



A Tripartite Approach to Dunhuang Quzi Lyrics studies: Traditional Philology, Digital Measurement, and Cross-Cultural Perspective

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Abstract. Dunhuang Quzi Ci, a cultural treasure of the Silk Road, holds significant literary and interdisciplinary value. This study develops a tripartite framework—combining philology, digital analysis, and cross-cultural comparison in order to trace its century-long academic evolution. Philological periodization identifies four developmental stages, while CiteSpace mapping reveals strengthened thematic networks and interdisciplinary trends since 2000. Cross-regional comparison further illuminates divergent research approaches, ultimately reconstructing Silk Road cultural networks and proposing new global perspectives for interpreting Dunhuang heritage.

Keywords: Dunhuang Quzi Ci, Cross-Culture, Digital Measurement

1 Introduction

Dunhuang Quzi Ci, a unique literary heritage from the Silk Road, encapsulates rich cultural and artistic exchanges of medieval China. Over the past century, its research has evolved from foundational philology to interdisciplinary inquiry, yet faces fragmentation, disciplinary silos, and a lack of integrated global perspective.

To address these challenges, this study proposes a tripartite framework combining traditional philology, digital measurement, and cross-cultural comparison. Philology ensures textual and historical precision; digital tools like CiteSpace map thematic networks and trends; cross-cultural analysis situates studies within global academic dialogues. Together, they reconstruct the scholarly history, visualize interdisciplinary shifts, and expand the interpretive scope of Dunhuang Quzi Ci.

This integrated approach not only offers a holistic view of the field's evolution but also provides a methodological model applicable to broader humanities research, ultimately pointing toward a more connected understanding of Silk Road cultural heritage.

2 The Scholarship of Dunhuang Quzi: from Traditional Philology

The academic historiography approach rooted in traditional philology primarily involves systematic organization and analysis of existing textual resources. This methodology establishes chronological frameworks through document collection and collation, while conducting thematic examinations and research. It emphasizes precise textual interpretation and reconstructing historical contexts, prioritizing empirical evidence and meticulous details. Focusing on textual criticism and empirical verification, this approach places significant emphasis on research subjects and pivotal findings. As such, we consider it the foundational perspective for all scholarly investigations, ensuring precision and historical depth at the micro-level.

Through cross-referencing and multi-database integration, we compiled over 1,000 relevant studies. After filtering for research relevance and authorship, we identified more than 700 academic resources focusing on Dunhuang Quzi Ci. Our research team adopted a comprehensive approach, sourcing materials through diverse channels spanning Eastern and Western contexts, covering multiple disciplines, and transcending temporal and spatial boundaries to achieve thorough documentation.

The research team's literature collection drew from diverse sources including libraries, archives, social and educational institutions, academic conferences, personal interactions, and computer networks. Guided by scientific methodologies, we systematically organized the findings into a structured matrix that comprehensively documents authorship, source materials, geographical scope, and chronological context.

Current research primarily manifests in four major directions. Textual collation remains the cornerstone of research, with scholars from early pioneers to later researchers like Pan Chonggui dedicating efforts to textual editing. [1] Japanese scholars have also made significant contributions to annotating and editing Yunyao Ji. Etymological studies of poetry remain particularly prominent, where researchers delve into metrics comparison, origin verification of ci forms, and rhyme pattern analysis. Thematic studies have become mainstream, with works exploring themes such as "warrior wives" and "romantic love" through interdisciplinary perspectives.[2]

3 Reconstructing the academic history of Dunhuang Quzi from the perspective of data measurement

With technological advancements, bibliometric tools like CiteSpace have been introduced to identify research hotspots, trends, and academic networks from vast literature through methods such as keyword clustering. This approach provides a macroscopic perspective that uncovers patterns or connections often overlooked by traditional bibliographic studies. Academic history analysis from this vantage point enables us to visualize disciplinary networks at the macro level, clearly demonstrating research focal points, interdisciplinary intersections, and underexplored research areas.

3.1 Structured framework and clustering analysis-based on citespace keyword clustering analysis

Through CiteSpace software, we conducted bibliometric analysis to generate visual maps reflecting research hotspots and development trends in the field. Guided by this theoretical framework, our team systematically collected keywords from 703 domestic research papers on Dunhuang Quzi Ci. Using CiteSpace's algorithmic clustering, we identified closely related terms to pinpoint subfields and emerging research themes within Quzi Ci studies. The findings are shown in Figure 1 and Figure 2:

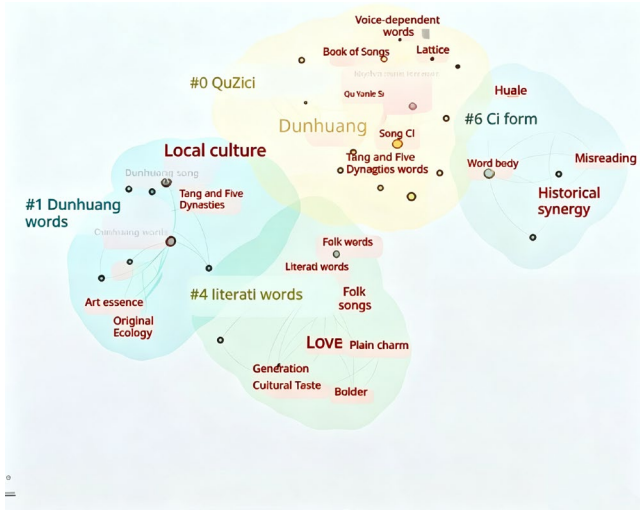


Fig. 1. The keyword clustering analysis from 1994 to 2004

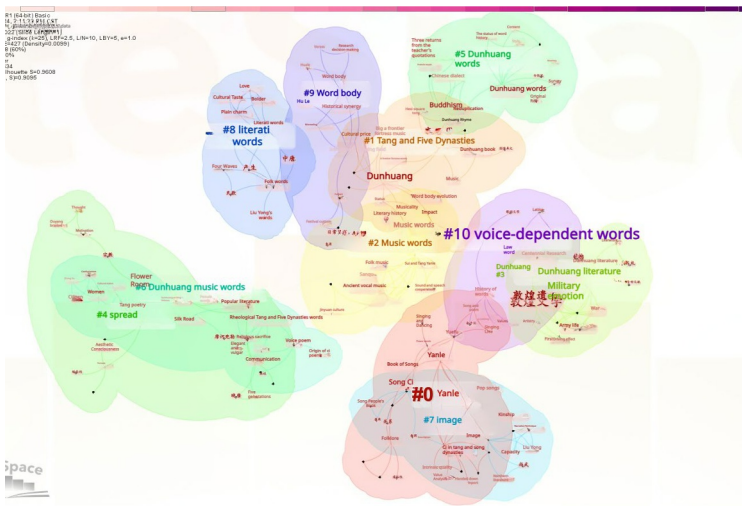


Fig. 2. The keyword clustering analysis from 1994 to 2004

Table 1. the important data in the keyword clustering diagram of the research

	1994—2004	2004—2024
Network density (Density)	0.027	0.961
Weighted average contour value (S value)	0.928	0.935
Modularity (Q value)	0.083	0.863

Note: All data are rounded to three decimal places

Silhouette: The average contour value of the cluster (S value).

It is generally considered that $S > 0.5$ means that the cluster class is reasonable, and $S > 0.7$ means that the cluster is convincing.

Modularity: The value of the clustering module (Q value). It is generally believed that $Q > 0.3$ means that the clustering structure is significant.

In the cluster analysis conducted from 1994 to 2004, we observed relatively low network density (Density=0.0271), indicating a dispersed distribution of research topics and weak disciplinary interdisciplinarity during this period. The lower modularity (Modularity=0.0833) further confirms the weak thematic correlations and strong independence among subjects. The weighted average contour value ($S=0.928$) near 1 not only demonstrates the credibility of the clustering process with high-quality aggregation but also reveals high internal consistency within clusters, featuring clearly defined thematic distinctions.

In the table 1, we calculated a weighted average contour value of $S = 0.935$, approaching 1, indicating exceptionally high cluster homogeneity, strong similarity within clusters, and excellent cluster quality. Notably different from the data from 1994-2004 are the values for network density (Density) and modularity (Q-value), which showed significant increases approaching 1. This demonstrates that since the 21st century, research topics in Quzi Ci studies have become increasingly interconnected, with strongly correlated thematic distributions.

Based on keyword clustering analysis of Dunhuang Quzi Ci studies (1994–2004), four major research themes emerged: Dunhuang Ci, Quzi Ci, literati words, and poetic genre studies. This early phase focused primarily on qualitative analysis, emphasizing the folk origins of Quzi Ci, its cultural context in the Tang and Five Dynasties, textual collation, religious functions, and scholarly debates on the origins and definitions of the genre.

Since 2004, research has expanded significantly in three key directions. First, studies increasingly emphasize regional literary approaches centered on "Dunhuang culture," linking Quzi Ci to other Dunhuang literary forms. Second, the scope has broadened to include cultural dissemination, vernacular features, gender perspectives, Silk Road connections, and aesthetic dimensions.[3] Third, musicology has opened new pathways, as seen in studies linking "Yan Music" to the evolution of poetic forms and the fusion of musical and literary expression in the Tang–Song transition.

3.2 Dynamic evolution path analysis —— Based on citespace keyword timeline analysis

Keyword clustering analysis provides a structured framework for Dunhuang Quzi poetry, while keyword timeline analysis reveals the dynamic evolution of these structures.

Building upon this foundation, we conducted time-line analysis to map cluster results onto a timeline, demonstrating the emergence timing and duration of keywords within each cluster.

We obtained the following analysis results in Figure 3 and Figure 4:

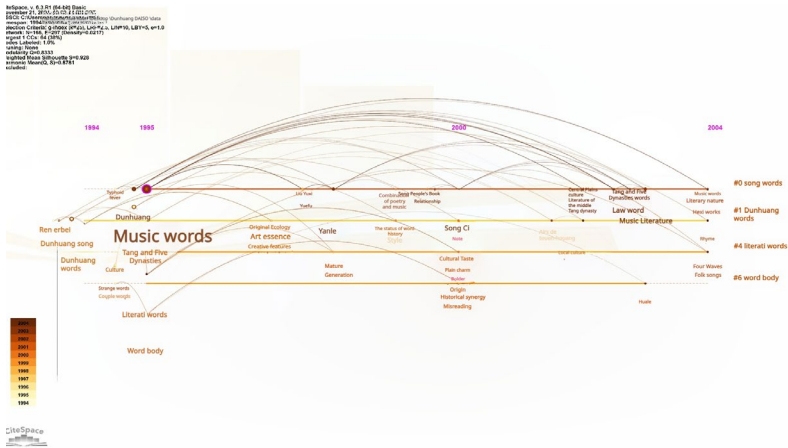


Fig. 3. The keyword timeline analysis of 1994-2004

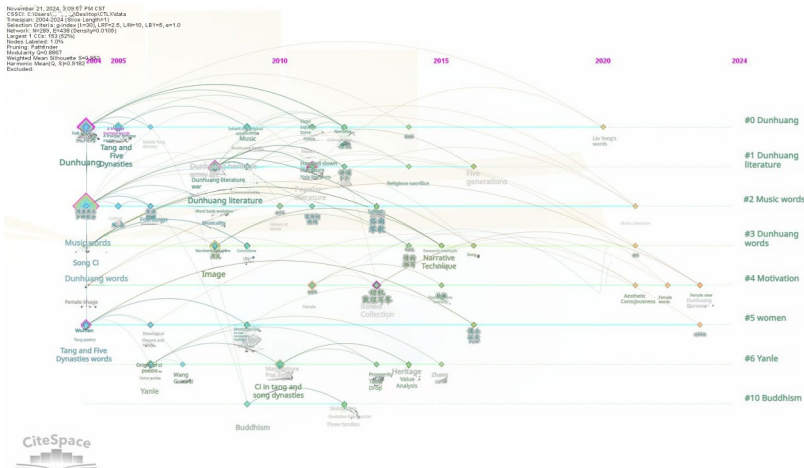


Fig. 4. The keyword timeline analysis of 2004-2024

Early studies of Dunhuang Quzi Ci primarily traced the evolution of the poetic form itself, focusing on core themes such as "Dunhuang folk Quzi Ci," "Dunhuang song lyrics," "literary Ci," and "Ci poetry form." These works emphasized the development from the Tang and Five Dynasties to the Song Dynasty, exploring the music-literature connection through keywords like "Yuefu," "Song Ci," and "Tang Wudai Ci," which reflected scholarly interest in literary attributes, metrical norms, and musical characteristics.[4]

As research progressed, themes diversified to include "Dunhuang literature," "women," "Buddhism," "popular literature," and "cultural values," expanding into social, religious, and gender dimensions beyond purely literary analysis.

By the early 21st century, three main research domains had formed—Dunhuang Ci, literati Ci, and Ci poetic form—yet these areas remained largely isolated due to disciplinary boundaries. Initially advancing separately in fields like literature and musicology, studies later diversified into cultural communication and religious studies. This evolution reflects a broader shift from single-discipline approaches toward integrated, interdisciplinary research on Dunhuang Quzi Ci.

4 Synchronic analysis of Dunhuang Quzi poetry from cross-cultural perspective

Current scholarship on Dunhuang Quzi Ci remains largely confined to single-cultural contexts, lacking global synchronic comparison. This study adopts a cross-cultural framework, integrating research from China, Japan, South Korea, Europe, and North America to examine differences in scholarly paradigms and explore pathways for cultural exchange and academic innovation.

Our team systematically collected 59 overseas studies from East Asia and the West. Although high-value foreign-language literature remains limited—primarily by Japanese and Korean scholars rooted in Eastern academic traditions—these works incorporate Western methods to enrich their analysis. Examples include Japanese scholar Okamura Shigeru's study on the emergence of [4] (Okamura Shigeru, 2003), and Australian scholars' research on Yunyao ji [5] (Lily Xiao & Hong Lee, 2017).

This cross-cultural approach transcends a simplistic East-West dichotomy, revealing the inclusive nature of Dunhuang culture. By situating Quzi Ci within a global academic network, we trace both the internal logic of its scholarly history and the methodological diversity across cultural contexts. [2] Ultimately, this paradigm shifts academic historiography from a singular "national history" toward a dynamic "global history," fostering multidimensional and interdisciplinary future research.

5 Conclusion

Traditional philology, digital measurement, and cross-cultural perspectives are not isolated from each other; rather, they form a triad of "empirical-structural-contextual" dimensions. The traditional philological perspective ensures the precision and historical depth of research, the digital quantification perspective provides navigation through macro-structures and trends, and the cross-cultural perspective expands temporal-spatial boundaries and theoretical dimensions, with the three interacting dynamically.

Traditional philology, centered on textual collation and manuscript dating, provides an irreplaceable empirical foundation for research. Through tools such as CiteSpace and GIS, digital quantification reveals dynamic networks of academic hotspots and

alerts us to emerging directions. Its strength lies in transcending the limitations of subjective experience, though care must be taken to avoid the obscuring of deeper meanings by "data determinism." The cross-cultural perspective, through comparative studies along the Silk Road, challenges single-culture narratives and reveals the nature of lyric metrics as a "hybrid product of civilizations." Its risk lies in overgeneralization, necessitating mutual verification with traditional methods. Through the synergy of these three approaches, the study of the academic history of Dunhuang Quzici transcends singular paradigms, restoring textual details while unveiling the complex network of cultural interactions, ultimately pointing to the grand vision of civilizational integration along the Silk Road. This integrated model is not only applicable to Dunhuang studies but can also provide a methodological paradigm for academic history research in the humanities.

The organization of academic history through the traditional philological perspective involves meticulous textual collation and analysis, tracing the evolution of scholarly discourse over time, clarifying core issues and their points of contention, and delving into implicit factors such as research motivations. This approach ensures both precision and credibility, making it highly significant for constructing a coherent framework for understanding Dunhuang Quzici. The chronological segmentation and thematic studies conducted from this perspective serve as the foundation for any subsequent analyses from other viewpoints. Hence, its central role must be emphasized—as the substantive core, while the other two perspectives function as complementary tools, enriching and expanding upon it.

However, it is also important to acknowledge the inherent limitations of the philological approach, which are precisely where other perspectives can provide necessary supplementation.

The first limitation is thematic rigidity. When reviewing academic history, the focus often remains on conventional topics such as "the origins of the lyric form" and "the transition from folk tradition to literati refinement," while marginal themes are overlooked. This issue also stems from a lack of a holistic perspective. By applying digital analysis techniques, such as keyword co-occurrence and clustering, a comprehensive overview of academic research can be constructed, allowing even peripheral topics to be brought to light.

The second limitation is disciplinary fragmentation. Research in fields such as literature, musicology, and history often progresses independently, with limited cross-disciplinary dialogue. Since traditional analytical methods rely heavily on the individual researcher's expertise and focus, integrating these disparate strands proves challenging. Cluster analysis can help reveal interconnections between different disciplines and identify potential areas for interdisciplinary collaboration, such as the intersection of digital humanities and natural humanities discussed earlier.

The third limitation is a narrow scholarly scope. Often constrained by factors such as the researcher's nationality and access to materials, studies tend to focus predominantly on domestic research. Even when overseas scholarship is considered, it is often treated in isolation. To address this, a synchronic analysis from a global perspective can be introduced, enabling comparative studies of research outputs across multiple countries and thereby expanding the depth and breadth of the inquiry.

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