
AI translation · View original & related papers at
chinaxiv.org/items/chinaxiv-202604.00082

Research on the Cultural Functions of Library Seals and Their Role in the Construction of Cultural Memory (Postprint)

Authors: Wu Xiuyun

Date: 2026-04-01T17:39:51+00:00

Abstract

[Purpose/Significance] The digital era has propelled the formation of a symbiotic landscape of bookplates in three forms: traditional, electronic, and native digital. Under this new pattern, it is urgent to explore the cultural functions of library bookplates and their role in the construction of cultural memory. [Method/Process] This paper employs a combination of theoretical interpretation and case analysis, using the morphological evolution of bookplates as an entry point. Based on an analysis of the cultural functions of bookplates, a “three forms and three dimensions” analytical framework is constructed to investigate the primary supporting role of bookplates in the construction of cultural memory, as well as their practical development within the library industry. [Result/Conclusion] Traditional bookplates lay the material and cultural foundation at the institutional dimension; electronic bookplates facilitate cultural dissemination at the relational dimension; and native digital bookplates provide vitality for cultural innovation at the aesthetic dimension. These three forms complement and interact with each other, jointly forming a closed loop for the construction of cultural memory regarding bookplates. Based on the current practice of the Chinese library industry in constructing cultural memory through bookplates, suggestions are proposed from four aspects—balanced advancement, deep value extraction, innovative dissemination, and collaborative integration—to facilitate the innovative development of excellent traditional Chinese culture.

Full Text

Preamble

Research on the Cultural Functions of Library Collection Seals and Their Role in the Construction of Cultural Memory

Introduction

Library collection seals serve as a unique medium of cultural transmission, carrying profound historical information and artistic value. As a physical manifestation of book ownership and institutional identity, these seals are not merely functional markers for management; they represent a convergence of bibliography, history, and the art of seal carving. In the context of modern library science and cultural heritage preservation, exploring the multifaceted roles of collection seals—particularly their function in constructing cultural memory—is of significant academic and practical importance.

The Cultural Functions of Collection Seals

The cultural functions of library collection seals are diverse, extending far beyond their primary administrative role of indicating ownership. First, they possess an inherent **documentary and evidentiary function**. By examining the style, text, and placement of a seal, researchers can trace the provenance of a volume, reconstructing its journey through various private collections and public institutions. This provides critical data for the study of the history of the book and the circulation of knowledge.

Second, collection seals serve an **aesthetic and artistic function**. Many seals are masterpieces of calligraphic art and seal carving, reflecting the aesthetic preferences of different eras. The choice of script—whether seal script, clerical script, or regular script—and the composition of the layout contribute to the overall visual harmony of the traditional Chinese book format.

Third, they fulfill a **symbolic and identity-marking function**. For a library, a collection seal is a symbol of its institutional authority and cultural mission. It signifies the transition of a book from a private commodity to a public cultural resource, marking its inclusion into a collective body of knowledge.

The Role of Collection Seals in Constructing Cultural Memory

In the framework of cultural memory theory, library collection seals act as “lieux de mémoire” (sites of memory). They play a crucial role in the preservation, transmission, and reconstruction of social and institutional memory.

1. Preservation of Historical Lineage Collection seals anchor the memory of an institution’s development. Each seal represents a specific period

in a library's history, documenting changes in nomenclature, administrative shifts, and historical milestones. By preserving these physical imprints, libraries maintain a continuous link to their past, ensuring that the institutional legacy remains legible to future generations.

2. Reconstruction of Intellectual Networks The accumulation of multiple seals on a single volume creates a “memory map” of intellectual exchange. These layers of imprints reveal the social networks

摘要

Introduction

[Purpose/Significance] The digital era has propelled the evolution of collector seals into a symbiotic existence of three distinct forms: traditional, electronic, and native digital. Within this new developmental context, the identification and authentication of collector seals face significant challenges. These include the high cost of manual identification for traditional seals, the ease of tampering with electronic seals, and the difficulties associated with verifying the authenticity of native digital seals.

[Method/Process] To address these issues, this study proposes a multi-modal authentication framework for collector seals based on blockchain and deep learning technologies. First, we utilize deep learning algorithms to achieve high-precision automated identification and feature extraction of traditional collector seals. Second, we leverage the immutability and traceability of blockchain technology to establish a “digital identity” for each seal, ensuring the integrity of the authentication chain across different media.

[Result/Conclusion] Experimental results demonstrate that the proposed deep learning model achieves significant accuracy in recognizing complex seal scripts and weathered impressions. Furthermore, the blockchain-based management system effectively prevents the unauthorized replication of electronic seals and provides a robust provenance record for native digital seals. This integrated approach not only improves the efficiency of cultural heritage preservation but also provides a reliable technical foundation for the circulation and identification of collector seals in the digital economy.

摘要

[Purpose/Significance] The digital age has fostered a symbiotic landscape where library seals (collector's seals) exist in three distinct forms: traditional, electronic, and native digital. Within this new framework, there is an urgent need to explore the cultural functions of library seals and their role in the construction of cultural memory. [Method/Process] Employing a combination of theoretical interpretation and case analysis, this paper takes the morphological evolution

of library seals as its starting point. Based on an analysis of their cultural functions, the study constructs an analytical framework of “three forms and three dimensions” to investigate the primary supportive role of library seals in constructing cultural memory and their practical development within the library industry. [Results/Conclusion] Traditional library seals lay the material and cultural foundation within the institutional dimension; electronic seals facilitate cultural dissemination within the relational dimension; and native digital seals provide vitality for cultural innovation within the aesthetic dimension. These three forms complement and interact with one another to form a closed loop for the construction of cultural memory regarding library seals. Based on the current practices of the Chinese library industry in constructing cultural memory through these seals, this paper proposes recommendations in four areas: balanced advancement, deep value extraction, innovative dissemination, and collaborative integration, aiming to support the innovative development of excellent traditional Chinese culture.

Based on these findings, recommendations are proposed across four dimensions—balanced advancement, deep value extraction, innovative dissemination, and collaborative integration—to facilitate the innovative development of excellent traditional Chinese culture.

关键词

Book Seals in the Digital Age: Cultural Memory, Functional Evolution, and Library Practice

Abstract

As a unique cultural symbol in traditional Chinese bibliography, book seals (collector’s seals) carry profound historical information and aesthetic value. In the transition from the era of physical paper to the digital age, the form and function of book seals have undergone significant transformations. This paper explores the evolution of book seals from their traditional role as markers of ownership and aesthetic appreciation to their modern manifestations in digital environments. By analyzing the role of book seals in the construction of cultural memory, this study examines how libraries can leverage digital technology to preserve and activate the cultural value of these artifacts, ensuring their continued relevance in contemporary scholarship and public education.

1. Introduction

Book seals, often referred to as “ex-libris” in a Western context but possessing distinct artistic characteristics in East Asia, have served for centuries as a primary means of documenting the provenance and ownership of rare books and manuscripts. Beyond their utilitarian function of indicating possession, these seals represent a convergence of calligraphy, seal cutting, and bibliographical history. However, with the rapid advancement of digitalization and the shifting

paradigms of information consumption, the traditional physical book seal faces both challenges and opportunities. Understanding the morphological evolution of these seals is essential for preserving the continuity of cultural memory within the framework of modern library science.

2. The Cultural Memory and Functions of Book Seals

Book seals function as a “living” record of a book’s journey through time. Each impression left by a collector, scholar, or institution adds a layer to the book’s biography, transforming a mass-produced object into a unique historical document.

2.1 Provenance and Authentication The primary traditional function of a book seal is to establish ownership. In the context of rare book librarianship, these seals are critical for tracing provenance. They allow researchers to reconstruct lost private libraries and understand the circulation patterns of knowledge across different dynasties and regions.

2.2 Aesthetic and Symbolic Value Unlike simple signatures, book seals are works of art. The choice of script (such as seal script or clerical script), the material of the seal stone, and the composition of the characters reflect the collector’s personal taste and social status. In this sense, the seal serves as a symbolic bridge between the physical book and the intellectual identity of its owner.

3. Morphological Evolution in the Digital Age

The shift from physical to digital media has necessitated a re-evaluation

关键词

The Cultural Memory and Functional Evolution of Book Seals in the Digital Age

Abstract

As a unique cultural symbol in the history of Chinese books, the book seal (collector’s seal) carries profound historical information and aesthetic value. In the transition from the era of physical paper to the digital age, the form and function of book seals have undergone significant transformations. This paper explores the evolution of book seals from the perspective of cultural memory, analyzing their shifting roles in book collection, identification, and artistic expression. Furthermore, it examines how libraries and cultural institutions can leverage digital technology to preserve and revitalize the cultural heritage of book seals, ensuring their continued relevance in contemporary information environments.

1. Introduction

Book seals, also known as collector's seals or library stamps, have served for centuries as a primary means of marking ownership and documenting the provenance of Chinese texts. Beyond their practical utility, these seals represent a convergence of calligraphy, seal cutting, and bibliophilic culture. However, as the medium of knowledge shifts from physical paper to digital bits, the traditional book seal faces a crisis of "disembodiment." This study investigates the morphological evolution of book seals and their enduring significance as vehicles of cultural memory in the digital era.

2. The Traditional Cultural Functions of Book Seals

In the traditional bibliographic tradition, book seals performed several critical functions:

- **Authentication and Ownership:** The primary purpose of a seal was to assert ownership and prevent the loss or theft of valuable manuscripts and woodblock prints.
- **Documentation of Provenance:** As books passed through the hands of various scholars and collectors, the accumulation of seals created a "biography" of the volume, allowing modern researchers to trace its transmission history.
- **Aesthetic and Artistic Value:** The design, carving style, and placement of a seal were considered integral to the overall beauty of the book, reflecting the collector's personal taste and scholarly identity.
- **Cultural Memory:** Seals often contained mottos, studio names, or genealogical information, transforming the book into a repository of familial and social history.

3. Morphological Evolution in the Digital Age

The advent of digital libraries and electronic resources has necessitated a re-evaluation of the book seal's form. This evolution can be categorized into three distinct stages:

3.1 The Digital Surrogate In the process of digitizing rare books, traditional seals are captured as high-resolution images. These digital surrogates preserve the visual information of

0 引言

The collector's seal (Zangshuyin) is a distinctive Chinese cultural symbol with origins dating back to the Western Han Dynasty. It serves as vital historical evidence for researching the inheritance and dissemination of Chinese historical documents, as well as the developmental shifts within the field of book collecting. In the digital age, technological innovation has driven the continuous emergence

of new forms of collector' s seals. Currently, three forms coexist: traditional, electronic, and native digital seals. This morphological evolution has not only expanded the cultural functions of the collector' s seal but has also reshaped its role in the construction of cultural memory. As core entities among memory institutions, libraries bear the responsibility of safeguarding social memory; in the digital era, they should naturally become the primary guardians of the inheritance and innovation of collector' s seal cultural memory.

The “Proposals of the Central Committee of the Communist Party of China on Formulating the Fifteenth Five-Year Plan for National Economic and Social Development” explicitly state the need to “deeply implement projects for the inheritance and development of fine traditional Chinese culture...and construct a system of symbols for Chinese civilization. Adhere to the principle of culture benefiting the people, and implement actions to improve the quality and efficiency of public cultural services.” This series of strategic deployments provides a solid policy foundation for research related to collector' s seals and clarifies the practical requirements for libraries to undertake the construction of collector' s seal cultural memory. Against the backdrop of the digital age, exploring how libraries can facilitate the multi-modal inheritance and development of collector' s seals, fully activate the cultural functions accumulated through their historical deposition, and ensure their sustained participation in the construction of the Chinese nation' s cultural memory has become an important subject of both theoretical depth and practical significance.

1 相关研究

In the context of the digital age, the cultural and contemporary value of collector seals (Zangshuyin) has increasingly attracted scholarly attention. A review of the existing literature reveals that current research is primarily concentrated in four core areas. First, studies on historical development, connotation, and value: scholars have explored the historical lineage, cultural significance, core connotations, functional attributes, and regional characteristics of collector seals, establishing a theoretical foundation for understanding their cultural functions. Second, research on digital technology: this area focuses on the implementation paths of seal script recognition technologies [?], addressing key technical challenges in the digital transformation of collector seals. Third, research on digital resource organization: these studies focus on digital resource description [?], metadata standards, entity-linked retrieval, knowledge graph construction, and database development, driving the transition of collector seal digital resources from simple image-based presentation toward structured and systematic organization. Fourth, research on compilation, publication, and philological interpretation: by assembling seal images, transcriptions, and interpretive information, these works provide fundamental documentary support for excavating the cultural value of collector seals.

The aforementioned studies provide a solid literary foundation for this paper. However, it should be noted that current research focuses predominantly on the

historical value of traditional collector seals, with insufficient attention paid to the evolution of seal forms in the digital era. Furthermore, there is a disconnect between technical application research and cultural value research, and the intrinsic link between technical forms and the construction of cultural memory has not been clearly elucidated. Based on these observations, this paper attempts to move beyond the limitations of studying single-form collector seals by constructing an analytical framework of “three forms and three dimensions.” By analyzing the cultural functions of collector seals, this study reveals how different forms of seals contribute to the construction of cultural memory and offers practical recommendations based on the current state of the library industry in China.

2 藏书印的形态特征与文化功能

With the advancement of the digital age, the forms of collector seals (Zangshuyin) have continuously evolved, gradually manifesting in three distinct states: traditional, electronic, and native digital. While these three forms differ in their core characteristics and cultural functions, they share a common cultural origin and represent a progressive, mutually reinforcing relationship.

2.1 传统形态藏书印

Traditional physical book seals are physical artifacts preserved through historical accumulation. They serve as the prototypes for electronic book seals and the primary source for native digital seal forms. The impressions left by these seals on documents constitute the main manifestation of traditional book seals and are the direct objects of digitization efforts within libraries. Traditional seals are primarily classified into two categories: private seals and institutional seals. Private book seals convey the cultural heritage and philosophies of individual collectors, while institutional seals reflect formal document archival systems.

The physical substrates of these seals are typically composed of materials such as stone, bronze, or jade. Produced through traditional seal-cutting craftsmanship without the intervention of digital technology, these seals encapsulate the social networks of collectors, document preservation systems, and the aesthetic trends of specific historical periods. Consequently, they serve as a vital source for the cultural memory of book collecting. Furthermore, due to the uniqueness of their physical carriers, the non-reproducibility of the seal-cutting art, and the “ritualization” associated with their use, traditional seals have become the material foundation for the construction of book seal cultural memory.

2.2 电子形态藏书印

Digital collector’s seals are a digitized form of traditional physical seals, using the actual seal impressions found on documents as their direct object of transformation. Generated through digital technologies such as image acquisition,

modeling, and encoding, the core of this process involves the digital preservation and deconstruction of traditional seal forms.

Depending on the level of technical application, this digital form can restore the physical attributes of traditional seals while performing a refined, structured transformation of their spiritual and cultural connotations. Furthermore, through methods such as metadata labeling and knowledge graph construction, functional elements—including the collector's identity, the provenance of the document, and the collector's social networks—can be converted into digital data. This provides a vital medium for the digital preservation, integration, and social dissemination of the cultural memory associated with collector's seals. As a digitized form without a physical carrier, it serves as a crucial link between traditional seal culture and the contemporary digital communication system.

2.3 原生数字形态藏书印

Born-digital bookplates are developed and designed by memory institutions, such as libraries, in conjunction with digital technologies. To meet the demands of digital resource management, intellectual property protection, and service model innovation, these institutions have designed born-digital bookplates based on the seal-carving aesthetics, spiritual and cultural connotations, and ownership identification functions of traditional bookplates. Unlike purely technical digital copyright identifiers that only provide copyright confirmation, born-digital bookplates take the spiritual and cultural essence and the aesthetic art of traditional seal carving as their core foundation. While retaining the function of ownership identification, they deeply integrate cultural meaning and artistic aesthetics, becoming digital cultural carriers that possess both cultural value and technical functionality.

This development represents a creative transformation and innovative evolution of bookplate cultural memory in the digital age. These bookplates do not rely on physical media for their existence; instead, they utilize technologies such as encrypted digital code, blockchain distributed ledgers, augmented reality (AR), virtual reality (VR), and intelligent creation algorithms. Through these technical means, born-digital bookplates achieve diverse functions, including rights authentication, provenance tracking, aesthetic revitalization, and enhanced user interaction and experience.

2.4 三者关系

The three forms of bookplates—traditional, electronic, and native digital—exhibit a relationship characterized by cultural homology, progressive evolution, and mutual complementarity. Together, they constitute the core objects of study for bookplate research in the digital age. The traditional form serves as the source of all subsequent iterations; the cultural memory it carries establishes the

cultural boundaries for both the digital transformation of electronic bookplates and the innovative development of native digital forms.

The electronic form of the bookplate takes the traditional form as its sole prototype, utilizing digital technology to achieve the digital preservation, connection, integration, and social dissemination of cultural memory. By preserving the cultural authenticity of the traditional form while providing reusable digital cultural assets for native digital innovation, the electronic form acts as a vital bridge between the traditional and the native digital realms.

The native digital form of the bookplate is rooted in the digital era. While inheriting the physical attributes, spiritual and cultural connotations, and functional elements of the traditional form, it breaks through the functional boundaries of the electronic form. This evolution further expands the functional extension and application scenarios of bookplates, responding to the contemporary demands for the innovative development of bookplate cultural memory. Such innovative explorations also bolster the dissemination practices of traditional and electronic forms, further broadening the reach of cultural memory and enhancing the efficiency of its inheritance. Ultimately, these three forms support one another, collaboratively driving the stable transmission and sustainable development of bookplate cultural memory.

3 藏书印在文化记忆建构中的作用分析视角

Analyzing the role of collector seals in the construction of cultural memory requires both a focus on their essential core and an examination of the dynamic processes through which cultural memory is built.

As a unique cultural symbol in the Chinese tradition, collector seals (Zangshu Yin) function as more than mere marks of ownership; they serve as critical nodes in the transmission of knowledge and the preservation of heritage. By embedding personal identity into the physical medium of the book, these seals transform individual acts of possession into collective historical records. In the context of cultural memory, the collector seal acts as a “*lieu de mémoire*” (site of memory), bridging the gap between the private space of the scholar and the public sphere of historical consciousness.

The construction of cultural memory through collector seals operates across multiple dimensions. First, the seal provides a genealogical record of a text’s provenance, allowing subsequent generations to trace the intellectual lineage and social networks of past bibliophiles. Second, the aesthetic and textual content of the seals—often featuring sophisticated calligraphy and meaningful inscriptions—reflects the values, anxieties, and aspirations of specific historical periods. By analyzing these seals, we can reconstruct the mechanisms by which certain texts were canonized and how cultural identity was negotiated and reaffirmed over centuries. Ultimately, the collector seal ensures that the “memory” of the book remains a living, evolving dialogue between the past and the present.

3.1 藏书印的本质内核

At the institutional level, book collection seals integrate the conventions of private book collecting with the formal archival systems of institutional documentation. Within this framework, private collection seals serve as a primary medium for expressing personal ownership and scholarly identity. These seals are not merely decorative marks; they represent a codified system of private bibliographical management, often reflecting the specific rules and aesthetic preferences of individual collectors.

By imprinting a seal upon a volume, a collector asserts a formal claim over the physical object while simultaneously situating the work within a specific lineage of transmission. This practice bridges the gap between personal stewardship and the broader institutional history of literature. Consequently, these seals function as critical markers within the historical record, documenting the movement of texts between private libraries and public or institutional repositories, thereby preserving the provenance and cultural significance of the collection.

Private collector seals carry the responsibility of personal preservation and convey the ideals of cultural heritage. In contrast, institutional library seals clarify document ownership and collection order, reflecting power dynamics and institutional constraints. The cumulative stamping of private collector seals through successive generations, combined with the systematic stamping of institutional seals, forms a unique tradition of document provenance. Together, these practices maintain the internal order of bibliographic inheritance and cultural continuity.

At the relational dimension, collector seals serve as a spiritual bond within cultural circles, linking the interwoven cultural threads of people, places, events, and time.

It serves not only as a marker of literati identity but also as a vital social medium, facilitating a profound integration of cultural consensus between the realms of private and institutional book collecting. Furthermore, it bridges the temporal gap between ancient and modern scholars, entering public life through the transgenerational transmission of documents. In doing so, it effectively preserves essential functional elements, including the identity of collectors, the trajectories of document circulation, and the intricate social networks of bibliophiles.

From an aesthetic perspective, the collector's seal serves as a visual manifestation of the literati spirit. Centered on the craftsmanship of seal cutting, the tactile quality of the material, and the aesthetics of spatial arrangement, it forms a visual symbolic system that crystallizes both the aesthetic trends of the era and individual personal taste.

Through the interplay of seal script calligraphy (*zhuanfa*), compositional arrangement (*zhangfa*), and carving technique (*daofa*), the collector's seal constructs the artistic beauty of seal engraving. When integrated with the physical document, it creates a holistic beauty characterized by the symbiosis of text

and seal. Furthermore, through its stylistic variations and inscriptions, the seal externalizes the sentiments and moral ideals of the scholar, exemplifying the traditional Chinese aesthetic paradigm of “the unity of beauty and utility.”

Institutional systems serve as the foundation, social relationships act as the pulse, and aesthetic values provide the soul; together, these three elements constitute the organic core of the collector’ s seal (*cangshuyin*). This integrated whole not only exemplifies the traditional Chinese cultural principle of the “fusion of Dao and Qi” (the unity of metaphysical principles and physical objects) but also establishes a robust material and cultural framework for the construction of the cultural memory surrounding collector’ s seals.

3.2 文化记忆建构的路径

The construction of cultural memory must rely on media to first solidify the essential core of a culture, ensuring that memory does not undergo alienation. By expanding the “practical basis” and extending the “temporal scope” of memory, socialized dissemination can be achieved. Subsequently, memory is endowed with contemporary vitality, creatively transforming it into “functional memory that serves contemporary cultural identity.” This process corresponds one-to-one with the three dimensions of the essential core of book-collecting seals: the institutional dimension corresponds to the solidification of memory, the relational dimension to the dissemination of memory, and the aesthetic dimension to the revitalization of memory. Together, these dimensions ensure the stable inheritance and sustainable development of memory. Therefore, the construction path of the cultural memory of book-collecting seals can be analyzed through these three dimensions: institutional, relational, and aesthetic.

The institutional dimension serves as the foundational stage, focusing on the stability of the transmission of book-collecting seal cultural memory. It centers on ritualized practices such as the norms for affixing seals in specific historical periods, rules for defining the ownership of seal inscriptions, and the constraints of book inheritance systems. This dimension not only solidifies the essential core of the cultural memory of seals and avoids alienation during transmission but also lays a solid foundation for its socialized dissemination and creative transformation. While the institutional dimension constructs a stable core for this memory, the relational dimension acts as the intermediary link and the key path for achieving socialized dissemination. Its core objective is to realize the social generation and public diffusion of cultural memory based on its solidified essence. In its initial form, private book-collecting seals often correspond to the collector’ s personal history and social trajectory, falling within the category of communicative memory. In contrast, institutional seals carry the weight of document collection systems, reflecting institutionalized organizational memory. Both utilize documents as a medium to connect interpersonal and institutional networks, respectively. Together, they drive the cultural memory carried by seals to sublimate from private communicative and institutional memory into public cultural memory, achieving a dimensional leap from individual cognition

and institutional management to public dissemination, thereby continuously expanding its social influence and cultural radiation. Finally, the aesthetic dimension represents the stage of value extension. It focuses on the creative transformation of the cultural memory of seals by integrating the aesthetics of seal cutting with contemporary cultural contexts, pushing it beyond a rigid state of “stored memory.” Through the creative transformation of seal-cutting art, contemporary connotations are injected into the already socialized cultural memory of seals, making it adaptable to modern cultural needs and enabling cross-generational transmission, thus sustaining its cultural vitality.

The three dimensions described above progress layer by layer and support one another, providing a critical theoretical framework for exploring the construction of the cultural memory of book-collecting seals.

4 藏书印在文化记忆建构中具有实践支撑作用

In the context of the digital age, the three forms of book seals—traditional, electronic, and native digital—do not function independently in the construction of cultural memory. Instead, by leveraging their unique characteristics, they serve as the core practical supports for three distinct dimensions of theoretical analysis. This paper focuses on analyzing the dominant role of each form of book seal within its corresponding theoretical dimension. To clarify the core supporting logic and practical value of different seal forms in constructing cultural memory, this study focuses on these primary roles and does not currently address cross-dimensional interactions or correlations.

4.1 传统形态藏书印：制度维度的基础支撑

Traditional morphological collector’ s seals serve as the core practical vehicle of the institutional dimension, constructing a solid material foundation and cultural root for the collective memory of seal culture. The establishment of this foundation relies primarily on the institutionalization of ownership definition and the ritualization of transmission order; together, these two elements ensure that the essential core of the cultural memory surrounding collector’ s seals does not undergo alienation.

In terms of defining ownership, traditional seals utilize the content of the inscriptions and standardized application protocols to clarify the ownership and circulation order of documents. This process transforms abstract ownership rules into concrete, material markers. Regarding the order of transmission, the seal-engraving aesthetics and the specific procedures for their use form a distinct ritual. This ritualization fortifies the cultural foundation for the inheritance of collector’ s seal memory.

The “Tianyi Pavilion” collector’ s seal serves as a quintessential representative of these traditional forms. Its application was strictly limited to the collection within the Tianyi Pavilion, with the inscription explicitly reading “Tianyi Pavi-

ion.” This institutionalized practice not only clearly defined the boundaries of document ownership but also solidified the family inheritance rule of “never dividing the books among generations, and never allowing books to leave the pavilion” directly onto the documents themselves. Consequently, the order of book transmission became a perceptible and traceable cultural memory. This case fully demonstrates how traditional collector’ s seals, through institutional practice, solidify the essential core of cultural memory and highlight their fundamental supporting role within the institutional dimension.

4.2 电子形态藏书印：关系维度的传播助力

Electronic collector’ s seals, supported by various digital technologies, transcend the spatial and temporal limitations of traditional physical seals and serve as the core practical carrier for relational dimensions. They facilitate the elevation of cultural memory associated with these seals from private interpersonal memory and institutional memory to public cultural memory. The supportive role of technology in constructing this cultural memory varies across different levels of application, exhibiting a gradient development from basic preservation to systematic construction. At the foundational level, high-definition flatbed scanning is employed to achieve the digital preservation of the physical attributes of traditional seals. At the level of technical refinement, technologies such as 3D scanning, 3D modeling, and semantic encoding are utilized to perform a structured transformation of both the physical characteristics and the spiritual-cultural connotations of traditional seals. Finally, at the level of systematic construction, knowledge graph technology is used to effectively link the structured information regarding physical attributes, cultural meanings, and functional elements. This process establishes a connected network of cultural

memory and promotes the socialized dissemination of seal culture. Within this framework, digital preservation serves as the foundation for memory transmission, the construction of connection networks integrates isolated memories, and socialized dissemination breaks through the limitations of physical library collections to broaden the social reach of seal-related cultural memory.

Taking the seal database system of the Shanghai Library as an example, a multidimensional semantic network has been constructed covering key elements such as the collector’ s biography, social circles, document editions, collection periods, and regional culture. Through this system, users can retrieve relevant cultural memory information using keywords such as the collector’ s name or the seal inscription content. This socialized dissemination transforms the cultural memory of collector’ s seals from academic resources confined to large libraries in Eastern China into public cultural resources shared by the entire populace. This practice demonstrates that electronic seals, supported by hierarchical technologies, can transform isolated traditional seals into a digital memory network characterized by both basic searchability and systematic interpretability. By constructing these associative networks, the technology effectively drives the hierarchical transformation of memory—from private interpersonal memory to

institutional memory, and ultimately to public cultural memory—significantly expanding the breadth of dissemination for the cultural memory of collector’ s seals.

4.3 原生数字形态藏书印：审美维度的创新助推

Native digital bookplates (Zangshuyin) are supported by digital technology and rooted in the seal-cutting aesthetic art of traditional bookplates. Through technological innovation, these digital forms adapt traditional seal-cutting aesthetics to contemporary cultural needs, injecting new vitality into the cultural memory of bookplates at an aesthetic level. This approach provides a critical pathway for the creative transformation of bookplate cultural memory in the digital age. From an aesthetic dimension, the activation of cultural memory through native digital bookplates is primarily achieved through three interconnected processes.

First, the creative transformation of traditional seal-cutting aesthetics ensures that the art form is inherited in its entirety, laying the foundation for the continuity of memory. Second, the construction of interactive scenarios lowers the threshold for public participation, strengthening the public’ s sense of identity regarding bookplate cultural memory through enhanced interactive experiences. Third, the expansion of contemporary applications for traditional seal-cutting aesthetics allows the art to better align with modern needs, which is the key to truly bringing the cultural memory of bookplates to life.

The “Intelligent Seal-Cutting Platform” launched during the Hangzhou Asian Games serves as a typical representative of this practice. Developed by a project team from the National Culture and Tourism Science and Technology Innovation Engineering—undertaken by Zhejiang University—in collaboration with the Zhejiang University Library and other institutions, the platform centers on the seal-cutting aesthetics of traditional bookplates while utilizing digital technology to provide users with a personalized creative environment. Users can generate personalized bookplates simply by inputting text, selecting styles, and adjusting parameters.

This platform preserves traditional aesthetic elements such as symmetrical layouts and rhythmic line work while integrating contemporary elements like Asian Games mascots and venues, allowing the cultural memory of bookplates to step out of ancient texts and into public life. Furthermore, users can apply their generated bookplates to various scenarios, including electronic book signatures, ownership verification for digital collectibles, and online cultural sharing, further broadening the application scope of bookplates. During the Asian Games, the platform provided services more than 3,000 times, effectively promoting the popularized dissemination of traditional seal-cutting aesthetics. This practice demonstrates that native digital bookplates not only present cultural memory in a brand-new form but also deepen public understanding and identification through immersive and interactive experiences, achieving the living inheritance of bookplate cultural memory.

4.4 三种形态藏书印的协同联动闭环

The preceding sections have explained the dominant roles of the three forms of collector seals across their respective theoretical dimensions. In the actual process of constructing cultural memory, these three forms do not function in isolation; rather, they form a collaborative, closed-loop linkage of “original supply, transformative dissemination, and innovative feedback.” This synergy ensures the continuity and integrity of the cultural memory construction for collector seals. Traditional seals provide the material foundation and cultural roots from a systemic dimension, defining the cultural boundaries for the digital transformation of electronic forms and the innovative development of native digital forms. From a relational dimension, electronic seals facilitate the dissemination and promotion of the essential core of traditional seals, broadening the audience base for the aesthetic dimension of native digital seals. Finally, native digital seals demonstrate contemporary innovative practices from an aesthetic dimension. While preserving the seal-cutting aesthetics of traditional forms, they utilize digital technology to innovate in form, pattern, and presentation. Simultaneously, they enhance the cultural dissemination effects of both traditional and electronic seals, optimizing the activation pathways for traditional seal-cutting art and further expanding the social radiation of collector seal cultural memory. The “Yongle Encyclopedia” High-Definition Image Database [?], developed by the National Library of China, serves as a powerful verification of this collaborative closed-loop linkage among the three seal forms. Funded by the 2021 National Ancient Books Digitalization Project, the database was officially released and opened to the public for free in February 2023 [?]. The database systematically organizes traditional collector seals found on the surviving versions of the *Yongle Encyclopedia* held by the National Library, extracting information elements such as seal inscriptions and carving styles, thereby defining the cultural boundaries for subsequent digital transformation. By relying on digital technology to preserve and integrate traditional seals—and utilizing metadata tagging and knowledge indexing—electronic seals are transformed into linkable and traceable digital data. This not only aligns with the core construction objectives of intelligent indexing and digital integration but also expands the cultural dissemination scope and audience base of electronic seals.

The database assigns a unique native digital collector seal to each volume of digital literature, embedding copyright information, usage permissions, and other elements. These digital seals integrate the seal-cutting aesthetics of traditional forms, such as seal patterns and compositional layouts, with digital interactive technologies like Web3D and light-and-shadow restoration to create a presentation style that balances traditional charm with contemporary beauty. This innovation, rooted in digital technology, both inherits the aesthetic art of traditional seal cutting and utilizes a more communicable format to bolster the cultural dissemination of traditional and electronic seals. Consequently, the cultural memory of collector seals transcends the physical boundaries of offline collections, achieving broader social reach and recognition.

5 Practical Development of the Library Industry in the Construction of Collector Seal Cultural Memory

5.1 实践现状

Currently, China's library industry is engaged in multi-dimensional practices centered on the construction of cultural memory for bookplates (collector seals). These efforts have formed three core sectors: the inheritance of traditional forms, the development of electronic forms, and the innovation of born-digital forms. Leading institutions have already explored collaborative models linking these various forms, and related practices have begun to take shape on a significant scale, with diverse case studies emerging from libraries across different regions and levels.

- (1) Practical Exploration of Traditional Form Bookplates Practices involving traditional bookplates center on the physical seal impressions found in ancient book collections, focusing on three core tasks: fundamental protection, census and cataloging [?], and exhibition. For example, the Hunan Library organized a special exhibition on ancient bookplates, using 120 seal marks to connect the historical threads of Hunan's book-collecting culture. This initiative not only achieved the display and dissemination of physical seals and their associated histories but also provided core support for the tracing and preservation of bookplate cultural memory at the institutional level.
- (2) Practical Exploration of Electronic Form Bookplates Electronic bookplates represent a key area of current practice, advancing along the dual lines of resource construction and social dissemination to facilitate the widespread spread of relational cultural memory. Resource construction has evolved into a three-tier progressive system: the basic level involves preserving physical images through scanning; the enhancement level utilizes metadata labeling and 3D modeling to achieve structural transformation; and the professional level involves building specialized databases that use bookplates as core search points to enable document clustering, integration, and deep retrieval. Digital platforms for ancient books, represented by the Jiangsu Provincial Ancient Book Digital Resource Integration Platform, have achieved significant social influence. This platform provides the public with electronic bookplate resources and open search services, integrating bookplate cultural memory into daily life. Currently, most large and medium-sized libraries have digitized their ancient book catalogs, with bookplates becoming a standard search field.
- (3) Practical Exploration of Born-Digital Form Bookplates As an innovative direction, born-digital bookplates focus on technological integration and aesthetic revitalization, strengthening public participation and value identification regarding bookplate cultural memory. Such practices are primarily concentrated in large and medium-sized libraries. A notable example is the POD (Print on Demand) service at the Shanghai Library East Branch,

which enables the personalized customization of bookplate-related cultural and creative products. This approach enriches the presentation formats and application scenarios of bookplate cultural memory.

- (4) Practical Exploration of Collaborative Linkage Across Three Forms Some libraries have moved beyond the limitations of a single format to explore collaborative practices involving all three forms, creating a closed loop for the construction of bookplate cultural memory. The Zhejiang Library is a typical representative of this trend. In collaboration with volunteers from the Ant Group, the library developed the “Wenlan Chongguang” Alipay mini-program. As a core achievement of the “Integration of Books and Pavilions” project for the Wenlan Pavilion and the *Siku Quanshu* (Complete Library in Four Sections), this program deeply integrates all three forms of bookplate practice. The traditional form provides the foundation for cultural memory based on the physical seal impressions found in the Wenlan Pavilion’s copy of the *Siku Quanshu*.

The electronic form of bookplates relies on the mini-program’s online virtual exhibition hall to digitally present the *Siku Quanshu* seals and related cultural memory elements. This breaks through spatial and temporal constraints, broadening the dissemination scope of bookplate cultural memory. Meanwhile, the born-digital form enhances public engagement through interactive designs such as “Pavilion Tour Stamps” and “Reading Stamps,” facilitating the stable inheritance and sustainable development of bookplate cultural memory.

5.2 存在的问题

The Chinese library industry still faces several challenges in the practical construction of cultural memory for bookplates (collector seals), which are manifested in four primary areas.

First, there is a significant imbalance in development across different regions and administrative levels. While large-to-medium-sized libraries and those in the developed eastern coastal regions have implemented sophisticated practices, grassroots libraries and institutions in the central and western regions remain constrained by limitations in funding, technology, and professional expertise. Consequently, their efforts are largely confined to the basic preservation stage of traditional physical bookplate heritage.

Second, the extraction of cultural memory value remains insufficient. Current practices are often treated as subordinate to general ancient book conservation and digitization projects. There is a lack of deep exploration into the intrinsic cultural memory value of bookplates themselves, which results in weak semantic connectivity and poor relational integration among digital bookplate resources.

Third, the effectiveness of social dissemination is relatively low. The innovative application of native digital bookplates is mostly restricted to niche scenarios and has yet to achieve meaningful integration into the daily lives of the general

public.

Finally, a collaborative mechanism integrating the three forms of bookplates—traditional, digitized, and native digital—has not yet been widely established. Most libraries continue to focus on isolated practices involving a single format rather than developing a synergistic approach.

5.3 建议

(1) Balanced Advancement: Narrowing Regional and Hierarchical Practice Gaps

To address the imbalance in regional and hierarchical development, a “trinity” support system—comprising policy support, resource linkage, and capacity building—should be constructed, characterized by central coordination, local responsibility, and grassroots implementation. At the central level, starting from the top-level design of the national public cultural service system and the institutional construction of ancient book protection and document collection, relevant standards and norms should be improved. Furthermore, fiscal transfer payments and project guidance for libraries in central and western regions, as well as grassroots libraries, should be intensified. Local governments should incorporate the preservation of collector seal cultural memory into the scope of public cultural service system construction, establishing special funds to prioritize support for grassroots libraries in conducting digital acquisition, standardized description, and systematic filing of traditional collector seals.

Leveraging resource-sharing platforms and remote technical support, a “pairing assistance” mechanism should be established between developed eastern regions and the central/western regions, and between large-to-medium libraries and grassroots institutions, to facilitate resource exchange and the sharing of best practices. The National Center for Ancient Books Preservation could lead the organization of nationwide specialized training, offering systematic instruction on core skills such as the identification, conservation, restoration, digital transformation, and standardized description of collector seals, thereby comprehensively enhancing the professional capabilities of grassroots practitioners.

(2) Deepening Cultural Memory Value: Enhancing the Service Efficacy of Electronic Collector Seals

In response to the issue where collector seal practices are often subordinate to ancient book conservation and suffer from insufficient value extraction, libraries should construct a specialized research system centered on the cultural memory value of these seals. Expert teams should be organized to systematically analyze critical information carried by seal inscriptions, such as the collector’s biography, the provenance of documents, and the historical context of the era. This will facilitate the transformation of electronic collector seals from simple image

symbols into cultural carriers possessing both historical value and knowledge attributes. Simultaneously, it is recommended that the National Library of China take the lead in formulating unified description standards for electronic collector seal resources with reference to industry norms. By standardizing indexing across dimensions such as inscription content, seal-cutting style, and period of use, a cross-institutional and cross-regional knowledge graph for collector seals can be constructed, effectively addressing industry pain points such as resource fragmentation and information silos.

(3) Innovating Communication Methods: Integrating Native Digital Collector Seals into Public Life

To address the limited application scenarios and insufficient social communication efficacy of native digital collector seals, libraries should innovate communication pathways focused on interactivity, scenarization, and popularization. Interactive experience modules should be installed in grassroots cultural spaces, such as community reading rooms and rural libraries, and online design tools should be developed to guide the public in creating native digital collector seals. Virtual reality technology can be used to recreate the seal-cutting process, while youth-oriented media such as short videos and live streaming can be utilized to interpret the cultural memory and historical connotations behind the seals. Furthermore, cross-sector collaboration with schools and cultural venues should be deepened through diverse activities, such as specialized courses and themed exhibitions, to promote the integration of native digital collector seals into daily life and public cultural settings.

(4) Building a Synergistic Development System: Promoting the Deep Integration of the Three Seal Forms

To address the problem of most practices being confined to a single form and lacking synergy, libraries should coordinate the traditional, electronic, and native digital forms of collector seals. By building an integrated synergistic development system, libraries can promote the deep, converged development of these three forms. At the level of inheritance and protection, traditional collector seals should undergo refined description and standardized filing, ensuring high-quality resource preservation through high-definition digitization to lay a solid foundation for multi-form transformation. At the level of digital transformation, a precise mapping and associative indexing mechanism between traditional and electronic forms should be established. This ensures that digital resources can fully restore the formal characteristics, connotative meaning, and provenance information of traditional seals, preventing the loss or distortion of cultural information. At the level of innovative application, using the native digital form as a carrier, elements of collector seal cultural memory can be integrated into diverse scenarios such as digital reading, cultural and creative product development, and the rights confirmation of digital collections, achieving a dual empowerment of protection and utilization. On this basis, relying

on the national smart library system, a national-level collector seal resource sharing platform should be built to integrate resources across all three forms, driving cross-institutional and cross-regional data interoperability and business linkage to create a complete development closed-loop that seamlessly connects protection, digital transformation, and innovative application.

As the core subject in the construction of collector seal cultural memory in the digital age, libraries must not only uphold the essential core of this cultural memory but also strive to explore the evolutionary laws of seal forms. They must actively pioneer innovative practical paths, “aligning the cultural pursuits of the creative end with the cultural aspirations of the public.” Simultaneously, taking the construction of collector seal cultural memory as an entry point, libraries should participate deeply in contemporary cultural construction, helping to foster public cultural confidence and earnestly shouldering the “new cultural mission” of the new era.

6 结语

The continuous empowerment of digital technology and the deep advancement of the national cultural digitalization strategy have injected new developmental momentum into collector seals, an ancient carrier of cultural memory. By analyzing the three forms of collector seals in the digital age—traditional, electronic, and native digital—and their cultural functions, this paper constructs an analytical framework of “three forms and three dimensions” to systematically reveal the mechanism of collector seals in the construction of cultural memory. The study finds that traditional collector seals lay the material and cultural foundation in the institutional dimension; electronic collector seals facilitate cultural dissemination in the relational dimension; and native digital collector seals provide cultural innovation vitality in the aesthetic dimension. Together, these three forms create a closed loop of morphological complementarity, dimensional linkage, and memory symbiosis, highlighting the historical continuity of traditional Chinese culture from antiquity to the present.

As a primary carrier of cultural memory, libraries have achieved significant milestones in the practice of constructing cultural memory through collector seals. However, they still face practical challenges such as unbalanced regional and hierarchical development, insufficient value extraction, low dissemination efficiency, and the lack of a universal coordination mechanism among the three forms. These issues constrain the overall effectiveness of cultural memory construction for collector seals. Consequently, this paper proposes four recommendations: promoting balanced development to narrow the gap in regional and hierarchical practices; deeply mining cultural memory value to enhance the service efficiency of electronic collector seals; innovating dissemination methods to integrate native digital collector seals into public life; and building a collaborative development system to promote the deep integration of the three seal forms. This study has certain limitations. First, it does not include the physical seal impressions on document carriers as an independent form within the

research scope. Second, it lacks an analysis of the cross-dimensional interactive relationships between collector seals. Third, it does not employ empirical methods—such as user behavior data tracking or quantitative modeling—to test the effectiveness of the three forms and their collaborative mechanisms in cultural memory construction. Future research could explore these directions to further enrich and refine the theoretical framework of collector seal cultural memory.

References [1] Editorial Committee of the Encyclopedia of China (Third Edition), Editorial Committee of Library Science for the Encyclopedia of China (Third Edition). *Encyclopedia of China (Third Edition): Library Science* [M]. Beijing: Encyclopedia of China Publishing House, 2022: 30-31. [2] Wang Yuguang, Xu Yan. *Dictionary of Chinese Reading* [M]. Nanjing: Nanjing University Press, 1993: 445-446. [3] Feng Huiling. Digital Memory: The Digital Palace of Cultural Memory [J]. *Journal of Library Science in China*, 2020, 46(3): 4-16. [4] Proposals of the Central Committee of the Communist Party of China on Formulating the 15th Five-Year Plan for National Economic and Social Development [M]. Beijing: People's Publishing House, 2025. [5] Lin Shenqing. An Overview of Bibliophile Seals [J]. *Library and Information*, 1992(4): 74-77. [6] Liu Ning, Geng Bo, Qin Yurong. On Ancient Collector Seals [J]. *Library Journal*, 2007(11): 77-78. [7] Shi Wei. An Analysis of Collector Seals in Ancient Books [J]. *Journal of the National Library of China*, 2012, 21(4): 100-105. [8] Mo Jun. Notes on the Compilation of the *Guangdong Collector Seal Catalog* [J]. *Research on Ancient Books Preservation*, 2025(2): 242-248. [9] Zhang Zhijian, Xia Sudi, Liu Zhenghao, et al. Research on Seal Recognition Methods Based on Data Augmentation and ViT [J]. *Journal of the China Society for Scientific and Technical Information*, 2024, 43(3): 327-338. [10] Zhang Zhijian, Xia Sudi, Liu Zhenghao. Research on Seal Recognition and Application Integrating Multi-feature Deep Learning [J]. *Data Analysis and Knowledge Discovery*, 2024, 8(3): 143-155. [11] Li Linfang, Yang Haizheng, Yuan Xiaoru. Visualization of Ancient Book Circulation [J]. *Library Tribune*, 2024, 44(12): 92-100. [12] Wang Linxu, Wang Jun, Shi Rui, et al. Organizing Diverse Collections: Construction of the Digital Platform for the “National Directory of Precious Ancient Books” [J]. *Journal of Library Science in China*, 2025, 51(1): 4-18. [13] Wang Lili, Zhu Xiaomei. Design and Application of Metadata Description Standards for Ancient Book Seals [J]. *Library*, 2020(1): 106-111. [14] Qi Xiaochen, Sun Zhen, Xie Dengfeng. All-round Display of Ancient Book Collation and Research Results: Independent Development and Practice of a Display Platform for Library Collections and Seals [J]. *Library Science Quarterly*, 2021, 43(2): 61-65, 71. [15] Wang Lili, Zhang Ning. Analysis of Knowledge Association in Ancient Books from the Perspective of Digital Humanities [J]. *Journal of Library and Information Sciences in Agriculture*, 2022, 34(9). [16] Wan Yaping. Development and Utilization of Japanese Collector Seal Databases and Their Implications [J]. *Journal of Academic Libraries*, 2020, 38(5): 59-63, 71. [17] Jin Nuo, Wang Ruozhou. *Textual Research on Seals in the Master Copies of the “Chinese Re-creation of Rare Books”* [M]. Beijing: National Library of China Publishing House, 2023. [18] Wang Xiaobing. Writing, Ritual, and Cultural Memory [J].

Jiangxi Social Sciences, 2007(2): 237-244. [19] He Yicun. *Research on the Aesthetics of Ancient Chinese Book Block Printing* [D]. Nanjing: Nanjing University of the Arts, 2022. [20] Yin Bo. The Relationship Between “Utility” and “Beauty” in the Aesthetic Concepts of Traditional Chinese Handicrafts [J]. *Folk Culture Forum*, 2025(5): 144-151. [21] Guan Ning. Chinese Cultural Wisdom in the New Landscape of Modernization: Construction of Modern Civilization from the Perspective of Cultural Purport [J]. *Southeast Academic*, 2023(4): 1-11, 246. [22] Wang Mi. Cultural Memory: Logic of Emergence, Basic Dimensions, and Media Constraints [J]. *Foreign Theoretical Trends*, 2016(6): 8-17. [23] Jin Shoufu. Jan Assmann’ s Theory of Cultural Memory [J]. *Foreign Languages and Literature*, 2017, 33(2): 36-40. [24] Jiang Guangyou. How is the Inheritance of Red Genes Possible in the New Era: Reflections from the Perspective of Intersecting Cultural and Communicative Memory [J]. *Gansu Theory Research*, 2018(2): 47-52. [25] Wei Licheng. Cultural Memory and Identity: Reading Jan Assmann’ s *Cultural Memory* [J]. *Teaching of Ideological and Political Courses*, 2022(12). [26] Cao Congyi, Mao Tatian. From Memory Solidification to Memory Activation: Narrative Strategy Reconstruction of Archival Resources Participating in Intangible Cultural Heritage Inheritance [J]. *Archives Science Bulletin*, 2025(6): 9-20. [27] Liu Yaqiu. A Sociological Analysis of the Glimmer of Memory: Also a Review of Aleida Assmann’ s Theory of Cultural Memory [J]. *Journal of Social Development*, 2017, 4(4): 1-27, 237.

[28] Li Yingfei, Huang Xingyu. *Exploring the Library Buildings* [M]. Shanghai: Shanghai Jiao Tong University Press, 2025: 91. [31] Seven “Black Technologies” of the Hangzhou Asian Games [J]. *Hangzhou Science and Technology*, 2023, 54(4): 31-34. [32] Official Release of the “Yongle Encyclopedia High-Definition Image Database” and “National Directory of Precious Ancient Books Knowledge Base” [J]. *Documents*, 2023(2): 192-193. [33] National Center for Ancient Books Preservation. National Library’ s Digital Empowerment for Ancient Book Revitalization: “Yongle Encyclopedia High-Definition Image Database” [EB/OL]. [34] National Center for Ancient Books Preservation. Free Access! “Yongle Encyclopedia High-Definition Image Database” and “National Directory of Precious Ancient Books Knowledge Base” [EB/OL]. [36] Yan Tianyue, Yu Hui. A Preliminary Study on the Restoration Plan of Collector Seals: A Case Study of the Seals in *Lingbiao Shizhuan* at Fudan University Library [J]. *Research on Ancient Books Preservation*, 2024(1): 123-137. [37] Sun Xuelei, Dong Guanghe. *Selected Ancient Book Collector Seals from the National Library of China* [M]. Beijing: Thread-bound Books Publishing House, 2004. [38] Yang Yaotian. *Selected Ancient Book Seals from the Collection of the Library and Culture Center of the Central Party School of the CPC* [M]. Beijing: National Administration Press, 2021. [39] Hunan Library. Square Seals Connecting Millennial Cultural Lineage: Opening of the Ancient Book Collector Seal Exhibition at Hunan Library [EB/OL]. [2026-02-05]. [40] Qi Xiaochen, Sun Zhen, Xie Dengfeng. All-round Display of Ancient Book Collation and Research Results: Independent Development and Practice of a Display Platform for Library Collections and Seals [J]. *Library Science Quarterly*, 2021, 43(1): 61-65, 71. [42] Chen Li. On

Digital Philology [J]. *Journal of Library Science in China*, 2024, 50(6): 4-20. [44] Zhejiang Provincial Department of Culture, Radio, Television and Tourism. Release of the Results of the “Integration of Books and Pavilion” Project for Wenlan Pavilion and Siku Quanshu [EB/OL]. [2026-02-05]. [45] Jiang Xiaojuan. Technology and Culture in the Digital Age [J]. *Social Sciences in China*, 2021(8): 4-34, 204. [46] Xi Jinping’ s Reply to Senior Experts of the National Library Emphasizes Adhering to the Correct Political Direction and Promoting Excellent Traditional Culture [N]. *People’ s Daily*, 2019-09-10 (01). [47] Xi Jinping. *On Persisting in Comprehensively Deepening Reform: Volume I* [M]. Beijing: Central Compilation and Translation Press, 2025: 344.

On the Cultural Function and Cultural Memory Construction Role of Collector’ s Seals in Library Wu Xiuyun (The Institute of Contemporary China Studies, Chinese Academy of Social Sciences, Beijing 100009, China)

Abstract

Purpose/Significance The digital era has promoted the formation of three co-existing forms of collector’ s seals : traditional, electronic, and native digital. In this new landscape, it is urgent to explore the cultural function and cultural memory construction role of collector’ s seals in library.

Method/Process This study employs a combination of theoretical explanation and case analysis. Taking the morphological evolution of collector’ s seals as the starting point, based on their cultural function, this study builds an analytical framework of “three forms and three dimensions”, exploring the main supporting role of collector’ s seals in the cultural memory construction and the practical development of library.

Result/Conclusion Traditional collector’ s seals lay the material and cultural foundation in the institutional dimension, electronic collector’ s seals facilitate cultural dissemination in the relational dimension, and native digital collector’ s seals endow cultural innovation vitality in the aesthetic dimension. The three forms which are complementary and interlinked, jointly build a closed-loop construction of cultural memory through collector’ s seals. Considering the current practice of library in China in the cultural memory construction through collector’ s seals, this study proposes optimization suggestions from four aspects: balanced promotion, deep value exploration, innovative dissemination, and collaborative integration, to facilitate the innovative development of excellent traditional Chinese culture.

Keywords

Abstract

Collector’ s seals; Digital era; Cultural memory; Cultural function; Morphological evolution; Library

1. Introduction

As a unique cultural symbol in traditional Chinese book culture, collector' s seals serve not only as marks of ownership but also as significant carriers of cultural memory. In the digital era, the morphological evolution and functional transformation of these seals within library collections have become important subjects of academic inquiry. This paper explores the historical significance of collector' s seals and analyzes how their roles are being redefined through modern technological integration.

2. The Morphological Evolution of Collector' s Seals

The physical form of collector' s seals has undergone a long process of evolution, from simple name stamps to elaborate artistic expressions involving various scripts and materials. In the context of ancient bibliography, these seals provided a visual record of a book' s provenance. With the advent of the digital era, the "morphology" of the seal has expanded beyond the physical impression on paper. Digital surrogates and high-resolution imaging allow for the extraction and categorization of seal data, leading to a new digital morphology that facilitates broader scholarly access and comparative analysis.

[Figure 1: see original paper]

3. Cultural Memory and the Function of Seals in Libraries

Collector' s seals function as a bridge between the past and the present, preserving the "cultural memory" of the literati and the institutions that housed these works. Within the library environment, these seals serve several critical functions:

- **Authentication and Provenance:** They provide primary evidence for tracing the transmission history of rare books and manuscripts.
- **Artistic Value:** They represent the pinnacle of Chinese seal carving (zhuanke) art, reflecting the aesthetic preferences of different eras.
- **Social Networking:** The presence of multiple seals on a single volume maps out the social and intellectual networks of historical collectors.

In the digital age, libraries are no longer just physical repositories but have become nodes in a global information network. The cultural function of the collector' s seal has thus shifted from a static mark of possession to a dynamic data point in the reconstruction of cultural heritage.

4. Challenges and Opportunities in the Digital Era

The transition to digital platforms presents both challenges and opportunities for the study of collector' s seals. While digitization ensures the preservation of the visual information contained in seals, it also requires standardized metadata

and sophisticated image recognition technologies to manage the vast amount of data.

As shown in , the

Note: Figure translations are in progress. See original paper for figures.

Source: ChinaXiv –Machine translation. Verify with original.