* (Stanford, CA: Stanford University Press, 1996).

Yet for all the innovative partnerships that have emerged in recent decades between literary criticism and “sociology of literature” concerns, there has invariably been, as James English observes in his recent survey of the field, an “antagonism toward counting” by those in literary studies. It is an antagonism fed by both a misguided perception of “sociology, as of the social sciences in general, as allied with the hegemony of numbers,” but also a felt need to resist and critique the “naïve or cynical quantitative paradigm that has become the doxa of higher-educational management.” While English is sympathetic to this latter objective, he justly points out that the antagonism toward numbers has obscured the reality that “sociology itself has long favored mixed-methods research and has gone a good way toward dissolving, in practice as well as theory, this hoary binarism of quantitative versus qualitative.”¹⁰ This is particularly true of the branch of sociology that we draw upon for our own analysis, known as relational sociology. It has, for several decades, developed theoretical strategies *alongside* quantitative techniques so as to elucidate the relational nature of social processes and the complex patterns of ties through which resources, ideas, and even social roles are thought to flow and acquire symbolic value. We now describe some of these strategies and techniques as they intersect with sociological approaches to the study of culture and with our own proposed methodology.

Crossing the Empirical Divide

One of the key tenets of relational sociology, according to Mustafa Emirbayer, is that “the very terms or units involved in a transaction derive their meaning, significance, and identity from the (changing) functional roles they play within that transaction.” It is in this sense an anti-substantialist sociology that rejects the notion that one can posit “discrete, pre-given units such as the individual or society” as anterior to any relation and instead takes *transaction* itself as its primary unit of analysis.¹¹ More

10. James F. English, “Everywhere and Nowhere: The Sociology of Literature after ‘the Sociology of Literature,’” *New Literary History* 41, no. 2 (Spring 2010): xii–xiv.

11. Mustafa Emirbayer, “Manifesto for a Relational Sociology,” *American Journal of Sociology* 103, no. 2 (September 1997): 287. Citing earlier work by John Dewey and Arthur Bentley, Emirbayer is making a philosophical distinction here between “trans-action” and “inter-action.” The former is meant to describe phases of action in a way that does not isolate relations from the elements being related, whereas the latter is said to treat entities as independent of one another and is thus more substantialist in its orientation.

specifically, relational sociology seeks to account for how social entities come into being processually and dynamically through their transactions with one another but also through the multiple overlapping patterns of relations that are seen to structure these transactions. For relational sociologists, understanding the effects of this network structure has been both a matter of great analytical interest and also intense theoretical debate. Analytically, the advantage of conceptualizing social structure as an assemblage of networked ties is that there exists a highly developed set of mathematical techniques for modeling and formally describing such complex relations. These techniques have proved especially helpful in establishing measurements for the degree to which actors within a given network either are or are not connected to other subsets of actors in structurally identical ways.¹² This is something important to our study as well. Yet these quantitative methods have also been approached with considerable caution owing to the difficulty they have in capturing multiple, overlapping relations within a single entity and because of their tendency to reify social structure as a static substrate existing independently of the cultural content and processes flowing through it.¹³

Part of this caution has to do with the age-old tension between agency and structure, and the concern over how much emphasis should be given to either in the analysis of social processes. Some relational sociologists call more attention to individual agency and meaning-making processes (or “cultural structures”) to argue that network structure itself emerges relationally and dynamically with the meanings that actors attribute to the

12. The idea that actors (or nodes) in a network can be structurally equivalent is a key concept in network analysis, as it allows for the discovery of shared patterns of connectedness that can then be used to partition and classify groups of actors within the observed network. The higher the degree of equivalency, the more likely that actors will share certain attributes and be similarly enabled (or constrained) by their positions in the network. On structural similarity and the problem of partitioning, see Charles Kadushin, *Understanding Social Networks: Theories, Concepts, and Findings* (Oxford: Oxford University Press, 2012), 49–55. On “structural equivalence” as understood by one of its main theorists, see G. Reza Azarian, *The General Sociology of Harrison C. White: Chaos and Order in Networks* (New York: Palgrave Macmillan, 2005), 83–107.

13. For a helpful overview of how relational sociologists have engaged with and problematized quantitative methods of network analysis, see Jan Fuhse and Sophie Mützel, “Tackling Connections, Structure, and Meaning in Networks: Quantitative and Qualitative Methods in Sociological Network Research,” *Quality & Quantity* 45, no. 5 (August 2011): 1067–89; and Ann Mische, “Relational Sociology, Culture, and Agency,” in *The Sage Handbook of Social Network Analysis*, ed. John Scott and Peter J. Carrington (Los Angeles: Sage, 2011), 80–97.

social ties composing this structure.¹⁴ Some further insist that cultural discourses and forms are “analytically autonomous with respect to network patterns of social relationships” and must be dealt with as such, whether through deep qualitative approaches or revised theoretical formulations of network effects.¹⁵ Despite such qualifications, it is rarely a question of whether cultural structures should or should not be analyzed in their *interplay* with social structures but rather a question of theoretical emphasis. Indeed, finding ways to elucidate this interplay through a more systematic investigation of social structure has been a critical task for sociologists of culture who want to conceive of cultural objects as produced in and by networks of collaborating actors in a competitive and hierarchically structured field (Bourdieu); of artists as mobilizers of resources and collectivities that are subject to formal or informal institutional organization (Howard Becker); and of shared cultural productions as both constituted by and constituting the identity of the artists who take part in their creation (Paul DiMaggio).¹⁶ Many have even made innovative use of empirical techniques (e.g., survey data, social network analysis, blockmodeling) to discover correlations between the shifting positionality of artists and creative works in a specific field and certain measurable effects of the network relations in which these artists and works are dynamically embedded.¹⁷

14. Harrison White has gone furthest in arguing the importance of including these meaning-making processes (what he often refers to as “stories”) in any account of network structure. See Azarian, *The General Sociology of Harrison C. White*, 51–56. For a concise description of what a truly relational account should entail, and how difficult it is to achieve, see Harrison C. White and John W. Mohr, “How to Model an Institution,” *Theory and Society* 37, no. 5 (October 2008): 485–512.

15. Mustafa Emirbayer and Jeff Goodwin, “Network Analysis, Culture, and the Problem of Agency,” *American Journal of Sociology* 99, no. 6 (May 1994): 1438.

16. See Bourdieu, *The Rules of Art*; Howard S. Becker, *Art Worlds* (Berkeley: University of California Press, 1982); and Paul DiMaggio, “Cultural Networks,” in *The Sage Handbook of Social Network Analysis*. Becker is less well known to literary critics, but he is a founding figure in sociology of culture studies for his early insistence that all artistic activity depends on shared conventions, shared resources, and shared networks of interaction that delimit and define the social dimensions of this activity. For a useful comparison of Becker and Bourdieu, and a discussion of where their models fall short in terms of network analysis, see Wendy Bottero and Nick Crossley, “Worlds, Fields and Networks: Becker, Bourdieu and the Structures of Social Relations,” *Cultural Sociology* 5, no. 1 (March 2011): 99–119.

17. See, for instance, on contemporary German writers, Helmut K. Anheier and Jürgen Gerhards, “Literary Myths and Social Structure,” *Social Forces* 69, no. 3 (March, 1991): 811–30; on the early British punk scene, Nick Crossley, “Pretty Connected: The Social Network of the Early UK Punk Movement,” *Theory, Culture & Society* 25, no. 6 (Novem-

Our project similarly stresses the utility of empirical approaches for identifying correlations between literary activity (a poet's sociological habitus) and literary form. Thus, we resist the long-standing "antagonism toward counting" that has characterized work on the sociology of literature in order to suggest that quantitative techniques like network analysis and network visualization can be a useful aid for rendering aspects of social structure visible at a large enough scale to observe the "strict, nonrandom regularity" that small-scale random phenomena tend to create in their collective action.¹⁸ This, in turn, opens up the complexity of that structure to more rigorous interrogation and helps extend the reach of the qualitative questions that sociology of literature critics have long been asking. In other words, we engage with the empirical in order to perform "distant readings" that put mathematical interpretations of social structure into dialogue with thick historical description and close readings of cultural material, resisting any kind of strict bifurcation of distant empirical *explanation* and close hermeneutic *interpretation*.¹⁹ While we acknowledge, along with relational sociologists, that these different scales of analysis will bring to bear very distinct, and in some cases incompatible, interpretive assumptions about literary form and content, this does not preclude the possibility of oscillating between them in theoretically productive ways. And not to simply decide when social structures matter to cultural formations and when they do not, but to enhance our ability to empirically test the precise nature of their mattering—to constrain and specify the claims we wish to make about the sociological dimensions of literary form.²⁰

ber 2008): 89–116; on Belgian and Flemish fiction of the 1970s, Wouter de Nooy, "The Dynamics of Artistic Prestige," *Poetics* 30, no. 3 (June 2002): 147–67; and, on the world of Broadway musical production, Brian Uzzi and Jarrett Spiro, "Collaboration and Creativity: The Small World Problem," *American Journal of Sociology* 111, no. 2 (September 2005): 447–504. "Blockmodeling" refers to an analytical technique whereby a set of social actors is partitioned into blocks that represent structurally equivalent positions (e.g., employees who are part of the same department) so as to expose relations between these blocks.

18. Cosma Shalizi, "Graphs, Trees, Materialism, Fishing," in *Reading Graphs, Maps, Trees: Critical Responses to Franco Moretti*, ed. Jonathan Goodwin and John Holbo (Anderson, SC: Parlor, 2011), 131. Even Bourdieu's *The Rules of Art*, a text that is central to literary criticism's renewed interest in sociology, while rooted in a kind of empiricism, is generally qualitative in how it extrapolates larger social structures from textual analysis, biography, and institutional history.

19. The problem of "interpretation" and "explanation" as it appears both in Moretti's work and in critiques of his work is discussed by Katherine Bode in *Reading by Numbers: Recalibrating the Literary Field* (London: Anthem, 2012), 15–17.

20. On the necessity and value of such constraint in literary analysis and cultural history,

Explanation of Method

Formal social network analysis stems from the basic idea that relations between objects can be abstractly represented as a set of points (or nodes) connected by lines (or edges). These lines indicate some kind of relationship between the nodes they connect. For our purposes, we treat poets and journals as our nodes and the fact of publication in a journal as the edge linking one type of node to another.²¹ Thus, if poets *A*, *B*, and *C* each publish several poems in journals *X*, *Y*, and *Z*, we can express this with a diagram, formally referred to as a bipartite (or affiliation) graph (Figure 2). The edges of this graph can then be given values (or weights) based on the number of publications of each poet. This value is an important one to capture because our model assumes that the quantity of poems printed in a journal is a rough measure of a poet's degree of affiliation with that journal. What the model cannot account for, however, are the individual particularities of each poem: stylistic features, semantic content, length, and rhyme scheme. We treat every published poem as essentially equal and thus commit to a flagrant abstraction of the cultural content from which our network data is derived. But this is precisely the point of network analysis. Its purpose is not to capture social relations in all their dynamism and complexity but to isolate and abstract specific dimensions of this complexity (in this case, the fact of publication) in order to identify broader structural patterns.

It can do this because once the relations have been reduced to a set of nodes and weighted edges, the structural properties of the resulting network can then be analyzed using mathematical techniques and graphically represented in ways that express these properties. Thus, we can take the simple diagram in Figure 2 and adjust the thickness of the lines so that they indicate the relative weight of each, and adjust the sizes of the nodes to reflect the relative number of publications by each poet in each journal (Figure 3). We can then convert the weight of these ties into an expression of Euclidean distance that takes into account the combined weight of relations that each node has with the others, so that nodes sharing similar pat-

see Timothy Burke, "Book Notes: Franco Moretti's *Graphs, Maps, and Trees*," in *Reading Graphs, Maps, Trees*, 42.

21. Although our edges represent a simple undirected relationship between two entities (poet and journal), they can also be used to represent directed, symmetric, or even multiplex (more than one) relationships, depending on what kind of social relation one is trying to capture. For an introduction to these basic techniques of social network analysis, see Kadushin, *Understanding Social Networks*. On the multidimensionality of social ties, see Azarian, *The General Sociology of Harrison C. White*, 37–38.

terns of relation will tend to be attracted to one another and those sharing less similar patterns will tend to be pushed apart (Figure 4). Expand this procedure across hundreds of poems by dozens of poets, and the result is a network visualization such as the one in Figure 1—an interpretation of the underlying publication data, which suggests that the more a subset of poets has had their work published in a shared subset of periodicals, the closer they should appear in the represented network and vice versa. It is not *the* interpretation of what the structure of poetic affiliation looked like during these years but *an* interpretation, one that will need to be tested and improved on in coordination with close contextual analysis and a more comprehensive dataset. Until now, we have been working with just sixty-four of the hundreds of American poets active in the period under consideration.²²

For our purposes here, however, the aspect of social structure that publication data brings to light, once visualized as a network of relations, is particularly useful for interrogating the social dimensions of early-twentieth-century poetry production in the United States, Japan, and China. The little magazines and independent coterie journals of the time were essential mechanisms for organizing creativity, collaboration, and the transnational diffusion of poetic styles. They performed this role to varying degrees in each national setting, as our analysis demonstrates, but in each case they helped to organize poetic activity at a time of increasing “professionalization” and systematize the rapid circulation of new aesthetic ideas and ideological agendas.²³ In general, one’s identity as a poet in these settings could

22. Between 1915 and 1929, these 64 poets published roughly 3,500 poems in nearly 140 different journals or periodicals. This is according to the three-volume *Index to Poetry in Periodicals* (Great Neck, NY: Granger, 1981–84). In the future, we plan to supplement the publication data from this index with similar indexes to American poetry and verse so as to extend the temporal range of our project.

23. Magazines and periodicals have received considerable critical attention in the past decade as institutional sites for both the organization and production of Anglo-American modernism. See Suzanne W. Churchill and Adam McKible, eds., *Little Magazines and Modernism: New Approaches* (Burlington, VT: Ashgate, 2007); Mark S. Morrisson, *The Public Face of Modernism: Little Magazines, Audiences, and Reception, 1905–1920* (Madison: University of Wisconsin Press, 2000); and R. J. Scholes, *Modernism in the Magazines: An Introduction* (New Haven, CT: Yale University Press, 2010). For China, Michel Hockx has pioneered the study of periodicals and their relation to modern literary styles in his *Questions of Style: Literary Societies and Literary Journals in Modern China, 1911–1937* (Leiden: Brill, 2003). For Japan, there is little available in English on the subject of modernist periodicals, but renewed attention from Japanese scholars has come in the form of edited volumes, bibliographic work, and elaborate reprints of poetry magazines

be as much about one's own self-defined style as it was about the journals in which one published and thus also the poetic circles or schools to which one could claim an affiliation. In this regard, the historical fact of publication in a specific journal had an inherently social dimension to it.²⁴ And to the extent that journals served as the institutional sites through which an expanding market for avant-garde poetry was stratified and differentiated along aesthetic, ideological, racial, and even geographic lines of affiliation, then the ability to see how individual poets positioned themselves in relation to the structuring logic that journals provided is indispensable for analyzing the *interplay* of this logic with poetic style and form. Moreover, being able to see this interplay diachronically and at a large scale, which can be done only with quantitative methods, allows us to consider the impact of this dimension of social structure on the intersecting trajectories of multiple poets' careers. This in turn allows us to interrogate the social dynamics at play as these poets moved both *within* and *across* the communities that journal publication supported and to discover categories of network positionality that may have facilitated or hindered innovation in poetic style.

High Modernism as Network

We turn now to a series of network visualizations of the US modernist poetry field between 1915 and 1930 to begin substantiating these lines of inquiry. Returning to the visual snapshot of the poetic field with which we opened (Figure 1), we see the emergence of a relatively centralized and concentrated space of poetic production, organized tightly around the important Chicago-based literary journal *Poetry*. Well-known poets, such as Pound, Sandburg, and Anderson, cluster intimately to the journal's immediate fold, while the farther we move outward, lesser-known figures, such as Sara Teasdale and William Rose Benét, come into view. In sum, we find that poets such as Pound and Sandburg, two highly influential poets of the period, gathered to key periodical sites, such as *Poetry*, that were

from the 1920s and 1930s. See especially the fifteen-volume *Korekushon toshi modanizumu shishi* [Collection of urban modernist poetry magazines], ed. Wada Hirofumi et al. (Tokyo: Yumani shobō, 2009). On the notion of "professionalization" as the means by which modernist writers repositioned themselves within the rise of mass culture, see Thomas Strychacz, *Modernism, Mass Culture, and Professionalism* (Cambridge: Cambridge University Press, 1993).

24. A dimension, we should note, that was in many cases formalized through manifestos, membership lists, and even closed-membership structures modeled on joint-stock corporations.

highly visible and prestigious.²⁵ The network visualization thus articulates a relatively ordered system of centralizing cultural capital in which authors appear to gravitate toward the network's "center": here, *Poetry* magazine.

If we let our eyes drift to the map's corners, however, a more interesting field of poetic activity appears. Like a sun, the network's center blinds from sight figures and activity located at the outer edges of its immediate penumbra. At the bottom of the map, we find a handful of poets associated with what would become the Harlem Renaissance, such as James Weldon Johnson and Jessie Redmon Fauset, while at the top of the map we find several members of the Southern Fugitives Group. Future founders of this group, Stark Young and John Crowe Ransom, hover in near isolation, in search of propinquity. We flag these moments because, despite the force of high modernism's centralizing authority, and the morphological cohesion it brings, there exist at the map's outer limits early signs of alternative poetic circles that, as we shall see, will significantly alter the overall shape of the network. We are interested in how the Harlem Renaissance and Fugitives help to later dilute the structural hegemony imposed by the *Poetry* Circle poets.

We now skip ahead seven years to discern the full blossoming, as well as impact, of the Harlem Renaissance and Fugitive poetic movements (Figure 5). What merely existed in seedlike form in 1917 has exploded into structural visibility by 1924. In the top left-hand corner of the map, we find a new "sun" in the guise of the *Fugitive* magazine, which gathers to its fold key Fugitive poets, such as Merrill Moore and Robert Penn Warren, while at the bottom left-hand corner, curiously symmetrical, we similarly find a group of African American poets, such as Langston Hughes and Helene Johnson, clustered tightly around *Crisis*, a key journal of the Harlem Renaissance movement.²⁶ Moreover, we also note that the rise of new "stars" of poetic

25. For our network maps, we have created two provisional labels to categorize poets who, like Pound and Sandburg, regularly published in *Poetry*. Poets who thought of themselves as "high modernist," who closely affiliated with Pound and Eliot, and who frequently appeared in journals like the *Dial*, are labeled as "*Dial* Group" poets. These we distinguish from poets who published in *Poetry* but who did not so strongly identify with Pound, Eliot, or their coterie. The latter are labeled "*Poetry* Circle" poets. These are purely descriptive categories based on where poets published, not on judgments about their respective styles or aesthetic dispositions. There was obviously a significant amount of overlap between *Dial* Group and *Poetry* Circle poets, but these admittedly reductive and artificial categories are useful for differentiating poets based on their publishing activity.

26. We recognize that some journals, such as *Crisis*, were not exclusively journals of poetry and that poetic material often represented a relatively small proportion of what

activity corresponds to the weakening of our map's initial, all-encompassing "sun" of *Poetry* magazine, which seemed to pull the entire poetic field in one single direction. In its place, we locate multiple centripetal "stars" that represent alternative sites of congregation for new poets.

Our network maps confirm modernist literary history: in the late 1910s, the poetic field was dominated by modernist poets, such as H.D. and Wallace Stevens, many of whom achieved their dominance through close affiliation with journals such as *Poetry* and, to a lesser extent, *Others* and *Double Dealer*. Similarly, by the mid-1920s, modernist poetics peaks, and we begin to see the emergence of new groups, such as the Fugitive and Renaissance poets, who form partly in distinction to the high modernists. For the most part, our network maps instantly convey what several decades' worth of modernist historiography have captured via textual criticism and biography. In an especially keen and striking way, these visualizations confirm a particularly central and long-standing claim of modernist criticism: that the year 1922 was significant to modernism's development. Scholars such as Michael North identify 1922 as a watershed year in high modernism: T. S. Eliot's *The Waste Land*, James Joyce's *Ulysses*, and Claude McKay's *Harlem Shadows* all were published that year. The year 1922 marked the apex of high modernist poetics, as well as the crystallization of various "minority" movements, such as the Harlem Renaissance. After 1922, the modernist field begins to fracture, while groups like the Fugitives begin to claim some of the former's authoritative space. Comparing the slide of 1920–21 (Figure 6) with that of 1924–25—the former revealing a surprisingly forceful and cogent modernist circle centered on *Poetry* and the *Dial*, the latter charting the emergence of increasingly distinct Harlem Renaissance and Fugitive coterie—we identify a pattern that neatly echoes North's version of 1922 and its aftermath.²⁷ Pound famously declared that the Christian era had ended in 1922, while Willa Cather, perhaps more on the losing end of things, noted that "the world broke in two in 1922 or thereabouts."²⁸ Our visualizations thus not only keenly resonate

appeared in each issue. To the extent that such journals still served as sites for organizing poetic activity, however, this does not invalidate our method. In the future, we hope to refine our measure for weighting relations by accounting for such discrepancies in journal composition.

27. Michael North, *Reading 1922: A Return to the Scene of the Modern* (Oxford: Oxford University Press, 2001), 3–4.

28. Quoted in North, *Reading 1922*, 3.

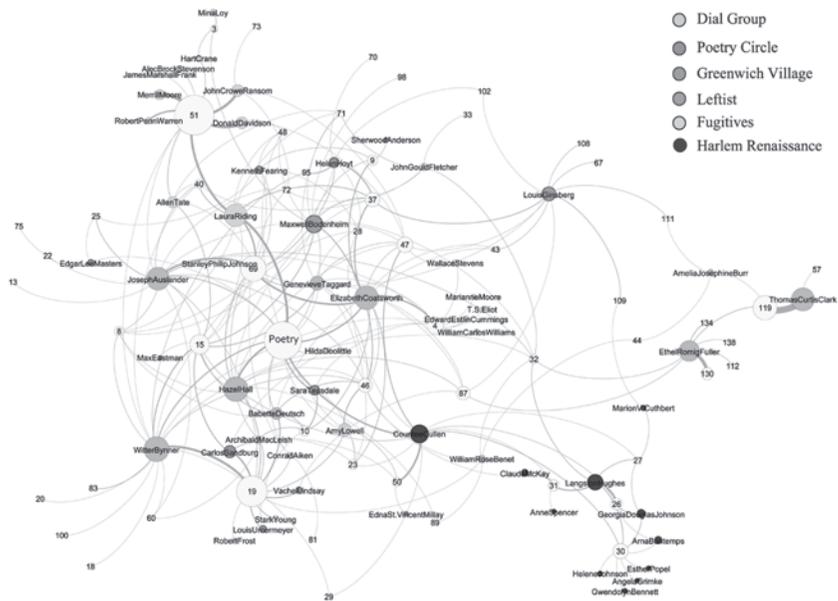


Figure 5. American poets, 1924–25

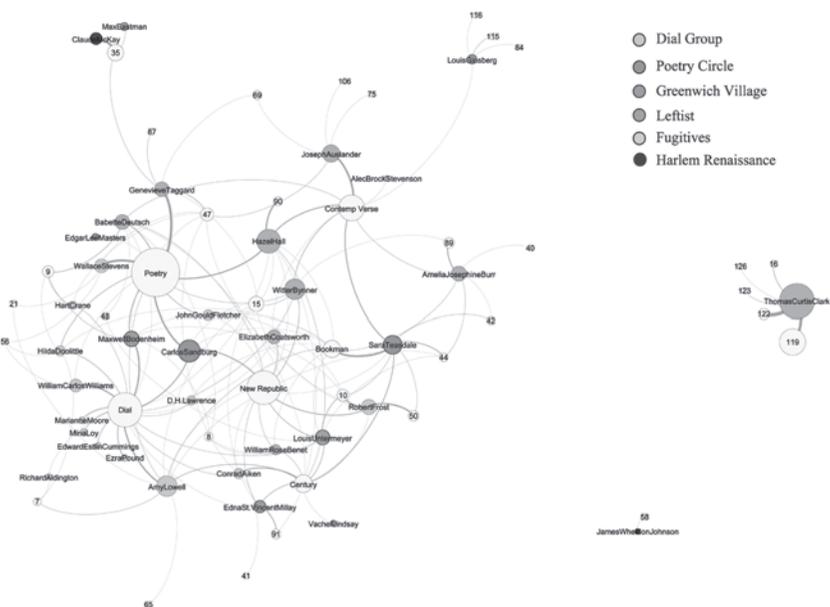


Figure 6. American poets, 1920–21

with modernist literary history but also register what the poets themselves seem to have felt was happening around them, even if they could not rise up into the air and discern the overall shape of the literary field, as we do here with the aid of digital methods.

Brokered Modernism

That these methods initially confirm the essential truths and narratives of modernist literary history should not be taken as an indication that they are superfluous; rather, they are a sign that our model is working. If these images showed us something completely unrecognizable, then we would know that our theory about journals providing an organizing social logic to the poetic field was entirely off base. Since our construct appears to be valid, however, we can now begin looking for the new and different stories that it reveals. For while our maps consist of well-known canonical poets, such as Stevens or Hughes, they are also populated by poets of lesser distinction, such as Ethel Fuller or Helene Johnson, who have generally faded from critical memory. However, as is instantly evident, the network would simply not possess its basic shape, nor would it even be a “network,” without the presence of such second- and third-tier poets, who fill the spaces within poetic cliques and the spaces between them. How do we account for such figures? What purpose do they serve? At stake is a basic grasp of how the network operates and its essential structuring principles. Here, we are interested in studying the individual function of both first- and second-tier poets within the network (local dynamics), as well as how they relate to those further removed and thus contribute to the global shape of the network.

A different and more empirically robust vocabulary is needed to frame and consider these questions. Here, we borrow from recent sociology and organizational studies the twin concepts of “brokerage” and “closure,” ideas central to recent work in network theory across the sciences and social sciences. First, brokerage: Ronald Burt, drawing from extensive research on corporate organizations, finds that all organizations, such as corporations, and fields of labor, such as the film industry, consist of various agents distributed into discrete, smaller areas of work, such as “sales” or “acting,” that operate largely independently yet, at the same time, inevitably require moments of interaction and exchange. The spaces that exist between areas of work Burt identifies as “structural holes,” and these holes, more often than not, represent impediments to synergy between different

fields of knowledge and idea innovation. Burt valorizes those who bridge the gap between different areas (“connectors”) and thus also celebrates the process by which these gaps are filled—what he dubs “brokerage.” Burt writes, “A structural hole is a potentially valuable context for action, brokerage is the action of coordinating across the hole with bridges between people on opposite sides of the hole, and network entrepreneurs, or brokers, are the people who build the bridges.”²⁹ For Burt, the heroes of the social network are its mediators: “brokers do better.”³⁰

One’s eyes naturally focus upon the massive “sun” or smaller “stars” that occupy our network visualizations, yet somewhat less visible broker figures significantly populate the literary field, particularly as the field grows more complex in the 1920s. Here we zoom in upon a critical year, 1924–25, in the expansion of US modernism (Figure 5). We flag two broker figures—Amy Lowell and Countee Cullen—who appear to link two otherwise disparate and unrelated poetic circles, the *Poetry* Circle and the Harlem Renaissance Group. Their proximity to each other and, in turn, their relative distance from their “home” coterie (*Poetry* for Lowell, the Renaissance for Cullen) indicate that both were publishing consistently in journals not typically associated with their normative home circles, which, like gravitation toward a new “star,” pulls them away from *Poetry* or the Harlem Renaissance and in the direction of a new circle. For example, Lowell published a number of poems in both *Harper’s* and the *Century*, journals not typically frequented by other *Poetry* magazine poets, such as Sandburg or Conrad Aiken, while similarly, Cullen, unlike his peers, such as Helene Johnson and Georgia Douglas Johnson in the Harlem Renaissance, published a raft of poems in *Poetry*, which pulls him closer to the map’s “center.” And because Cullen also published poems in *Harper’s* and the *Century*, he is drawn closer to Lowell such that the two overlap within that common space. Both poets appear to act as brokers because each fills the “structural hole” separating their respective “home” poetic circles. Or more precisely, these poets—who in our network model are really stand-ins for their publication habits at a given time—bridged gaps in the field by strategically submitting their work to, and having it selected for publication in, clusters of journals that were otherwise sparsely connected, thus exposing their work to multiple audiences.

29. Ronald Burt, *Brokerage and Closure: An Introduction to Social Capital* (Oxford: Oxford University Press, 2005), 18.

30. Burt, *Brokerage and Closure*, 11.

The identification of Lowell and Cullen as potential literary “brokers” raises a host of questions. Some distinctions are in order. Importantly, we wish to distinguish social brokers from literary brokers so as to acknowledge that how poets relate to each other in the social world (via parties, poetry readings, and so forth) differs from how they function within the world of letters and how relations form in that context. In fact, we find that relations within these two worlds are often incommensurable and at times diametrically opposed and antagonistic. Thus, when we identify Lowell and Cullen as “brokers,” we make this claim based purely on their structural positions within our network map, which correlates exclusively to publication habits. The claim is merely an empirical and descriptive one without reference to potential social brokerage within the actual world as it is lived in apartments, streets, and cafés. Indeed, this is a critical distinction because the poetic figures we typically think of as social brokers, individuals such as Pound and Hughes, who traveled widely, made many friends, and facilitated numerous collaborations both nationally and globally, counterintuitively appear within the field of poetry publication deeply ensconced in their own respective literary clusters (Figure 7). We find a very striking example among the *Fugitive* crowd in the mid-1920s: Warren, usually seen as the dominant social broker of this group because of his broad educational itinerary, which took him to Yale, Oxford, and the University of California, Berkeley, all far from Nashville, and his well-documented sociability and social connectedness, is a prime candidate to serve as a literary broker. Yet, we find quite the opposite: like Hughes, Warren instead binds himself to the core of the Southern *Fugitive* Group, its gravitational pull strong (Figure 8).

Social brokerage and literary brokerage act differently. Brokers in the literary field do not always serve as leaders of specific literary movements. In fact, we often find that “second-tier” poets, such as Lowell (second tier in terms of posthumous reputation), act as their respective movement’s intermediaries, while “first-tier” poets, such as Hughes or Warren, frequently appear as their group’s most closed-in, yet dominant, poets. Here, we significantly depart from Burt’s theses and, in general, many of the arguments developed in corporate sociology regarding social networks. For Burt, the benefits of social brokerage—as being *the* person to fulfill that task—are unequivocal: “for groups and individuals, networks that span structural holes are associated with more positive evaluations, earlier promotion, and higher compensation.”³¹ Social brokerage is always good and

31. Burt, *Brokerage and Closure*, 55.

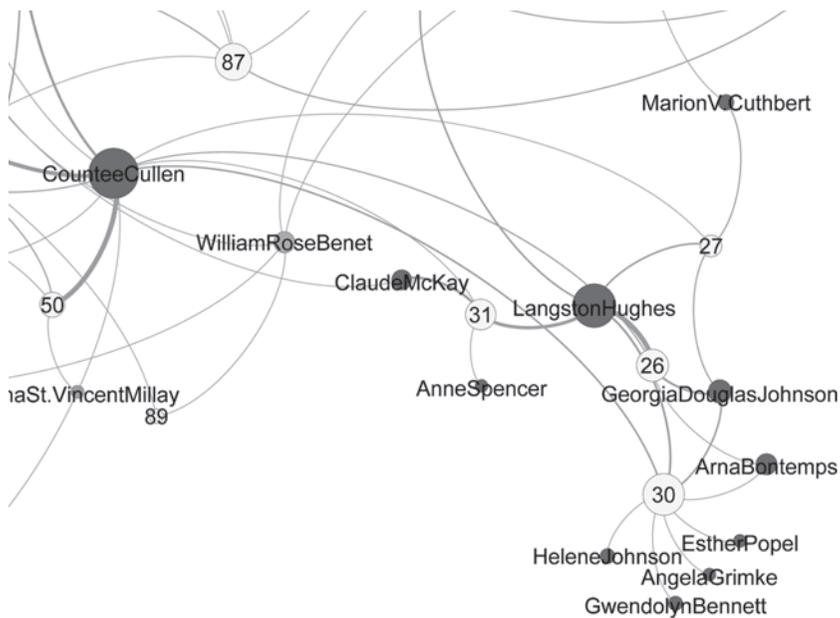


Figure 7. Harlem Renaissance

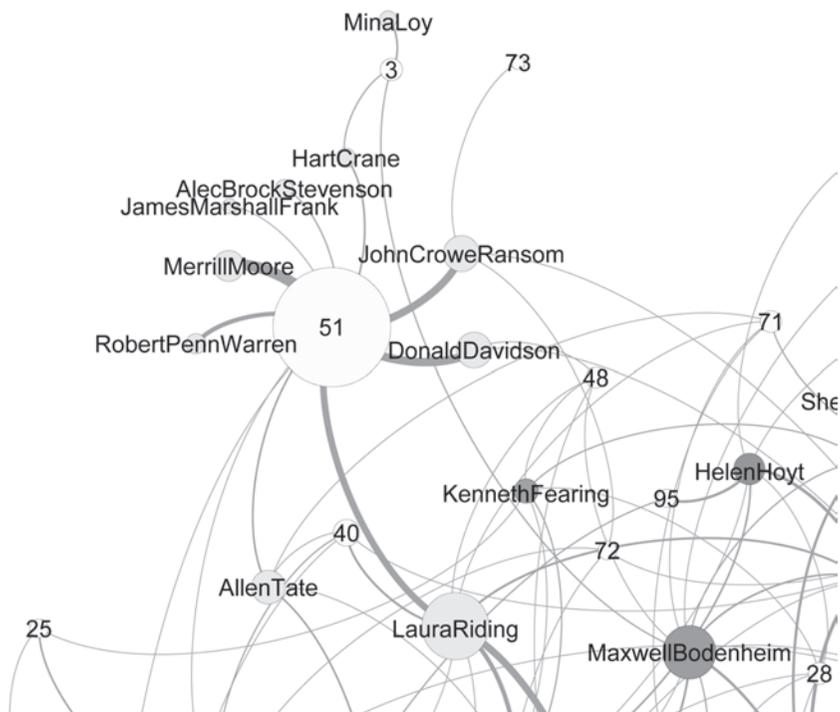


Figure 8. Fugitives

rarely bad, except in that it can cause undue stress because of the need to maintain diverse connections. For sociologists, individuals acquire greater prominence, measured by pay or influence, and networks grow to be more dynamic and better conduits of innovative ideas via increased brokerage. Thus, we arrive at a basic paradox in our literary network analysis: Why do modernism's most dominant and influential poets thrive by *avoiding* brokerage in the literary field, even despite the field being an optimal network for such brokering owing to its highly defined and sparsely connected clusters?

Closure and Literary Prestige

One way to think about these questions is through a consideration of brokerage's opposite, *closure*. Burt's initial position on closure is clear: if brokerage facilitates the flow of ideas and the creation of new ones through the meeting of disparate opinions and worldviews, *closure* enables its antithesis. "When people specialize on their immediate tasks to the exclusion of adjacent tasks, they lose track of other groups and the external environment. Variation in belief and practice develops between groups. People here do it differently than people over there. In fact, in-group communication can create barriers to information inconsistent with prevailing beliefs and practices."³² Moving this concept to our literary field, one might suspect that closure in poetic networks—the tightening of circles of like-minded writers—would lead to the further compression of those circles at the exclusion of new members and obstruct dialogue between different types of thinkers and writers, all ostensibly bad things for literary creativity. And yet, our network visualization is replete with closure. A careful glance at the 1924–25 time slice (Figure 5) indicates that there are at least three well-defined cliques giving shape to the field (the Harlem Renaissance poets, the Fugitives, and several high modernists gathered around the *Dial*). Near or at the center of the first two groups stands a well-known poet who, we might say, enables closure by serving as a focal point around which activity is concentrated. For the Harlem Renaissance, we have Hughes, and for the Fugitives, we have Ransom. Interestingly, in the case of the *Dial*, no single poet stands out at all, as each was contributing only to that journal and in roughly the same amount (about one poem apiece).³³

32. Burt, *Brokerage and Closure*, 15.

33. Ironically, the most prolific contributor of poems to the *Dial* during these years was Elizabeth Coatsworth, who is perhaps the least well remembered of the entire group.

Can closure represent a positive attribute? Sometimes, Burt argues, especially as a necessary preface to social brokerage or its supplement. Sociologists postulate that closure enables intimacy and trust between the members of a group, and the further strengthening of bonds between group members, whereas brokerage continually represents a process of dealing with relative strangers. Brokerage, therefore, can be very risky. However, closure facilitates a more predictable “closed network,” in which one can work with other individuals whose reputations are better known, and thus the success of collaboration or interaction is relatively more likely. Closure is all about trust, and where trust is something desirable, closure has great social capital. Moreover, a closed social network allows one to build one’s reputation precisely among such an intimate group of known peers and colleagues. One’s accomplishments are better understood and appreciated within such close bonds, and from this, one earns one’s reputation. Closure is central to establishing credibility among one’s peers. By contrast, brokerage always means starting over with fresh new faces, which can be deeply taxing. Last, and this is Burt’s main thesis, closure gives one the necessary sense of security and confidence to reach out to other groups, build connections, and act like a broker.

What does this mean for the apparent ubiquity of closure in our map? Let’s look again at our 1924–25 map, focusing on the Fugitives (Figure 5). This is a moment of high closure: the coterie’s key figures, from Ransom to Allen Tate, clump together quite closely, pulled inward by the gravity of the *Fugitive*. In terms of actual writing, one can correlate this internal “tightness” to the group’s manifesto, *I’ll Take My Stand*, a series of essays composed by the group’s members over a ten-year period starting in the early 1920s and published as a single text in 1930. Consider the manifesto’s opening lines: “The authors contributing to this book are Southerners, well acquainted with one another and of similar tastes, though not necessarily living in the same physical community, and perhaps only at this moment aware of themselves as a single group of men. By conversation and exchange of letters over a number of years it had developed that they entertained many convictions in common . . . all tend to support a Southern way of life against what may be called the American or prevailing way.”³⁴ In both its form (the uniting of twelve voices as a single “we”) and content (asserting a common vision formed through intimate exchange despite

34. *I’ll Take My Stand: The South and the Agrarian Tradition*, by Twelve Southerners (Baton Rouge: Louisiana State University Press, 1977), xxxvi.

their shared publication in the *Virginia Quarterly*, for which Sandburg wrote frequently. Perhaps most surprising, the Fugitives now draw close to the Harlem Renaissance itself, a group they once were structurally defined as opposite to, through *Harper's*—Cullen, our earlier strong connector, is just one step removed from Tate, who never wrote for the journal yet shares a common publication disposition with Sandburg, who did. In sum, by 1928, the Fugitive poets, who spent the mid-1920s shoring up the internal coherency of their group and actively excluding “outsiders,” have begun to circulate more widely within the network.

Burt and other sociologists would refer to this evolution as a move toward “structural autonomy”: the gist of the idea is that while brokerage and closure individually serve a purpose—the former to seize on structural holes to help spark innovation and the latter to solidify internal trust and reputation—a group’s interests are best served by a combination of the two.³⁵ We see this with the Fugitives: shortly after the peak of their group’s cohesion in 1925, they quickly disperse to disseminate their ideas to a broader group. The importance of the *Nation* as a connecting site is unsurprising given the biography of Young, a key member. Our map confirms a noted idiosyncrasy of Southern literary history; unlike his fellow Fugitives, Young spent most of his time in New York City among Northern literary elites, becoming an editor for the *Nation* by the late 1920s. Young does not appear in our 1928–29 map because he was busy *editing* poems rather than writing them, facilitating these new links. Further, our maps provide insight into the timing of the Fugitives’ manifesto, *I’ll Take My Stand*. Ironically, it is *after* the apex of their group’s internal cohesion in 1925 and *during* the high point of their group’s spreading outward that they chose to publish their official statement, which, in form and content, appears focused on “closure.” But in terms of their actual publication habits within the poetry field, the group had already shifted into a “brokerage” mode. What we see here is the coordination of brokerage and closure: the two working together to disseminate the Fugitives’ mission. In retrospect, this in part helps explain the later success of this manifesto, and, more broadly, it sheds light on why US poetic circles were successful despite an initial tendency to focus heavily on closure.

35. Burt writes, “A structurally autonomous group consists of people strongly connected to one another, with extensive bridge relations beyond the group . . . [it has] a strong reputation mechanism aligning people inside the group, and a strong vision advantage from brokerage outside the group.” See *Brokerage and Closure*, 141.

Modernist Network Counterfactuals

Our essay so far has aimed to present a purely empirical network visualization of US poetic activity between 1925–29, focused on journal publication to the exclusion of other content or social factors, in order to reveal and understand aspects of this activity otherwise invisible to conventional literary history and criticism. In particular, from our network map, we extrapolate two analytical concepts, brokerage and closure, which we argue serve to impact the overall shape of the poetic field during this time. We suggest that brokerage and closure tend to be overlooked in criticism because only an empirical map can expose its underlying presence, and thus critics have tended to neglect figures vital to this dual process (such as “connectors” like Lowell) as well as certain microdynamics (such as the Fugitive Group’s “structural autonomy” in the late 1920s) that help to explain why a literary group behaved as it did and why this behavior proved advantageous over time.

One advantage of an empirically based approach to literary history is that we can test the validity of our arguments by exploring counterfactual situations in ways not so readily available to textual criticism. For instance, we can subtract certain nodes from our modernist network map and recalculate the relations between entities based on the altered data. What happens when the broker (or closure) figures are removed? Let us return to the map for 1924–25 (Figure 5), a period with both strong connectors, such as Cullen, and network closers who have canonical status, such as Hughes. We begin our counterfactual experiment by first excising Lowell from the map: the immediate effect is not so great, as it merely means that Cullen picks up extra slack in linking the Harlem Renaissance to high modernist camps (Figure 10). His ties to the latter group are indicated by the thickness of the line that runs from him to *Poetry* magazine. However, if we now subtract Cullen, the map transforms significantly (Figure 11). All ties that once connected the two groups no longer exist. The impact of this elision cannot be understated. Whereas with Lowell and Cullen, the Harlem Renaissance and high modernist groups had a potential point of interface through their overlapping publication habits, it now takes at least two full steps to join McKay and either Aiken or Frost, now the “closest” poets from each respective literary group. Consider the steps necessary to get from one group to the other: McKay wrote for the *Bookman*, where Witter Bynner published some poems, and Bynner wrote several poems for *Poetry* magazine and *New Republic*, which finally connects us back to the high modernist group. With Lowell and Cullen, the link between the groups had been immediate.

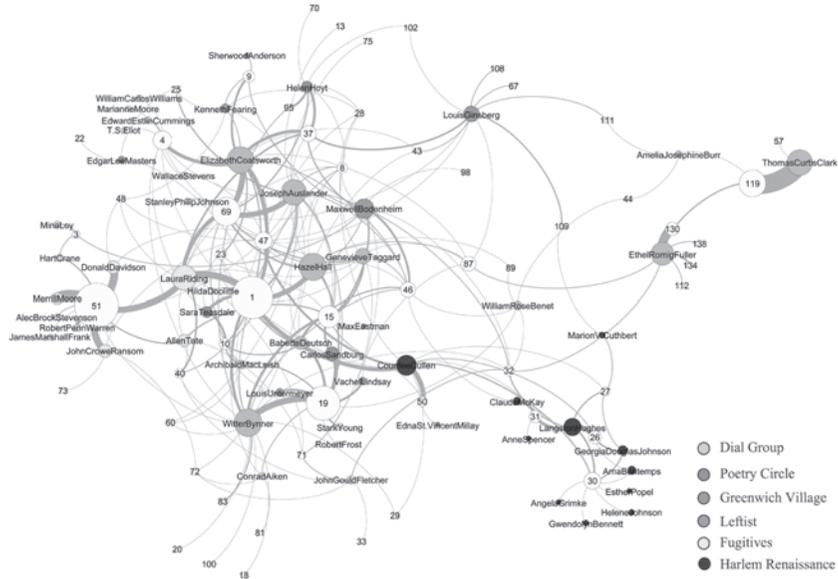


Figure 10. American poets, 1924-25 (Lowell removed)

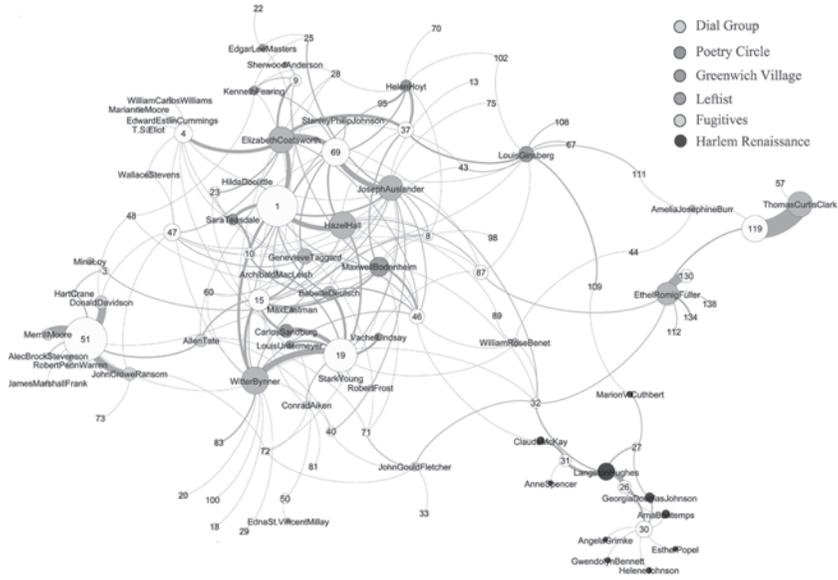


Figure 11. American poets, 1924-25 (Lowell and Cullen removed)

By comparison, how important are closure figures to the structure of the network? What happens, for instance, when we take away figures such as Hughes from our map? First, consider once again the overall morphology of the 1924–25 network moment. Now, reconsider the map when we excise both Hughes and Ransom from the network. There is virtually no visible change in the visualization (Figure 12). For the Harlem Renaissance, some key relations between individual members, such as McKay and other Renaissance poets, alter slightly. Yet the overall structure of the movement remains intact, and, moreover, its structural relation to the field as a whole remains unchanged. For sure, Hughes played a vital role in mediating *internal* relations within the group. In terms of the group's relations to other literary movements, however, Hughes appears relatively marginal. Similarly, on the other side of the literary world, Ransom's excision from the map makes an even smaller global impact. It appears that even the internal relations of the Fugitives are not significantly transformed as a result of his absence. For the most part, the primary mediating force within their group, as well as externally, is the *Fugitive* journal itself. Ransom's elision is hardly felt, as each of the Fugitive poets still cluster tightly together through their direct relations with the journal.

Some clarifications, of course, are in order. Our claim is not that figures such as Hughes or Ransom were marginal to the formation of their respective movements; such a claim would be absurd given what we know of literary history. Nor do we claim that either poet was insignificant to his movements' participation and publicity within the broader world of American modernist poetry. Our claim is merely structural in nature: we argue that within modernism's field of poetic activity as it was concretized through journal publication and through the networks of poetic affiliation that these publications generated, figures such as Hughes and Ransom had little impact on the structure of relations within the overall network. The sheer disparity between their known role as cultural brokers and leaders of their respective movements, and their relative marginality in the field of poetic production as a whole, raises important questions that analysis of the network map alone cannot answer. Such distant analysis also cannot tell us whether the apparent structural significance of literary brokers such as Lowell and Cullen is indicative of actual difference at the levels of cultural form and interpersonal relations. For this it will be necessary to investigate the actual texts and historical conditions that generated these network effects, a point we will return to in our conclusion. Yet if network analysis can take us only so far in our examination of the interplay between social

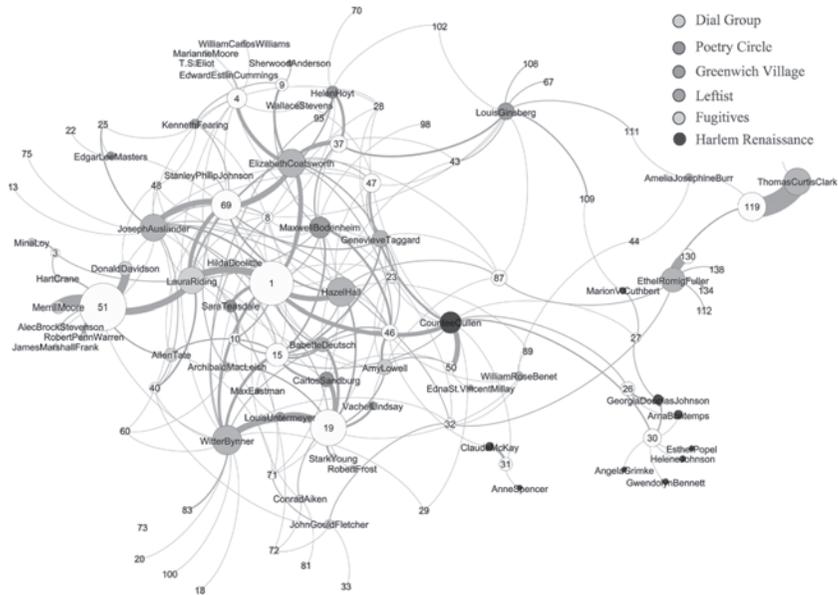


Figure 12. American poets, 1924–25 (Hughes and Ransom removed)

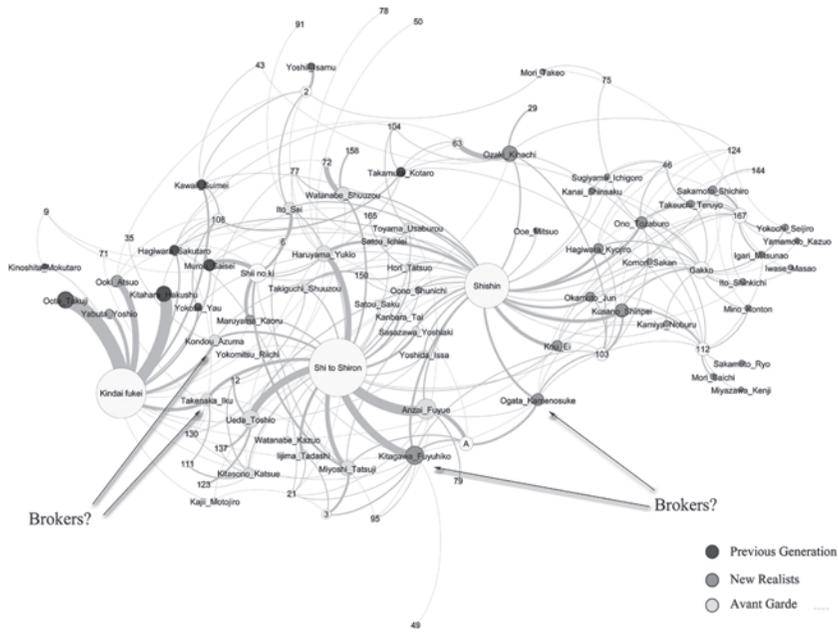


Figure 13. Japanese poets, 1927–29

and cultural structures, this does not discount its ability to yield rich new interpretive categories (i.e., brokerage) that come to light only through the expressly relational and empirical approach to the literary archive we are proposing.

Comparative Modernisms

The richness of these categories also derives, as we hinted at earlier, from the ability to apply them across cultural contexts, both East and West, where the independent journal served as a shared media platform for modernist literary movements. That is, where we observe analogous kinds of relations between authors and sites of publication and thus where we would expect to find comparable dynamics between social structure and cultural form. Much has been written about the textual exchanges that undergirded the aesthetic foundations of modernist poetry and fiction on either side of the Pacific, with heavy intellectual, and sometimes personal, debts owed in both directions.³⁶ There has been less interest, however, in the institutional and media mechanisms that structured this exchange and which were themselves variously borrowed or adapted as constitutive elements in the making of local modernisms. During the prewar period, both Japan and China witnessed developments similar in kind to the United States and parts of Europe whereby poetic and other “high” forms of literary activity came to be collectively organized around independent or semiautonomous publications that functioned as institutional sites for delineating differences in the evolving marketplace for literary expression. In Japan, beginning in the 1920s, the increasing access to, and affordability of, journal publication combined with the rapid (if piecemeal) importation of the latest avant-garde movements from Europe and America (e.g., symbolism, Dadaism, surrealism, formalism) to produce a rich culture of “little magazines” nearly as vibrant as what we see in the United States for the period we are considering and certainly just as diverse in its variety of stylistic and ideological ori-

36. See, for instance, Christopher Bush, *Ideographic Modernism: China, Writing, Media* (Oxford: Oxford University Press, 2010); Eric Hayot, *Chinese Dreams: Pound, Brecht, Tel Quel* (Ann Arbor: University of Michigan Press, 2004); Shu-mei Shih, *The Lure of the Modern: Writing Modernism in Semicolonial China, 1917–1937* (Berkeley: University of California Press, 2001); John Solt, *Shredding the Tapestry of Meaning: The Poetry and Poetics of Kitasono Katsue* (Cambridge, MA: Harvard University Asia Center, 1999); and Seiji M. Lippit, *Topographies of Japanese Modernism* (New York: Columbia University Press, 2002).

entations. Indeed, the index of modernist magazines from which we draw our data catalogs over 100,000 poems, essays, and translations written by over 4,000 individuals in 166 different journals between 1920 and 1944.³⁷

For Republican China (1911–49), the exact scale of coterie-based journal publication is harder to estimate owing to a more volatile market and spottier archival records, but from the 1920s onward, there was a similarly rapid proliferation of independent and coterie-based publications. According to one exaggerated account, at least one hundred such journals were in circulation by 1923, despite nothing of the sort having existed just three years prior.³⁸ In most instances, these journals served as critical venues for the many different literary societies and schools that began to compete for readership in the emerging marketplace for vernacular and nontraditional literary forms. These groups ranged from highly formal institutions to much more amorphous organizations, but what is significant for our project is that the journals associated with each group generally published the writing of its own members to a remarkably high degree. Thus, for writers at the time, an essential step to defining one's place within the literary field was to affiliate with a literary group and thereby gain access to a guaranteed channel of publication.³⁹

To a greater or lesser degree, then, modern poetic production across these three national contexts was similarly structured around collaborative media forms (little magazines, periodicals, coterie journals) that shared certain formal properties (manifestos, membership lists) and were fast becoming a kind of universal currency of literary modernism. Despite the obviously different historical conditions and social contexts surrounding this shared structure in each of the three countries, the fact that journals were key organizers of literary affiliation and collaboration allows us to establish generalizable structural properties observable across the distinct network topologies arising in each locale. Consider the property of brokerage, for instance, which is simply the artifact of a publication network in which an

37. *Gendai-shi 1920–1944: Modanizumu shishi sakuhin yōran*, ed. Wada Hirofumi (Tokyo: Nichigai, 2006). From this index, we are currently working with a selection of 62 poets who together accounted for about 7,500 of the total number of publications.

38. Despite the spurious nature of this claim, made by Zheng Zhenduo in an issue of *Wenxue xunkan* (Literature trimonthly), it testifies to a general sense that the literary field was being drastically redefined by new kinds of coterie publication. See Michel Hockx, "The Chinese Literary Association (*Wenxue yanjiu hui*)," in *Literary Societies of Republican China*, ed. Kirk A. Denton and Michel Hockx (Lanham, MD: Lexington Books, 2008), 94.

39. Kirk A. Denton and Michel Hockx, "Introduction: Literary Societies in Republican China," in *Literary Societies of Republican China*, 12–13.

individual's lines of connection span multiple clusters of more dense local ties. In literary fields where similarly dense clusters of activity are present, it stands to reason that there will be figures occupying structurally analogous bridging positions. To be sure, the kinds of publications facilitating this brokerage will be qualitatively different, and so too the characteristics of the communities being mediated, but the position itself will manifest as a measurable network property in each of the fields.

Some general observations on the data we have for Japan and China will help clarify this point. In the case of Japan, consider the network image for the years 1927–29 (Figure 13), an extremely dynamic period for the poets in our dataset. Here they fall into roughly three main camps: young high modernists and formalists who actively imported the latest avant-garde poetic theories from Europe; anarchists and new realists, many of them from the provinces, who pushed for more socially grounded and humanistic approaches to poetry; and well-established poets who represent the cutting edge of the previous generation.⁴⁰ What is immediately apparent is that each of these camps largely orbits their own bright sun, with some members more firmly anchored to these brighter nodes and some drawn out by dimmer stars. Several from the older generation, who had been the giants of their day and who were still looked up to as the fathers of modern free verse, cling to *Kindai fūkei* (Modern landscape) on the left and have a minor presence in the wider field. The few connections they do have are confined to some of the up-and-coming avant-garde poets, who as a group either cluster around *Shi to shiron* (Poem and poesis) in the middle or huddle between it and *Shishin* (Muse) on the right. The anarchists and new realists, for their part, have strong ties to *Shishin*, too, but are also active in their own dense networks of enclosed activity. Between the three camps, we can identify several figures who potentially fill structural holes: Kondō Azuma and Takenaka Iku on the left have strong ties to both the old generation and the new, while Kitagawa Fuyuhiko and Ogata Kamenosuke on the bottom form a loose bridge between the avant-garde poets and the new realists (Figure 13).

Yet by far the most obvious broker on the map—the node whose absence would effectively split the field in half—is not a poet at all but rather the journal *Shishin*. On the one hand, this fact underwrites literary histori-

40. As with the American data, these categories describe general tendencies of the poets at the time and are meant as a visual guide, not as definitive statements. It should also be noted that links representing a single publication have been removed.

ans' typical descriptions of the journal as a forum for modern poetry of all kinds, whether leftist or high modernist, and indeed confirms the stated mission of its editors to "put differences in -isms and thought beyond its purview."⁴¹ At the same time, it is striking that *Shishin* looks to be the only place where this is happening. A few of the "new realist" poets make efforts to connect to the other side through weaker channels, but, for the most part, it is *Shishin* itself that holds the field together. This would change in the years ahead as *Shi to shiron* eclipsed *Shishin* as the preeminent site for contemporary poets to display their work, though it was less welcoming to leftist and new realist tendencies. But what this network map of the late 1920s allows us to witness is a critical moment of condensation for the field by which emergent poetic cliques gained the opportunity to speak to one another on the same page.

If we turn now to the network map of China, such a moment seems impossible to imagine (Figure 14). In this visualization, based on publication data collected from eight key journals of the Republican era, there is a striking paucity of broker figures of any kind. Most of the ties we do see are only one poem "thick" and thus can hardly be said to constitute any connection at all. The strongest broker figure appears to be Liu Bannong, who links two journals overseen by the dynamic publishing entrepreneur Lin Yutang. But given that the journals were published over a decade apart, and with significantly different aims, this represents a form of brokerage quite different from the one we have been discussing. Looking to the bottom left, we see sparks of connectivity between two important leftist journals (*Beidou* and *Qi yue*) from the early 1930s and an ostensibly nonpartisan publication (*Kangzhan wenyi*) established in 1938 for writers seeking to resist the Japanese invasion. And yet if we were to remove all ties representing just a single instance of publication, every bridge would disappear except for one, making it hard to argue that brokerage is manifesting in ways similar to what we find in the US and Japanese cases.⁴²

What we ultimately have, then, is not a single sun with planets orbiting both near and far, as in the US images from the late teens, nor a bipolar system dividing the literary universe into two halves, as with Japan in the late 1920s, but multiple, weakly connected sunbursts that hardly seem to

41. The statement was made in the inaugural issue of *Shishin* (September 1925) by editor in chief Tanaka Seiichi.

42. Contrary to what our data suggests, both *Beidou* and *Kangzhan wenyi* actually tried to resist closure by presenting themselves as egalitarian journals open to writers of all different backgrounds and viewpoints.

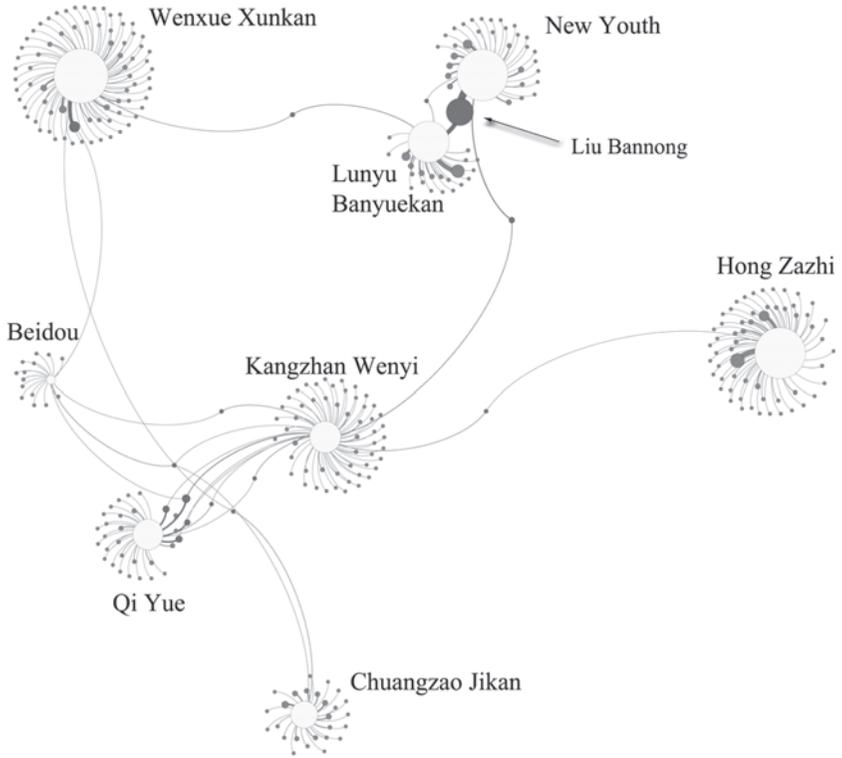


Figure 14. Chinese poets, 1915–45

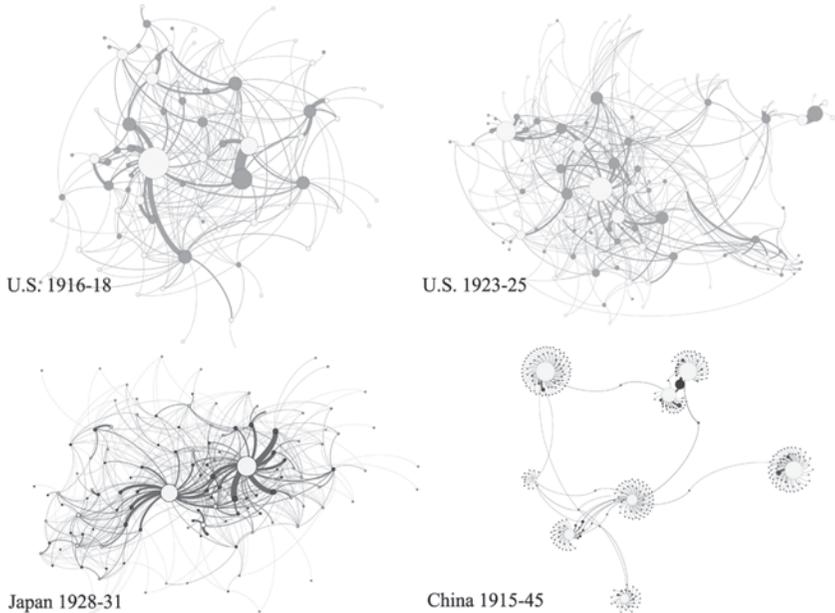


Figure 15. Comparative network morphologies

belong to the same literary space (Figure 15). This is in part an effect of the highly provisional dataset we are currently working with. Lacking an exhaustive index to poetry publications of the period, we have had to assemble our data in reverse by selecting key journals and recording the poetry publications found there.⁴³ Naturally, this leads to a high degree of clustering because we do not see the complete career arcs of each individual, who likely crossed paths in more places than our network map suggests. However, our visualization does confirm what now passes as a critical consensus among Chinese literary historians of the Republican period: that the poetry scene in China from the late 1910s to the early 1940s was dominated by intense partisanship, a vigorous “battle of slogans” between rival groups, such as the more centrist *Lunyu* Group and the militant League of Leftist Writers, as well as within groups, such as the divide between Lu Xun and Zhou Yang within the League of Leftist Writers itself in the 1930s.

At the same time, as with the US data, our visualization—particularly its revelation of a near absence of literary brokers—raises new questions for Chinese literary history that go beyond merely confirming scholarly consensus. First, it allows scholars to reframe the existing significance of certain poets, such as Liu, already firmly placed within particular categories. Liu’s migration from Shanghai to Beijing in the late teens is well known to scholars, and this accounts for his linkage between *New Youth*, a Beijing journal, and *Lunyu*, a Shanghai magazine. Yet, while historians such as Michel Hockx interpret Liu’s straddling of Beijing and Shanghai as producing a kind of “style in conflict” discernible in his writing, we find that Liu’s physical migration also facilitates publishing connections between Beijing and Shanghai cliques.⁴⁴ If Liu struggled to reconcile his Beijing past with his Shanghai future in the form of his poetry, he nonetheless used his experiences in both cities to act as a broker in the poetry field.

Further, our visualization also allows us to propose new questions on a more macro and comparative scale. For example, is the lack of interaction between poetry circles in Republican China indicative of a high degree of closure within these communities, both at the moment of their formation and across their various instantiations? Or does brokerage fail to show up as a network effect because it is taking place somewhere other than the journals themselves? And more provocatively, depending on whether the

43. Working in this manner, we have thus far built a database with roughly 1,500 publications by approximately 320 people.

44. Hockx, *Questions of Style*, 158–87.

first or second question turns out to be more relevant, does either possibility point to a distinctly “Chinese” national mode of modernist interaction? While it is impossible to address these macrolevel questions without further data, what we want to call attention to here is the very ability of network analysis to open up such lines of inquiry by giving us generalizable measures for quantifying degrees of relationality between objects. Most importantly, network analysis does so in a way that establishes a comparative framework through which a diverse array of network structures is made not reducible to each other but rather mutually intelligible and mutually observable through the same interpretive categories.

At the Limits of Network Analysis

All acts of interpretation, whether quantitatively or qualitatively driven, must inevitably reduce the dimensionality of the objects they seek to comprehend. We, too, have had to reduce the dimensionality of the literary field, but in ways we believe are useful for discerning relational social categories that are less visible at smaller scales of analysis (e.g., brokerage, closure, marginality); for exposing the social dynamics that are part and parcel of avant-garde journal publication in the prewar period; and for establishing the grounds of a sociologically oriented comparative poetics. We also recognize, however, that our reductions come at a cost. By way of conclusion, we will address some of the limitations of our proposed methodology and suggest how further refinement and iterative testing of our network model, an essential part of all quantitative work, will lead to interpretations of the data that are better able to address these limits.

One key limitation relates to the matter of comparability. The comparative poetics we gesture toward is built around a method that brackets all dimensions of social relation save one (i.e., publication) in order to imagine closed systems guided by similar organizational principles. In this way, we establish the grounds for comparison across multiple systems but also raise concerns about whether other independent variables or exogenous factors may be the real drivers of literary affiliation in any particular context. It is reasonable to assume, for instance, that copublication was not the only, nor even the most powerful, force guiding the formation of the interpersonal networks by which poets defined themselves in the United States, Japan, and China. What about residual forms of poetic collaboration that predate the rise of coterie journals as a media phenomenon? Or the very different ways that the state and politics came to interfere in and restrict the

kinds of collaboration that were possible? And what about relations based on shared geography or educational background? Interestingly, more complex applications of network analysis make it possible to compare networks based on different kinds of relations and analyze how these multiple social dimensions are correlated, thus correcting for an overemphasis on any single one and allowing for more careful assessment of the relative influence of each in a given national setting. These applications are something we would like to pursue as our dataset becomes more robust. But even if it can be shown that other factors played a more dominant or equally influential role on the interplay of social structure and cultural form, such a realization itself will depend on an understanding of the shared substrate linking the different contexts under investigation. Journals may not have systematized poetic activity in the same way everywhere, but we argue that they did so just enough to make them a valuable baseline of comparison within the broader empirical framework that network analysis provides.

On the matter of brokerage and closure, at least two issues have been left unresolved. First, with regard to the origins and social significance of brokerage, we have repeatedly deferred the close textual and historical analysis that will be essential in determining how the position of “literary broker” actually mattered in poetry publication networks. It may be that it will matter more in some instances than others, or that it will matter differently across the range of broker figures we discover, but deciding this will be impossible without conventional modes of close reading (e.g., comparison of material sent by brokers to different publications, analysis of how this material reinforced or contested the aesthetic tendencies of the communities they bridged, examination of personal interactions with editors and other poets). Yet a core argument of this essay is that it is precisely the irreducibility of brokerage in our “distant” readings of the network that opens up what would otherwise be invisible lines of hermeneutic inquiry. And only through such distant readings can we pursue this irreducibility *systematically* so as to develop arguments about brokerage that transcend the individual case.

The second unresolved issue relates to time. Thus far, most of our images have utilized a two-year window to visualize the publication network. But is this the optimal time frame through which to observe poetic affiliation across journal space? In other words, to cite the most extreme case, should a poet who publishes in the January issue of a journal be associated with a poet who publishes in the December issue of that same journal the following year? Our current images suggest that this is indeed a

meaningful relation, but one can imagine shrinking this window to one year, or expanding it to three, and coming up with quite different results. As our work progresses, it will thus be necessary to develop more precise arguments about brokerage (and other relational positions in the network) as a function of time, something we can do by testing different hypotheses about how resistant or vulnerable poetic affiliation is to temporal decay.

The problem of temporal framing relates to a final core assumption of our proposed methodology, namely, the idea that the periodicals and little magazines of the era were coherent institutional sites that brought together poets with certain shared affinities. This may not seem a problematic assumption given how literary scholars have generally treated these sites as exhibiting a high degree of internal consistency, but surely we can think of exceptions to this and even of reasons to avoid treating the journals as coherent units. What about journals that changed their ideological direction midway through, or that contained material from competing factions and stylistically divergent poets, or whose membership changed drastically between the first and last issues? Our response to such “exceptions” is twofold. From a methodological standpoint, if we find that certain journals in our dataset, such as *Poetry* magazine in the United States or *Shishin* in Japan, prevent us from isolating the structures of affiliation that interest us because they bring together poets of all types, then we may need to extract them from our network or find ways to weight their influence on affiliation differently from journals with a tighter coherence. Theoretically, we defend our model on the grounds that it does not insist that this coherency has to be read deterministically, as if a poet’s participation in a journal can be taken as the singular index to his or her poetic identity. To the contrary, our model aims to reveal network-based patterns of publication activity that can be compared across the entire field of production, thus making it possible to see how consistently or inconsistently patterns of poetic affiliation actually overlapped. It aims, that is, to rigorously investigate what collaborative coherency meant at all, at least as far as that can be discerned from a bird’s-eye view of who was publishing with whom and precisely when and how often they were doing so. Network analysis, as we have demonstrated, both gives us such a view even as it opens up productive new access points into the social dimensions of modernist poetic style and form.