



PROJECT MUSE®

---

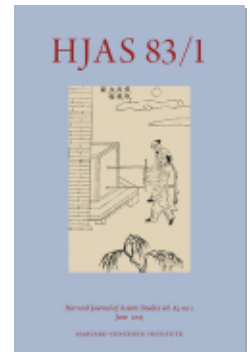
## The Digital Turn and New Modes of Historical Inquiry

Nicolas Tackett

Harvard Journal of Asiatic Studies, Volume 83, Number 1, June 2023,  
pp. 153-165 (Review)

Published by Harvard-Yenching Institute

DOI: <https://doi.org/10.1353/jas.2023.a922624>



➔ *For additional information about this article*

<https://muse.jhu.edu/article/922624>

# Review Essay

## The Digital Turn and New Modes of Historical Inquiry

NICOLAS TACKETT  
*University of California, Berkeley*

*Chinese History: A New Manual, Enlarged Sixth Edition (Fiftieth Anniversary Edition), 2 vols.*, BY Endymion Wilkinson. Cambridge, MA: Harvard University Asia Center, 2022. Vol. 1: pp. xxx + 1092. \$90.00 cloth, \$45.00 paper. Vol. 2: pp. xxx + 1060. \$90.00 cloth, \$45.00 paper. Both vols.: \$49.99 e-book on Pleco platform, <https://www.pleco.com/2017/11/21/chinese-history-a-new-manual/>.

Historians seem to have come full circle since the early 1970s. Quantitative history was then at the height of its popularity, bolstered by the conviction by some that statistics and numerical analysis could resolve any historical question. In the subsequent 1980s and 1990s, faith in the power of quantification fell by the wayside across the history discipline. But computation has since recovered its appeal. The rise in popularity of the digital humanities (DH) since the early 2000s is readily apparent in the frequency with which one encounters the word “digital” in scholarly publications, and in the many new periodicals in multiple languages dedicated to DH.<sup>1</sup> Recently, several journals have even devoted

<sup>1</sup> According to Constellate, the percentage of “documents” in history journals containing the term “digital” increased from 0.2 percent in the 1990s to 1.5 percent in the 2000s, 5.8 percent in the 2010s, and 9.6 percent in the 2020s. The percentage in literature journals over the same decades increased from 1.3 percent to 5.6 percent, 11.4 percent, and 19.3 percent; Constellate (New York: Ithaka Harbors, 2021–), <https://constellate.org/>. New DH journals include *Humanités numériques*, *Digital Medievalist*, *Digital Humanities Quarterly*, *Digital Philology: A Journal of Medieval Cultures*, *Journal of Historical Network Research*, *Revista de humanidades digitales*, *Umanistica digitale*, *Shuwei diancang yu shuwei renwen* 數位典藏

special issues to digital methods in the study of China or East Asia.<sup>2</sup> Most historians may not themselves employ digital techniques in their own analysis, but DH has a recognized role to play in the academy.

The publication of the new sixth edition of Endymion Wilkinson's research manual offers scholars of Chinese history and civilization an opportunity to reflect on how the tools of the trade have changed since the 1970s. Conceived as a "fiftieth anniversary edition," Wilkinson's much-used manual has evolved in substantial ways since its original publication in 1973, an evolution that has occurred in line with trends in the history discipline.<sup>3</sup> The tools it has introduced to three generations of burgeoning scholars have made possible a wide array of exciting and innovative research. The coverage of digital tools in the present edition (albeit modest in length relative to the colossal size of the manual) and the plan to implement a new digital platform together epitomize how new resources and tools have contributed—and might further contribute—to the field of Chinese studies.

At just 70,000 words, the original "preliminary" 1973 edition of Wilkinson's research manual (entitled *The History of Imperial China: A Research Guide*) was comparatively brief. According to its preface, it targeted students of socioeconomic history in particular, reflecting the focus of cutting-edge historians of the era. The first major expansion of the manual came twenty-five years later, in 1998, with the publication of the "first" edition (entitled *Chinese History: A Manual*). Over 4.5 times longer, this edition widened its scope to cover, according to its preface, the totality of "traditional Chinese civilization and history." In this way, it once again reflected overall trends in the discipline, which had by then moved away from an earlier concentration on socioeconomic questions. The 1998 edition also included much more extensive coverage of the pre-Qin period, in line with an efflorescence of scholarship

---

與數位人文/*Journal of Digital Archives and Humanities*, *Digitális bölcsészet*, *International Journal of Digital Humanities*, *Shuzi renwen* 數字人文/*Digital Humanities*, and *Shuzi renwen yanjiu* 數字人文研究。

<sup>2</sup> For example, "Digital Methods and Traditional Chinese Literary Studies," ed. Thomas J. Mazanec, Jeffrey R. Tharsen, and Jing Chen, special issue, *Journal of Chinese Literature and Culture* 5.2 (2018): 1–254; "Digital Humanities," ed. Peter K. Bol, special issue, *Journal of Chinese History* 4.2 (2020): 251–580; "Beyond Guanxi: Chinese Historical Networks," ed. Henrike Rudolph and Song Chen, special issue, *Journal of Historical Network Research* 5.1 (2021): 1–317; and "Digital Humanities and East Asian Studies," ed. Alíz Horváth and Hilde de Weerdt, special issue, *International Journal of Digital Humanities* 4.1–3 (2023): 1–223.

<sup>3</sup> For publication details of all editions of *Chinese History*, see v. 1, p. iv.

on early China. (A second edition would also incorporate the Republican period.)

The next major expansion came in 2012, with the third edition (entitled *Chinese History: A New Manual*). Now up to 1.5 million words in length, this edition was divided into seventy-six chapters, organized into fourteen “books.” It was this edition that first incorporated digital resources. It contained a brief subsection on “databases and web portals” (in chap. 45). More significantly, it included a dedicated “database index.” The release of the first digital version of the manual (available through the Pleco platform) accompanied the release of the subsequent fifth edition of the manual.

The present edition of Wilkinson’s research guide represents the largest revision since 2012, entailing a more modest increase in length of 13 percent, bringing the word count to 1.7 million. This edition maintains the seventy-six-chapter format, but with an additional discussion of the first thirty years of the People’s Republic of China. In line with the digital turn, a plan exists to pivot in the future toward a novel publication strategy involving a subscription service. An entirely new electronic edition has been prepared that (unlike the Pleco version) would be updated continuously by a team of content managers, thereby eliminating the traditional publication cycle. To facilitate research, the platform would link to external resources—for example, to one’s university library catalogue, or to online biographical data on authors of historical texts. It must be noted, however, that this new platform has so far not received copyright clearance for public release. (I was shown a demo of the platform in October 2022, and I was told only very recently that the platform has not received copyright clearance. It is unclear to me when, or if, it will ever be released.)

Wilkinson’s manual thus embodies the new digital turn in more than one way. The shift toward the digital publication of the text—beginning with the Pleco edition—reflects the transformation in recent years in how we read. (After all, what could be more convenient than consulting Wilkinson on one’s smartphone!) Then there are the digital resources—the searchable e-texts, bibliographic databases, online archival collections, prosopographical (biographical) databases, geographic datasets, and so on—that Wilkinson introduces, both in a section on “digital tools” (v. 2, pp. 1110–15) and also interspersed throughout the guide. There is one more way in which the manual contributes to

the digital turn. The tools of the trade have never existed for their own sake; they exist for scholars to exploit in their own research. The near-infinite potential of future research projects is ever on one's mind as one peruses Wilkinson. Some of the electronic tools—especially bibliographic databases and text repositories—are already widely used. But other resources are only now beginning to be exploited to their full potential, suggesting that the history discipline may be on the verge of an important transformation.

Computation in historical research is of course not new. Already by the 1930s and 1940s, some historians used datasets and statistics (calculated manually) in their work. Marxists in the first generation of the Annales School, for example, made extensive use of statistical analysis. In the field of premodern Chinese history—that is, my own field—Wolfram Eberhard published prosopographical work in the 1940s that relied upon numerical tables (probably tabulated with the aid of punch cards) to characterize Five Dynasties political elites.<sup>4</sup> In the 1950s, Sun Guodong 孫國棟, in an article that remains important today, marshalled substantial data to offer a new account of the demise of the Tang great clans.<sup>5</sup> And Ping-ti Ho, working on a somewhat later historical period, compiled statistics on population and social mobility in now-classic studies.<sup>6</sup>

The 1960s marked an important turning point. It was in this decade that it became commonplace for historians to exploit social scientific methods—and especially quantification—to explore entirely new sets of historical questions.<sup>7</sup> The “new” social history included notably the works of historical demographers, who compiled impressive datasets on early modern Europe, using family reconstitution strategies pioneered

<sup>4</sup> Wolfram Eberhard, “The Composition of the Leading Political Group during the ‘Five Dynasties,’” *Asiatische Studien* 1 (1947): 19–28. On Eberhard’s use of punch cards, see Alvin P. Cohen, “In Memoriam: Wolfram Eberhard, 1909–1989,” *Asian Folklore Studies* 49.1 (1990): 130; *Aspects of Altaic Civilization*, ed. Denis Sinor (Bloomington: Indiana University, 1963), pp. 10–12.

<sup>5</sup> Sun Guodong, “Tang Song zhi ji shehui mendi zhi xiaorong” 唐宋之際社會門第之消融, *Xinya xuebao* 新亞學報 4.1 (1959): 211–304.

<sup>6</sup> Ping-ti Ho, *Studies on the Population of China, 1368–1953* (Cambridge, MA: Harvard University Press, 1959); Ping-ti Ho, “Aspects of Social Mobility in China, 1368–1911,” *Comparative Studies in Society and History* 1.4 (1959): 330–59.

<sup>7</sup> On quantitative history in the 1960s and 1970s, see J. Morgan Kousser, “Quantitative Social-Scientific History,” in *The Past before Us: Contemporary Historical Writing in the United States*, ed. Michael Kammen (Ithaca, NY: Cornell University Press, 1980), pp. 433–56. I thank Timothy Tackett and David Johnson for offering additional insight on the earlier era of quantitative history.

by French scholars and later systematically developed by the Cambridge Group for the History of Population and Social Structure. Other social historians of Europe compiled datasets using rent and tax receipts, wage books, and tithe records, all with the goal of shedding light on the lives of ordinary commoners in a period before the systematic compilation of government statistics.<sup>8</sup> Quantitative political history included studies examining voting behavior in the United States using county voting records (an approach termed “historical psephology”) as well as the legislative behavior of British members of parliament. American historians in particular benefitted from the abundant data on county-level election returns, census counts, and congressional roll-call votes that the Inter-University Consortium for Political Research began to compile in 1962.<sup>9</sup> Other historians turned to “content analysis,” manually scoring texts according to several variables, then using the data as a stand-in for public opinion polls.<sup>10</sup> Meanwhile, “new” economic history—commonly referred to as “cliometrics” or “econometrics”—combined economic data with models devised by economists to shed new light on topics ranging from economic growth to capital formation and technological change.<sup>11</sup>

In the wake of the computer revolution, the turn toward “social science history” reached its apogee in the 1970s. As of the late sixties, it was still very rare for historians to employ computers in their research.<sup>12</sup> But history graduate students were by then beginning to receive training in statistics as well as in the use of computers, first at special summer workshops, then as part of their program curricula.<sup>13</sup> Moreover, by the early 1970s, historians had gained more reliable

<sup>8</sup> Osamu Saito, “Historical Demography: Achievements and Prospects,” *Population Studies* 50.3 (1996): 537–53.

<sup>9</sup> Charlotte Erickson, “Quantitative History,” *American Historical Review* 80.2 (1975): 351–65; Allan G. Bogue, “The Quest for Numeracy: Data and Methods in American Political History,” *Journal of Interdisciplinary History* 21.1 (1990): 89–116.

<sup>10</sup> Gilbert Shapiro, John Markoff, and Sasha R. Weitman, “Quantitative Studies of the French Revolution,” *History and Theory* 12.2 (1973): 163–91; John Markoff, Gilbert Shapiro, and Sasha R. Weitman, “Toward the Integration of Content Analysis and General Methodology,” *Sociological Methodology* 6 (1975): 1–58.

<sup>11</sup> R. W. Fogel, “The New Economic History: Its Findings and Methods,” *Economic History Review*, 2nd ser., 19.3 (1966): 642–56.

<sup>12</sup> As of the mid-1960s, it remained “still extremely difficult for a historian to obtain sufficient funds to pay the fearsome costs of using a computer”; Theodore K. Rabb, *Enterprise & Empire: Merchant and Gentry Investment in the Expansion of England, 1575–1630* (Cambridge, MA: Harvard University Press, 1967), p. viii.

<sup>13</sup> Kousser, “Quantitative Social-Scientific History,” pp. 448–50.

access to university mainframe computers, made possible by cheaper technologies and the development of effective time-sharing systems. The Statistical Package for the Social Sciences (SPSS)—available on mainframe computers in the 1970s—facilitated calculations for those who could not themselves write programs. Quantitative methods gained further support with the founding of new societies and periodicals, including the Social Science History Association and the journal *Social Science History*, both established in the mid-1970s. Illustrative of the boom in quantification was the five-fold increase in the appearance of quantitative tables in history articles published in the late 1970s (in contrast to those published in the early 1960s).<sup>14</sup>

One of the pathbreakers of social science history in the field of pre-modern China was Mao Hanguang 毛漢光, who produced two massive works of quantitative prosopography in the 1960s.<sup>15</sup> More influential on Chinese historians in the West, however, were G. William Skinner (in his historical writings) and Robert Hartwell. Both Skinner and Hartwell were explicit advocates of treating history as a social science, as well as of the value of quantification.<sup>16</sup> Skinner was on the first editorial board of *Social Science History*; Hartwell was also involved in the Social Science History Association from its inception, serving as cochair of the organization committee for its first annual meeting in 1976.<sup>17</sup> It was in this era that Skinner developed his well-known models of spatial analysis. Meanwhile, Hartwell built up an impressive geographic dataset, showcased in a pathbreaking 1984 *HJAS* article.<sup>18</sup> He went on to compile a large prosopographical database. The two datasets were later incorporated in part into the China Historical Geographic Information System (CHGIS) and the China Biographical Database (CBDB), respectively.<sup>19</sup>

<sup>14</sup> Kousser, “Quantitative Social-Scientific History,” p. 438.

<sup>15</sup> Mao Hanguang, “Liang Jin Nanbeichao shizu zhengzhi zhi yanjiu” 兩晉南北朝士族政治之研究 (master’s thesis, National Chengchi University, 1966); Mao Hanguang, “Tangdai tongzhi jiecheng shehui biandong: Cong guanli jiating beijing kan shehui liudong” 唐代統治階層社會變動：從官吏家庭背景看社會流動 (PhD diss., National Chengchi University, 1968).

<sup>16</sup> See essays by Skinner and Hartwell in *Chinese Social and Economic History from the Song to 1900*, ed. Albert Feuerwerker (Ann Arbor: Center for Chinese Studies, University of Michigan, 1982).

<sup>17</sup> Lynn Hollen Lees, “A Social History of the Social Science History Association during Its Early Years,” *Social Science History* 40.4 (2016): 576, 578, 579.

<sup>18</sup> Robert M. Hartwell, “Demographic, Political, and Social Transformations of China, 750–1550,” *HJAS* 42.2 (1982): 365–442, <https://doi.org/10.2307/2718941>.

<sup>19</sup> China Historical Geographic Information System (CHGIS), version 6 (Cambridge,



One should not underestimate the impact on the history discipline of the turn toward the social sciences and quantification in the 1960s and 1970s. The new studies published in this era offered at the most basic level a stronger empirical foundation in support of (or opposing) impressionistic claims made by earlier historians. But the quantitative turn also led historians to explore entirely new questions inspired by the social sciences, questions regarding the makeup of pre-modern society, for example, or the structure and evolution of the pre-modern economy. The “new” history gave historians approaches for discerning patterns and developmental trajectories nearly concealed from view in older historical narratives, narratives often (in the case of Chinese studies) with origins in dynastic histories or traditional chronicles written centuries ago. Moreover, because the social sciences are premised on the idea that commonalities between societies worldwide are fundamentally more significant than the cultural particularities distinguishing these societies, it was also in this era that Chinese historians in the West left the confines of area studies to become full-fledged participants in the history discipline.

However, the discipline of history gradually turned away from the social sciences in the 1980s. This turn was in part due to new intellectual interests, notably in the “new cultural history.”<sup>20</sup> But it was also the consequence of a backlash against quantification that offers an important cautionary tale to practitioners of DH today.<sup>21</sup> Many historians became

---

MA: Fairbank Center for Chinese Studies, Harvard University; Shanghai: Institute for Historical Geographical Studies, Fudan University, 2016), <https://sites.fas.harvard.edu/~chgis/data/chgis/v6/>; China Biographical Database (CBDB) (Cambridge, MA: Fairbank Center for Chinese Studies at Harvard University; Taipei: Institute of History and Philology of Academia Sinica 中央研究院歷史語言研究所; Beijing: Center for Research on Ancient Chinese History at Peking University 北京大學中國古代史研究中心, 2018–), <https://projects.iq.harvard.edu/cbdb>; Peter K. Bol, “The China Historical Geographic Information System (CHGIS): Choices Faced, Lessons Learned” (working paper, Conference on Historical Maps and GIS, Nagoya University, August 23–24, 2007), pp. 2–3, [https://chgis.fairbank.fas.harvard.edu/work/docs/papers/BOL\\_CHGIS\\_Lessons\\_Learned.pdf](https://chgis.fairbank.fas.harvard.edu/work/docs/papers/BOL_CHGIS_Lessons_Learned.pdf); Robert M. Hartwell, “A Computer-Based Comprehensive Analysis of Medieval Chinese Social and Economic History,” in *Characters and Computers*, ed. Victor H. Mair and Yongquan Liu (Amsterdam: IOS Press, 1991), pp. 89–121.

<sup>20</sup> *The New Cultural History*, ed. Lynn Hunt (Berkeley: University of California Press, 1989).

<sup>21</sup> The backlash is famously exemplified by the systematic refutation of Robert Fogel and Stanley Engerman’s *Time on the Cross*. See, for example, Herbert G. Gutman, *Slavery and the Numbers Game: A Critique of Time on the Cross* (Champaign: University of Illinois Press, 1975).



increasingly skeptical of the hubristic claims of the quantifiers—notably, that they could use statistics to solve virtually any historical problem. There was also concern about the massive amounts of time and labor expended on data entry—which sometimes subjected graduate students to a form of “intellectual peonage.”<sup>22</sup> Moreover, it was not always clear what to do with the resulting datasets. Some were simply used to draw relatively obvious conclusions that did not warrant such extraordinary expenditures of effort. Other quantifiers employed overly sophisticated techniques, techniques not in fact suitable to the fragmentary data that pre-twentieth-century historians must deal with. Complicated statistics only made the scholarship opaque to the majority of historians, as a result of which skepticism grew regarding the perceived fetishization of regression analysis and other more sophisticated statistical techniques. There were also concerns of data falsification—especially since tables and graphs based on a large dataset are much more difficult to evaluate critically (in contrast to the close reading of textual passages). Finally, postmodern skepticism of “positivism” raised suspicions that the data concealed source biases, not to mention political agendas of the historian.

The use of computers did not of course go away in the 1980s and 1990s. It was precisely in this era that historians and humanists shifted from using typewriters to using word processors. Some historians also began to experiment with relational databases, using software by then available on personal computers. By the mid-1990s, graphical user interfaces (GUIs) made computers more accessible to the less technically inclined. Simultaneously, the internet created possibilities for entirely new ways of presenting and circulating information. Both the online Bibliography of Asian Studies and JSTOR, for example, were available by the late 1990s.<sup>23</sup> By the end of the century, most historians had gained a familiarity with a range of computer software and web interfaces; the times were ripe for a revival of computation in historical analysis.

The digital humanities embodies this revival. Much like the “quantifiers” of the 1970s, DH practitioners also radiate excitement about the

<sup>22</sup> Lawrence Stone, “Prosopography,” *Daedalus* 100.1 (1971): 72.

<sup>23</sup> Bibliography of Asian Studies (Ann Arbor, MI: Association for Asian Studies, 1998–), <https://www.asianstudies.org/publications/bibliography-of-asian-studies/>; JSTOR (New York: Ithaca Harbors, 2000–), <https://www.jstor.org/>.

possibilities that computers and computation have to offer. But there are also critical differences. DH, as the name implies, involves a greater number of disciplines in the humanities. It thus inevitably pays more attention to the intellectual concerns of humanists and somewhat less to those of social scientists. The postmodern intervention is also difficult to ignore now that historians are far more aware of the biases and conceptual assumptions that can infiltrate even “raw” data. Online data repositories allow for the easy circulation of datasets, offering one solution to the problem of transparency in one’s quantitative analysis. Finally, in the current digital world, there are multitudes of freely accessible datasets, not to mention a wide array of digital tools—precisely the resources listed in Wilkinson’s “Digital Resources Index” (pp. 2101–4). Some projects still entail new data entry. But there is now a wealth of possibilities for interesting work based on (or building upon) preexisting datasets—including CBDB, CHGIS, and the electronic texts offered by Scripta Sinica and the Chinese Text Project (Ctext).<sup>24</sup> Similarly, though programming languages like Python and SQL will always offer greater flexibility in what one can do, new tools integrated into online platforms like CBDB and Ctext make sophisticated analysis more accessible than it had been in the era of punch cards and mainframe computers.<sup>25</sup>

Early this century, the excited chatter of the DH crowd at conferences often focused more on tools and on what one could in theory accomplish with them. Much less attention was given to describing the actual fruits of research projects. But in more recent years, there have been a number of publications reporting on concrete results, giving us a better sense of the actual potential of the new digital tools. Below, I present a few exemplary studies that showcase specific methodologies. I mostly limit myself here to studies from my own field of middle period Chinese history.

*Quantitative prosopography* is of course an older methodology dating to the earlier era of quantitative history. But historians now have

<sup>24</sup> Scripta Sinica 漢籍全文資料庫, comp. Scripta Sinica Research Group 漢籍全文資料庫工作室 (Taipei: Institute of History and Philology, Academia Sinica, 1995–), <https://hanchi.ihp.sinica.edu.tw/ihp/hanji.htm>; Chinese Text Project (Ctext), ed. Donald J. Sturgeon (2006–), <https://ctext.org>.

<sup>25</sup> For useful discussions of these tools, besides Wilkinson (v. 2, pp. 1110–15), see Peter Bol, “Introduction to the Utilities,” *Journal of Chinese History* 4.2 (2020): 483–86, as well as the articles that Bol introduces.

access to exciting new datasets, including notably data culled from the tens of thousands of extant Tang-era tomb epitaphs, much of which has now been incorporated into CBDB. Yao Ping's 姚平 studies of women in the Tang dynasty include an early effort to make use of this data to calculate the basic demographic profile of Tang elites, such as average age of marriage and death, and average number of children per generation.<sup>26</sup> Claire Yang has used a similar dataset to identify a pattern of auspicious and inauspicious burial days—a pattern apparently conserved over centuries—thereby shedding light on death ritual practice in medieval China.<sup>27</sup> Looking at death dates rather than burial dates, one can discern a greater frequency of deaths in summer (in Luoyang), perhaps reflecting the impact of infectious diseases.<sup>28</sup> One can also analyze what is missing from extant data. For example, the corpus of extant Tang epitaphs evidently underrepresents women dying in childbirth in the early Tang, in contrast to the late Tang, perhaps telling us something about the change in the status of women over the course of the Tang dynasty.<sup>29</sup>

Novel *Geographic Information System* (GIS) technologies open up new possibilities in cartography. In particular, they allow one now to produce maps much more rapidly, such that one can both rapidly test out different hypotheses, and also experiment with different ways of visualizing one's data. It is also possible now to scan and georeference older published maps to incorporate their data into one's own cartographic project. In her recent study of the Yellow River, Ruth Mostern offers one possible use for GIS—to demonstrate a correlation between increased settlement in the loess plateau and downriver flooding events.<sup>30</sup> Other studies use GIS to characterize the evolution across the Tang–Song transition of the geographic distribution of high political elites. The broader distribution of political elites across the most populous prefectures by the Southern Song (in contrast to a

<sup>26</sup> Yao Ping, *Tangdai funü de shengming licheng* 唐代妇女的生命历程 (Shanghai: Shanghai guji chubanshe, 2004); Yao Ping, "Childbirth and Maternal Mortality in Tang China (618–907)," *Chinese Historical Review* 12.2 (2005): 263–86.

<sup>27</sup> Yi (Claire) Yang, "Death Ritual in the Tang Dynasty (618–907): A Study of Cultural Standardization and Variation in Medieval China" (PhD diss., University of California, Berkeley, 2019), pp. 58–96.

<sup>28</sup> My unpublished data.

<sup>29</sup> See figs. 9, 11, and 12 in Yao Ping, "Childbirth and Maternal Mortality," pp. 281–282, noting the absence of a hump in the age range 16 to 40 in the earlier period.

<sup>30</sup> Ruth Mostern, *The Yellow River: A Natural and Unnatural History* (New Haven, CT: Yale University Press, 2021).

capital-centric distribution in the Tang) is suggestive of a fundamental restructuring of the geography of power.<sup>31</sup>

*Network analysis* constitutes another new methodology. Mao Hanguang is exceptional in reconstructing a core element of the Tang elite marriage network already in the late 1980s.<sup>32</sup> With the vast increases in computational power in more recent decades, entirely new sorts of studies are now possible. Peter Bol uses CBDB data alongside network analysis software to complicate the “localism” thesis, by showing how scholarly and marriage networks in one prefecture were transformed between the Southern Song and the Yuan—organized along intra-prefectural ties in the earlier period, and along intracounty ties in the later period.<sup>33</sup> In my own work, I use a similar methodology to discern a division in the ninth century between a marriage network of pre-eminent old aristocratic clans and one organized around the imperial clan—thereby shedding light on how the medieval aristocracy maintained its preeminence for centuries.<sup>34</sup> In addition, literary scholars reconstruct networks of poetic exchange and other literary ties to gain a better sense of the cultural world and social imaginaries of the texts they study.<sup>35</sup> There are also experiments in using network analysis to analyze routes of advancement within the bureaucracy and to explore how career promotion patterns were impacted by court politics.<sup>36</sup>

Yet another new set of methodologies involves strategies of *distance reading*. These strategies entail using a computer to “read” a large

<sup>31</sup> Song Chen, “Governing a Multicentered Empire: Prefects and Their Networks in the 1040s and 1210s,” in *State Power in China, 900–1325*, ed. Patricia Buckley Ebrey and Paul Jakov Smith (Seattle: University of Washington Press, 2016), esp. pp. 101–30; Nicolas Tackett, “Imperial Elites, Bureaucracy, and the Transformation of the Geography of Power in Tang-Song China,” in *Die Interaktion von Herrschern und Eliten in Imperialen Ordnungen des Mittelalters*, ed. Wolfram Drews (Berlin: De Gruyter, 2018), esp. pp. 184–89.

<sup>32</sup> Mao Hanguang, “Wan Tang wu xing zhufang zhi hunyin guanxi” 晚唐五姓著房之婚姻關係, *Taida lishi xuebao* 臺大歷史學報 15 (1990): 135–57.

<sup>33</sup> Peter K. Bol, “From Kinship to Collegiality: Changing Literati Networks, 1100–1400,” *Journal of Historical Network Research* 5.1 (2021): 87–113.

<sup>34</sup> Nicolas Tackett, *The Destruction of the Medieval Chinese Aristocracy* (Cambridge, MA: Harvard University Asia Center, 2014), pp. 122–29.

<sup>35</sup> Thomas J. Mazanec, “Networks of Exchange Poetry in Late Medieval China: Notes toward a Dynamic History of Tang Literature,” *Journal of Chinese Literature and Culture* 5.2 (2018): 322–59; Jack W. Chen, *Anecdote, Network, Gossip, Performance: Essays on the “Shishuo xinyu”* (Cambridge, MA: Harvard University Asia Center, 2021), pp. 59–89.

<sup>36</sup> Huei-Lan Xiong, “Path toward the Top Leadership: A Network Analysis of the Civil Service System in the Early Southern Song (1131–1164),” *Journal of Historical Network Research* 5.1 (2021): 33–86.

corpus of texts that is far too expansive for close reading. One form of distant reading might simply entail counting a set of keywords across a corpus. A more sophisticated strategy constructs networks on the basis of the co-occurrence of terms or names within individual “documents.” Each vertex (node) represents a term or name; lines (edges) between nodes indicate that the two terms or names in question appear together in a document. Hilde De Weerdts and her research group have used this technique to compare two Song-dynasty political faction lists, showing by this means how the “localist” turn impacted political networks.<sup>37</sup> Topic modeling constitutes an even more sophisticated strategy, in which the computer identifies a predetermined number of “topics” based on terms that frequently co-occur. By applying this methodology to Song-era inscriptions for educational institutions, Song Chen has shown how a discourse emphasizing the state’s role in education—a discourse common in the New Policies era—gave way later in the dynasty to a new language defined by Neo-Confucian vocabulary.<sup>38</sup>

Though I have stressed the centrality of the humanities in the recent digital turn, the quantitative social sciences also have methodologies to offer. *Modeling*—in which a computer tests a hypothesis by deducing the expected consequence of a particular set of conditions—constitutes one example. One group of scholars has employed modeling to offer evidence in support of Jared Diamond’s “fractured-land” hypothesis, which offers a geographic explanation for the recurrent reunification of China (in contrast to Europe’s political fragmentation).<sup>39</sup> The modeling shows that if one assumes that topography and the control of agriculturally productive land determine how states expand over time, then one discovers that a regime occupying the North China plain possesses the agricultural resources to conquer the rest of China proper. Although this sort of modeling is entirely ahistorical, depicting change over time in purely hypothetical terms, it does give us a plausible way to make sense of both the Sui and the Song reunifications.

Since the 1970s, Endymion Wilkinson’s manual has offered its readers possibilities of discovering new sources and research tools that

<sup>37</sup> Hilde De Weerdts, Brent Ho, Allon Wagner, Qiao Jiyan, and Chu Mingkin, “Is There a Faction in This List?,” *Journal of Chinese History* 4.2 (2020): 347–89.

<sup>38</sup> Song Chen, “Writing for Local Government Schools: Authors and Themes in Song-dynasty School Inscriptions,” *Journal of Chinese History* 4.2 (2020): 305–46.

<sup>39</sup> Jesús Fernández-Villaverde, Mark Koyama, Youhong Lin, and Tuan-Hwee Sng, “The Fractured-Land Hypothesis,” *Quarterly Journal of Economics* 138.2 (2023): 1173–231.

might open up entirely novel avenues of research. Among the tools described in the most recent edition of the manual are many new digital methodologies and datasets developed in the past two decades. In many ways, the new digital tools resurrect the project that social science historians of the 1960s and 1970s began long ago. But have we really just come full circle in our renewed embrace of computer-based analysis? I would argue the new tools have spurred a more fundamental epistemic shift, helping one to break free of older mentalities. Whereas traditional statistical analysis begins with categories defined by the researcher (which are then compared to each other on the basis of tabulated data), GIS, network analysis, and topic modeling by contrast can define categories of analysis on an empirical basis. GIS can ascertain geographic distributions that do not in any way accord with traditionally conceived geographic units. Network analysis can identify *empirically* who interacted with whom. No longer does one need to assume that class or gender or ethnicity or occupation were the key drivers of group identity and social organization. And topic modeling can identify the primary themes within a corpus of texts by means of an algorithm rather than by depending on the scholar's own preconceptions. In brief, whereas postmodernists could justifiably critique the quantitative analysis of an earlier generation for its dependence on preconceived categories, the digital turn offers a plausible means of escaping these categories entirely, allowing us to embark on fundamentally new modes of historical inquiry.