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Research Article

The Chinese Writing System in Historical Perspective: Structure, Function and Cultural Embeddedness

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Abstract: This article examines the Chinese writing system from a long-term historical perspective, focusing on its structural evolution, functional transformation, and cultural embeddedness. Drawing on an integrated framework that combines historical linguistics, palaeography, and the history of writing culture, the study traces the development of Chinese writing from prehistoric proto-symbols to the stabilization and diversification of script styles. It argues that the emergence of writing in China was not a sudden invention but the outcome of prolonged symbolic accumulation shaped by social organization, ritual practice, and cognitive patterns. Through an analysis of oracle bone inscriptions, bronze inscriptions, and successive script forms from the Qin–Han period onward, the study demonstrates how writing became progressively institutionalized as a medium of governance, ritual communication, and knowledge transmission. The processes of script standardization, particularly the unification of writing under the Qin and the functional transformation associated with clerical and regular scripts, are shown to reflect a dynamic interaction between linguistic structure and sociopolitical needs. At the same time, the diversification of script styles illustrates how writing gradually transcended purely practical functions and acquired aesthetic and expressive dimensions. Overall, the article highlights the Chinese writing system as a historically stable yet internally dynamic complex system, whose continuity has been sustained through gradual adaptation rather than radical rupture. By emphasizing the interplay between structure, function, and cultural context, this study contributes to a more comprehensive understanding of how writing systems evolve within specific civilizational frameworks.

Keywords: Chinese Writing System, Script Evolution, Proto-Symbols, Script Standardization, Writing Culture

INTRODUCTION

Throughout its long historical development, the Chinese writing system has exhibited both continuity and discernible stage-based characteristics. From its earliest formation onward, the development of Chinese characters was never interrupted; rather, it progressed through gradual adjustments that preserved a visible connection between earlier and later forms. At the same time, changes accumulated across different historical periods led to noticeable differences in graphic form, structural organization, and patterns of use. Taken together, these features indicate that, over more than three millennia—from the Shang dynasty to the modern period—the evolution of Chinese characters unfolded through a series of identifiable phases.

Recent advances in the collection and organization of character materials from different periods have made it possible to approach the historical development of Chinese writing in a more systematic manner. Such work highlights the need to consider continuity and variation simultaneously. While continuity explains the long-term stability of the writing system, variation provides the basis for distinguishing between different stages of development. Any discussion of periodization therefore requires clear criteria and an explicit theoretical framework. Clarifying these principles is a necessary step before proposing a stage-based interpretation of the history of Chinese characters.

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THEORETICAL FRAMEWORK

Current approaches to the periodization of the Chinese writing system generally rely on three main criteria. The first is graphic form, which classifies developmental stages according to changes in the visual characteristics and stylistic features of characters. For example, Qiu Xigui, in *An Outline of Chinese Writing* (*Wenzixue Gaiyao*), discusses the evolution of character forms and divides the history of Chinese writing into two major stages: the "ancient script stage" (from the Shang dynasty to the Qin dynasty, approximately the fourteenth to the late third century BCE) and the "clerical–regular script stage" (from the Han dynasty to the present) (Qiu Xigui , 28).

The second criterion is structural composition, which classifies stages according to changes in character formation methods. Liu Youxin argues that only transformations in character construction methods and shifts in the number of construction categories can account for fundamental changes in the nature of Chinese characters (Liu & Fang, 2000, p. 322).

The third criterion is functional use, which classifies developmental stages based on changes in the role of Chinese characters in recording the Chinese language. Yang Runlu, for instance, aligns the periodization of Chinese character development with that of Chinese language history, dividing it into four periods: ancient (eighteenth to third century BCE, Shang to Han), medieval (fourth to fourteenth centuries, Six Dynasties to Tang–Song), imperial script stage (thirteenth to early twentieth centuries, Yuan–Ming–Qing), and modern (from 1919 to the present, since the May Fourth Movement) (Yang Runlu 2000, 93). Periodization of the historical development of Chinese characters should therefore integrate considerations of graphic form, structural organization, and functional change. Building on existing scholarship, a more refined classification of developmental stages should take changes in character forms as the primary criterion, while also accounting for diachronic shifts in character construction mechanisms, particularly transformations in linguistic functions across historical periods. From the perspective of the historical context and internal logic of the origins of writing, if the process of character formation is examined within a comprehensive analytical framework, the development of the Chinese writing system may broadly be divided into the four interrelated historical stages outlined above.

While these three criteria—graphic form, structural composition, and functional use—are analytically distinct, they do not necessarily yield identical periodization schemes. Rather, differences in the number of stages proposed in the literature reflect variations in analytical focus and level of resolution. Frameworks emphasizing broad structural and graphic continuity tend to adopt a three-stage division, grouping historical developments into more general phases. By contrast, approaches that prioritize functional differentiation and linguistic change often employ a four-stage model, allowing for finer distinctions between successive historical periods. These models should therefore be understood as complementary rather than contradictory: the three-stage division offers a macroscopic overview of long-term development, while the four-stage framework provides a more detailed account of internal differentiation within the writing system.

About the chronological division of stages in the development of Chinese characters, scholars within China have proposed differing views. Some begin with the Shang–Zhou period and divide the history into four stages—ancient, medieval, early modern, and modern—while others adopt a broader temporal scope with more general classifications, such as a three-stage model consisting of prehistoric symbols, ancient Chinese characters (Xia, Shang, Zhou, and Qin), and imperial script stage Chinese characters (from Han to Qing).

METHODOLOGY

Methodologically, this study adopts a multi-layered framework combining archaeological chronology, typology, documentary historical linguistics, palaeography, traditional philology, and cultural analysis. It first employs typological comparison of archaeological materials and early writing artifacts to examine the structural features, usage contexts, and functional roles of proto-symbols,

oracle bone inscriptions, and bronze inscriptions. It then draws on corpus-based documentary analysis to investigate references to writing practices in texts from the pre-Qin through Han periods, identifying mechanisms of script standardization and structural stabilization. In addition, comparative morphological analysis of small seal, clerical, regular, running, and cursive scripts is used to trace patterns of simplification, stroke organization, and aesthetic orientation. By situating these formal developments within their political, ritual, and epistemic functions, the study establishes structural linkages across historical stages and offers an integrated account of the evolutionary logic of the Chinese writing tradition.

On the basis of this methodological framework, different levels of periodization may be distinguished. While finer analytical distinctions are employed where necessary, the overall historical development of Chinese characters is organized here into three major stages, which serve as a broad structural framework for the discussion that follows.

The development of Chinese characters may be divided into three major historical stages. The first stage, the prehistoric symbol stage (late Neolithic period to the Xia dynasty), is characterized by incised symbols and graphic marks that had not yet formed an autonomous writing system. These signs conveyed limited meanings but were incapable of systematically recording language, functioning instead as auxiliary ideographic devices. Through long-term symbolic accumulation, such pictorial markers gradually stabilized in form and use, establishing the cognitive and cultural foundations necessary for writing. By the early second millennium BCE, these symbols displayed increasing structural and functional integration, indicating the imminent emergence of an early Chinese writing system.

The second stage, the ancient script stage (Shang to Qin dynasties), marks the formation of a mature writing system. Although writing had likely reached a relatively advanced level by the Shang dynasty, oracle bone inscriptions from the late Shang period constitute the earliest corpus available for systematic analysis. From the Shang through the Western Zhou, script forms evolved under the influence of ritual practices, political institutions, and writing conventions. During the Warring States period, political fragmentation resulted in significant regional diversification of scripts. The Qin unification and the standardization of small seal script consolidated pre-Qin traditions and brought the ancient stage to a close. Concurrently, clerical script emerged as a transitional form, while phonetic–semantic compounds became the dominant character formation mechanism, reflecting close alignment with the linguistic structure of Old Chinese.

The third stage, corresponding to the imperial period from the Han to the Qing dynasties, witnessed a decisive transformation in both the form and function of Chinese script.The establishment of clerical script as the standard script marked the transition from ancient to later writing forms. During the Han dynasty, clerical script became increasingly standardized, while subsequent periods saw the gradual formation and stabilization of regular script. By the Sui and Tang dynasties, regular script reached full maturity and established the normative framework that would dominate Chinese writing for more than a millennium. After the Tang period, despite stylistic variation in calligraphy, the fundamental structure of Chinese characters remained largely stable until the late Qing dynasty.

From the perspective of historical linguistics, the development of standardized Chinese script forms corresponds closely to the transition from Old Chinese to Middle Chinese and subsequently to post–Middle Chinese.As grammatical and phonological structures were reconfigured, the writing system adjusted accordingly, shifting from a word-oriented recording mode toward a morpheme-centered model (Zhang Yongquan 2003,1-6). This shift enhanced the capacity of Chinese characters to accommodate the expressive needs of later linguistic stages and illustrates the dynamic interaction between language change and writing practices.

A comparative review of existing periodization models further suggests several methodological considerations. First, classifications based on graphic form and those grounded in functional change do not necessarily align, as they reflect different historical tempos and linguistic

ecologies and therefore cannot be treated as equivalent. Second, the evolution of Chinese script forms is fundamentally gradual: new scripts emerge through extended transitional phases rather than abrupt replacement. Transitions such as those from pre-Qin scripts to clerical script, from clerical to regular script, and from traditional to simplified characters exemplify this long-term continuity within change. Moreover, individual script styles often persist across multiple dynasties, while multiple scripts may coexist within the same period, producing a layered and overlapping historical configuration that complicates linear analysis.

Overall, the Chinese writing system has evolved through a sustained balance between transmission and development. Continuity has remained dominant, while innovation has proceeded incrementally, resulting in the coexistence of older and newer forms within single synchronic systems. Finally, although changes in character formation methods are historically observable, they are insufficient as a primary criterion for script periodization, as technical refinements often precede or lag behind the stabilization of overall script styles.

Against this background, the present study adopts an integrated approach combining historical linguistics, palaeography, and the history of writing culture to examine the structural evolution, functional roles, and cultural embedding of Chinese writing across historical stages. Beginning with proto-symbolic practices, it identifies Shang–Zhou institutionalized writing as a key turning point and analyzes the emergence of writing norms and script differentiation from the Qin–Han period onward, thereby elucidating the continuity, differentiation, and reorganization that have shaped the Chinese writing tradition over several millennia.

FINDINGS AND DISCUSSION

The origin of Chinese writing, like that of writing systems elsewhere in the world, ultimately derives from the depiction of concrete objects and phenomena in the real world. A widely circulated popular view holds that, unlike other writing systems, Chinese writing has somehow permanently retained a pictorial nature and is therefore commonly described as an "ideographic" system, in which meaning is conveyed through small pictures independently of spoken language. Boltz argues that this view is fundamentally untenable, as all Chinese characters correspond to lexical units, and words inherently possess both phonetic and semantic dimensions. Accordingly, Chinese characters must be marked as bearing both phonetic [+P] and semantic [+S] features. This implies that Chinese characters should more accurately be described as logographs, rather than as ideographs or pictographs (Boltz 2000, 6).

1. The Prehistoric Period: The Origins and Early Forms of Chinese Characters

1.1 The Mythical and Proto-Symbolic Stage

In traditional narratives, Cangjie is commonly portrayed as the legendary originator of Chinese writing. Stories surrounding "Cangjie's creation of characters" form part of a broader corpus of early cultural accounts transmitted across successive historical periods.Works such as *Xunzi, Han Feizi, Lüshi Chunqiu,* and *Huainanzi* all contain references to this account. In the preface to *Shuowen Jiezi,* Xu Shen states: "Cangjie, the historian of the Yellow Emperor, observed the tracks of birds and beasts and recognized that their patterns could be distinguished from one another. He then created written signs, enabling the various crafts to be regulated and the myriad things to be classified." This passage describes Cangjie as creating writing through observation of "the tracks of birds and beasts" (Cai, 2022, pp. 10–11).

The legend of "Cangjie's creation of writing" reflects cultural rather than historical interpretations of writing's origin. From the Warring States to the Qin–Han periods, this myth became central in intellectual discussions, symbolizing the emergence of writing as a marker of civilization. Cangjie, portrayed as "the historian of the Yellow Emperor," was endowed with cultural legitimacy, and the myth of creating characters from animal tracks represents an analogy for pictographic origins, not an actual account of writing's development. In the *Shuowen Jiezi* preface, Xu Shen used this myth

to highlight writing's functional significance in societal organization, reflecting the Han-dynasty view of writing as a tool of governance and knowledge, not just recording. Although the Cangjie legend lacks historical validity, it remains significant in intellectual history for demonstrating how myth explained the rise of symbolic systems and gave writing cultural and institutional meaning.

In fact, advances in Chinese archaeology have pushed the earliest evidence for the emergence of writing-related symbols back to more than 6,000 years ago. Incised symbols found on turtle shells and other objects unearthed at Jiahu in Wuyang County, Henan Province—associated with the Peiligang culture—constitute some of the earliest known symbols potentially related to writing worldwide (Li , 2018, p. 94). The incised symbols from Jiahu are frequently discussed in the literature in relation to broader questions about the origins of writing in China. Although these symbols cannot be classified as writing in a strict sense, they demonstrate an early degree of systematic and functional symbolic expression in prehistoric society. Similar incised signs found at Peiligang-, Liangzhu-, and Taosi-related sites indicate that multiple cultural traditions in the Huaxia region experimented with symbolic means of recording or communication. While lacking phonetic–semantic correspondence, the repeated forms and patterned usage of these symbols suggest the emergence of socially meaningful sign systems. Their significance lies not in constituting writing itself, but in revealing the cultural and cognitive foundations that enabled the later formation of mature writing systems such as oracle bone inscriptions, illustrating a gradual transition from symbols to writing.

The late Neolithic period in China was characterized by significant cultural expansion. Between approximately 7,000 and 4,600 years ago, agricultural production advanced further, population increased markedly, and settlements, ritual architecture, and painted pottery cultures emerged (Yan, 1998, pp. 11–12). Archaeological findings indicate that early incised symbols from the Neolithic period formed the cultural background from which Chinese writing later emerged. Pottery marks associated with the Yangshao and Liangzhu cultures reflect early symbolic practices developed in response to increasing social complexity, agricultural expansion, and sedentary life. These symbols were not merely decorative; their repeated forms and tendencies toward regularity suggest an emerging system of symbolic communication. Although they did not yet constitute writing in the strict sense, they demonstrate a gradual transition from symbolic marking to structured representation, providing the cultural and cognitive foundation for the later development of mature writing systems. Archaeological evidence further indicates that the painted pottery motifs of the Yangshao culture already exhibit clear symbolic characteristics. The Banpo site near Xi'an is often cited in discussions of early incised symbols found on Neolithic pottery. Although these symbols had not yet formed a systematic writing system, they already possessed ideational functions. The Liangzhu culture, by contrast, yielded large quantities of jade artifacts engraved with refined motifs, among which primitive forms of writing have been identified. These emerging proto-characters are often found on the surfaces of jade and pottery objects; their graphic forms approach standardization and appear to convey relatively definite meanings. During the Longshan period (c. 3000–1900 BCE), writing as a tool of social interaction had already developed into symbols that used fixed "forms" to represent "meanings," and may thus be regarded as writing in formation. Pottery inscriptions associated with sites such as Dinggong and the Liangzhu culture have been considered fully formed writing and products of early Chinese civilization, representing prototype forms of Chinese square-shaped characters (Xu, 2012, p. 10; Zhang Zhongpei 2004, pp. 137–138).

The painted pottery symbols and jade inscriptions discovered in the Yangshao and Liangzhu cultures are widely regarded as the most critical stage of symbolization prior to the formation of Chinese writing. Their repetition, tendencies toward standardization, and concentrated distribution on specific types of artifacts indicate that their emergence was not accidental, but closely connected to social organization, belief systems, and ritual practices of the time. Recurrent symbols at the Banpo site exhibit converging patterns of graphic construction, suggesting that production activities and daily communication had already generated a need for abstract information processing. The engraved motifs on Liangzhu jade artifacts, combined with their refined craftsmanship, highlight the importance of symbols within ritual systems. Certain symbols display continuity and combinatory features that transcend mere decorative patterns, acquiring the characteristics of preliminary "institutionalized

symbols." These features became further reinforced during the Longshan period, where the principle of "using form to convey meaning" established a structural foundation for the emergence of mature writing systems.

Scholars generally agree that although the symbolic systems represented by pottery inscriptions from Dinggong and the Liangzhu culture were not yet fully developed at the phonological level, their ideational functions and organizational features were already highly pronounced. In terms of graphic form, these symbols exhibit clear tendencies toward fixation and continuity with the constructional logic of later square-shaped characters. They are therefore regarded as early sources of the structural tradition of Chinese writing. In other words, these proto-symbols were neither scattered marks nor purely artistic decorations, but transitional stages leading toward mature writing systems such as oracle bone inscriptions. As such, they provide indispensable empirical materials for understanding the cultural foundations underlying the formation of Chinese characters (Qiu, 1988).

Taken together, the mythical and proto-symbolic stage represents an early phase in which symbolic marking, meaning attribution, and visual convention began to take shape, without yet forming a fully developed writing system. Although these early practices lack the formal stability and linguistic precision of later scripts, they introduced enduring principles of representation that continued to inform subsequent stages. From this perspective, prehistoric symbolic practices can be understood as providing a conceptual and visual background against which more systematic forms of writing later emerged, rather than as isolated or self-contained phenomena. This continuity helps situate the origins of Chinese writing within a longer process of gradual formalization and increasing functional differentiation.

2. Chinese Characters in the Early Ancient Period: Scriptual Development from the Shang–Zhou to the Qin–Han

When considered from a broader historical perspective, writing practices during the Shang–Zhou period can be seen as exhibiting both elements of continuity and gradual change. Oracle bone and bronze inscriptions display recurring patterns in character formation and graphic organization, alongside a degree of variation across contexts. These features suggest the existence of shared conventions rather than a fully unified system. Later discussions of Qin–Han standardization often note this earlier background of relatively stable yet flexible practices, which provided a historical point of reference for subsequent efforts at script regularization. From this perspective, the relationship between Shang–Zhou writing and Qin–Han standardization can be approached as one of historical continuity rather than abrupt transformation.

2.1 Oracle Bone Script: The Establishment of a Mature Writing System

The earliest writing that can be unequivocally identified as Chinese dates to the late Shang state (commonly referred to as the Shang "dynasty"), approximately between 1200 and 1050 BCE (Boltz, 2000, p. 1). The majority of oracle bone inscriptions have been excavated in the area of Xiaotun Village at the Yinxu site in Anyang, Henan Province. The relocation of the Shang capital to Yin under King Pan Geng occurred around 1300 BCE, by which time oracle bone script had already developed into a relatively mature writing system (Chen, 2015, p. 14). Oracle bone inscriptions were primarily used for divinatory records during the late Shang period (c. fourteenth to eleventh centuries BCE). Their contents encompass a wide range of topics, including ritual sacrifice, warfare, agriculture, and astronomical observation, providing invaluable primary sources for the study of Shang society.

The maturity of oracle bone script is evident in the standardization of character construction. Many characters already exhibit stable patterns of component combination, and clear lines of inheritance can be traced between oracle bone forms and later bronze inscriptions, seal script, and clerical script. This internal structural continuity demonstrates that oracle bone script was not merely a tool for recording divination, but constituted a foundational stage of the later Chinese writing system (Wang, 2015; Zhang Lianshun 2015).

According to Qian Cunxun, during the Shang period (c. fifteenth century to 1046 BCE), inscriptions on bones and shells were developed as a means of communication with the dead, particularly royal ancestors, whether to initiate exchanges or, at minimum, to conclude them. Deities were instructed to accept offerings in exchange for favors, often accompanied by oracular guidance. The divination techniques employed in oracle bone practice were incorporated during the early Zhou period (1046–256 BCE) into the *Yijing* (*Book of Changes*) (Kelly, 2006, p. 20). From the perspective of the interaction between early religious structures and writing practices, the role of writing in divination extended beyond the mere recording of outcomes. It was embedded within a communicative system linking humans, ancestors, and Heaven during the Shang–Zhou period. The close correspondence between the formulaic language of divination procedures and ancestral temple rituals rendered writing a crucial medium for sustaining political legitimacy and lineage order.

The inscribed questions, objects of supplication, and event classifications reveal the extent to which royal authority relied on written procedures in major state affairs. This reliance reflects both the maturity of ritual systems and the role of writing as a key instrument of verification and decision-making in early states. The transition of divination practices and writing styles from the Shang to the Zhou period involved not merely formal change but a reorganization of knowledge structures. Standardized divinatory expressions shaped later modes of judgment and classification, contributing to linguistic conventions in textual traditions. In this way, early writing participated in the formation of institutional, epistemic, and ideological structures, while divinatory language provides crucial insight into this process.

From the perspective of character structure, Shang-period writing already demonstrates relatively mature methods of character formation, including pictographs, indicative characters, associative compounds, and phonetic–semantic compounds (Li, 2018, p. 113). For example, the character *ri* 日 (“sun”) appears as a circular form representing the sun, while *yue* 月 (“moon”) takes the shape of a crescent. Such intuitive pictographic features constitute an important characteristic of early Chinese characters. At the same time, oracle bone inscriptions also contain representations of abstract concepts, such as the indicative characters *shang* 上(“above”) and *xia* 下 (“below”), indicating that Chinese characters had already acquired the capacity to express abstract thought.

2.2 Bronze Inscriptions: The Expansion of Writing Media

During the Western Zhou period (1046–771 BCE), bronze vessels became a major writing medium, giving rise to bronze inscriptions. Compared with oracle bone script, these inscriptions display smoother lines and more regularized forms, reflecting advances in writing techniques. The Mao Gong Ding inscription, which records the appointment of Mao Gong by King Xuan of Zhou, exemplifies the historical and documentary significance of Western Zhou bronze texts. Although writing systems across the Eastern Zhou states were broadly similar, individual characters often appeared in variant graphic forms.

Stone Drum inscriptions (*Shiguwen*), also classified as bronze inscriptions or large seal script (*dazhuan*), represent the earliest surviving stone inscriptions in China. Distinct from bronze inscriptions in form and dynamism, they occupy a transitional position in the history of Chinese writing. Together, bronze and Stone Drum inscriptions bridge earlier scripts and later standardization, inheriting Warring States Qin styles and anticipating the small seal script of the Qin empire. The spread of bronze inscriptions marks a major expansion in the function of writing, extending its use from divination to political, ritual, and public contexts. Writing in this period thus acquired not only administrative value but also emerging aesthetic qualities, laying the groundwork for later calligraphic traditions.

2.3 Small Seal Script: A Milestone in Script Unification

With the shift from engraving to writing, the adoption of the brush and bamboo slips marked a transition from hard to soft writing materials, fundamentally transforming Chinese character practice. The flexibility of brush writing enabled the emergence of calligraphy as a script-based art form. Integrated into the Confucian *Six Arts*, calligraphy was regarded as a core accomplishment of the educated elite. Closely linked with reading and literacy, it was understood not merely as a technique but as an expression of scholarly cultivation, serving as a medium for moral values, intellectual refinement, and textual culture.

After the First Emperor of Qin unified the six states, the policy of "unifying the script" (*shu tong wen*) was implemented with the aim of standardizing writing across the empire on the basis of Qin script forms. This initiative required a comprehensive reorganization of Qin writing practices themselves and was overseen by the chancellor Li Si, who established an official standard script—seal script (*zhuanshu*). This reform constituted a watershed in the history of Chinese writing. It brought an end to the disorder of divergent character forms that had characterized the Warring States period and laid a foundation for cultural integration and for the enduring ideology of political unification within the Chinese state. Small seal script is characterized by increasingly regularized and balanced strokes and a rigorously organized structure. It largely shed the pictorial qualities of earlier scripts and, in comparison with Stone Drum inscriptions, many character forms underwent clear simplification, making them more conducive to writing (Qiu, 2013, pp. 71-72). At the same time, however, the standardization of small seal script introduced problems of writing efficiency. Its complex strokes and strict structural requirements rendered everyday writing cumbersome, thereby directly encouraging the emergence and development of clerical script.

2.4 Clerical Script: A Reform Driven by Practicality

Clerical script (*lishu*) emerged in the late Warring States period as a vernacular form that developed from the repeated modification and simplification of the rigid official script by Qin scribes in everyday writing practices. This early form is commonly referred to as "Qin clerical script." During the Han dynasty, clerical script replaced small seal script as the primary writing style. From this point onward, the historical development of Chinese characters moved away from the ancient script stage and entered what is often described as the clerical–regular script stage。Clerical script broke away from the rounded and curvilinear strokes of small seal script, adopting instead more angular, straight, and horizontal forms. This transformation significantly increased writing speed and made writing considerably more convenient than small seal script (Qiu, 2013, pp. 73-90). Visually, clerical script tends to appear broader and flatter, with elongated horizontal strokes and shortened vertical strokes, producing an overall rectangular structure. The Han dynasty represented the peak period of clerical script development. Han bamboo slips unearthed across China, together with stone stelae from successive periods, demonstrate the stylistic diversity of clerical script. Well-known Han stelae such as the *Yiying Stele* and the *Liqi Stele* exemplify characteristic features of clerical script, including the so-called "silkworm head and wild goose tail" and the distinctive modulation of strokes.

The transformation of seal script into clerical script, known as the "clerical transformation" (*libian*), constitutes a critical turning point in the history of Chinese characters. This change was not merely a shift in script style, but a fundamental reconfiguration of the structural principles underlying Chinese character formation. Characters after the clerical transformation more closely resemble those in use today and are therefore more readily recognizable than ancient script forms (Dong, 1998, p. 90). The ongoing tendency toward simplification in character forms reflects the communicative function of writing itself. The widespread adoption of clerical script also marked a transition of Chinese writing from an elite medium to one accessible to broader segments of society, thereby facilitating the dissemination of culture and knowledge.

3. The Standardization and Stabilization of Chinese Characters in the Medieval Period

With the transition to the medieval period (fourth–fourteenth centuries), advances in papermaking shifted writing media from bamboo slips to paper, transforming reading and writing practices and accelerating the development of script styles. The greater convenience of writing materials expanded expressive possibilities and fostered the diversification of calligraphy. During this period, writing moved beyond its informational function and developed into an independent artistic practice through which literati expressed emotion and self-cultivation. The integration of sound, form, and meaning further enhanced the aesthetic potential of Chinese characters, particularly in poetry.

Changes in character structure, the relative complexity or simplicity of strokes, and variations in rectangular, square, or flattened forms all reflect broader historical developments and the general tendency of Chinese characters to evolve from complexity toward simplification. Script styles changed in response to historical conditions: from large seal script to small seal script, and from the Shang period through the late Qing, the use of the brush and stylistic conventions of ancient scripts demonstrate both continuity and transformation, combining inheritance with innovation (Xu , 1996, p. 15).

3.1 Regular Script: The Establishment of the Standard Form

The term *kai* (楷) means "model" or "standard," and *regular script* (*kaishu*) originally referred to characters that could serve as normative exemplars or that followed established rules. Zhong You of the Wei–Jin period is commonly regarded as the progenitor of regular script. His small regular script works, such as *Xuanshi Biao*, still retain traces of clerical script, yet they effectively established fundamental conventions for regular script stroke execution. From the Northern and Southern Dynasties onward, regular script became the dominant writing style (Qiu, 2013, pp. 99-100).

Regular script developed directly out of clerical script, transforming character shapes from the flattened forms characteristic of clerical script into more square configurations. After several centuries of evolution, regular script reached maturity during the Sui and Tang periods. The Tang dynasty marked a peak in the development of regular script, with figures such as Ouyang Xun, Yan Zhenqing, and Liu Gongquan establishing distinct stylistic traditions. Once stabilized, regular script exhibited highly refined, rigorous, and standardized stroke patterns and structural principles (Dong, 1998, pp. 95-99).

The defining features of regular script include level horizontal strokes, upright vertical strokes, balanced structures, and clearly articulated components, all of which facilitate legibility and ease of writing. These characteristics enabled regular script to become the standard form of Chinese characters, a status it continues to hold as the primary reference for both handwriting and printing. The establishment of regular script thus marked the final consolidation of the standard character form and played a decisive role in ensuring the long-term stability and transmission of the Chinese writing system.

3.2 Running Script and Cursive Script: Balancing Aesthetic Expression and Practical Use

In addition to clerical script, cursive script (*caoshu*) was also commonly used during the Han dynasty. The term *cao* denotes speed and informality. From approximately the Eastern Jin period onward, early Han cursive script came to be distinguished as *zhangcao* ("chapter cursive"), while later forms were referred to as *jincao* ("modern cursive"). Cursive script functioned as a simplified auxiliary style to clerical script, primarily used for drafting documents and correspondence (Qiu, 2013, pp. 90-91). Due to its extensive stroke linkage and simplification, cursive script often produced highly abbreviated forms that could be difficult to distinguish and read. Over time, its later development is often characterized as becoming less accessible. Despite this relatively limited social base, cursive script was consistently favored by calligraphers across successive dynasties.

Cursive script is generally described as having developed through a sequence of forms, commonly associated with zhangcao, jincao, and later more freely executed cursive styles. *Zhangcao* retained certain features of clerical script, *jincao* fully regularized its structural principles, and *kuangcao* pushed expressive freedom to its furthest extent. The emergence of cursive script not only improved writing efficiency but also greatly expanded the expressive range of Chinese characters. Notably, the Japanese *hiragana* syllabary was derived from cursive script forms used during the Sui–Tang period. Furthermore, the artistic practice of linking and simplifying strokes in cursive script exerted a significant influence on later character simplification reforms. For instance, several simplified characters in contemporary use—such as *le* (樂 → 乐), *tang* (湯 → 汤), *tu* (圖 → 图), and *dong* (東 → 东)—can be traced back to cursive script forms (Hu & Yan, 2019, p. 17).

Running script (*xingshu*), which includes both semi-regular (*xingkai*) and semi-cursive (*xingcao*) varieties, is often described as a handwritten or connected style. Positioned between regular and cursive script, running script preserves a degree of formal structure while also achieving fluency and visual elegance. Early running script constituted a distinct script style with its own characteristics; it was neither a mixed script combining elements of new clerical and cursive forms, nor merely a cursive variant of clerical script (Qiu, 2013, p. 96). Wang Xizhi's *Lanting Xu* (*Preface to the Orchid Pavilion Gathering*) is widely regarded as the finest example of running script, exemplifying its expressive potential. The emergence of running and cursive scripts reflects sustained efforts within the Chinese writing tradition to negotiate a balance between practical efficiency and aesthetic expression. In addition, works such as Yan Zhenqing's *Ji Zhi Wen Gao* from the Tang dynasty, Su Shi's *Hanshi Tie* from the Song dynasty, and calligraphic productions by Mi Fu, Huang Tingjian, and Zhao Mengfu represent successive high points in the artistic development of running script.

4. The Modern Transformation of Chinese Characters

The Tang and Song dynasties are commonly viewed as a high point in premodern Chinese cultural and artistic development. In the Yuan, Ming, and Qing periods, calligraphers continued to pursue distinctive personal styles; however, large-scale transformative innovation became less pronounced. The wider circulation of printed materials and shifts in cultural practices gradually reduced the central role of handwriting as a primary catalyst for artistic change, a tendency observable across multiple cultural domains of the period.

By the late Qing, concerns about political decline were accompanied by broader reflections on cultural and institutional reform, including the role of the writing system. Within this climate, Chinese characters increasingly became a subject of critical reflection. In comparative discussions that juxtaposed China with other societies undergoing rapid modernization, characters were often described as complex and difficult to master, particularly in relation to expanding education and administrative efficiency. These views gained further visibility in debates on schooling, literacy, and social participation.

More broadly, discussions of character reform were embedded in changing conceptions of education, governance, and national renewal. Writing was no longer seen solely as a vehicle of cultural continuity, but also as a practical instrument whose form and function were subject to reassessment under new social and technological conditions. From this perspective, debates over the future of Chinese characters reflected wider tensions between tradition and reform, elite cultural practices and mass education, and historical inheritance and modern institutional demands.

4.1 From Handwriting to Printing: Script Development amid Technological Change

Woodblock printing emerged in China during the Tang dynasty but reached technical maturity in the Song dynasty, when printed books became widespread. The typefaces known today as Songti and Fangsongti are commonly associated with the regular script style seen in Song dynasty printed texts.

During the Yuan, Ming, and Qing periods, the growth of vernacular literature and changes in literary style sharply increased demand for printed materials. As a result, character forms gradually diverged from handwritten calligraphic variation and followed a path of standardization and industrialization, forming the basis of modern print typography. By the mid-sixteenth century, the defining features of *Songti* were already established, and its extensive use during the Wanli period consolidated its status as the dominant print typeface.

In the Qing dynasty, *Songti* remained the standard printing font and was employed in major works such as the *Kangxi Dictionary*. After its transmission to Japan, this typeface came to be known as Minchō, reflecting a difference in nomenclature that is often noted in discussions of East Asian typographic traditions.

4.2 Simplification and Standardization of Modern Chinese Characters

The simplification of Chinese characters cannot be understood as a phenomenon that emerged solely in the modern period. Throughout the long history of character development, from the Qin–Han through the Tang–Song periods, various forms of simplification and graphical modification occurred. Some were motivated by practical considerations of writing efficiency, while others reflected aesthetic preferences. Wang Liuchun argues that simplified character forms already appeared in Shang oracle bone inscriptions, and that simplified characters resembling modern forms were widely used by the Western Han period (Wang, 1996, p. 22).

In the early twentieth century, attempts by the Nationalist government to implement character simplification were unsuccessful, largely due to limited administrative capacity, political instability, and the absence of broad social consensus. A decisive shift occurred in the mid-twentieth century, when the People's Republic of China introduced systematic simplification policies, resulting in the formal coexistence of simplified characters in mainland China and traditional characters in Hong Kong, Macau, and Taiwan.

Institutional efforts toward reform began with the establishment of the Chinese Script Reform Committee in 1952, followed by the drafting of a preliminary simplification scheme in 1953 based on commonly used simplified forms and regularized cursive variants. The initial proposal was set aside as insufficient, and subsequent discussions increasingly emphasized broader and more systematic approaches to simplification, including cursive-based principles and reductions in both character form and number. Anticipating a prolonged transition rather than immediate phoneticization, reform measures aimed to weaken traditional character structures and create internal conditions favorable to simplification, exemplified by cursive-based reductions in character forms and radicals.

After the founding of the People's Republic of China, the government promulgated two official schemes for character simplification. The currently implemented *General Table of Simplified Chinese Characters*, issued in 1964, contains a total of 2,235 characters (Yuan Zhongrui 2019, 3-5). On December 20, 1977, the *Second Scheme for the Simplification of Chinese Characters (Draft)* was released to the public, proposing 848 simplified characters. This scheme not only altered character forms but also reduced the number of distinct characters by allowing a single form to represent multiple traditional characters—for example, simplifying *ling* (龄) to *ling* (令), *bang* (帮) to *bang* (邦), and collapsing *fu* (副), *fu* (傅), and *fu* (腐) into *fu* (付). Characters such as *jie* (街) were simplified to 𠂇, *ting* (停) to 仃, and *wu* (舞) to 午.

However, this second simplification scheme met with strong opposition and was widely criticized. Scholars such as Zhou Youguang, Wang Li, and Hu Yuzhi argued that the proposed forms were disproportionate, visually unbalanced, and overly reductive, sacrificing the structural integrity and aesthetic character of Chinese writing in pursuit of simplicity. As a result, the scheme was implemented for only six months before being officially abandoned.

4.3 Chinese Character Input Methods

The digitalization of Chinese characters began in the 1980s with the development of computer-based input methods, marking a new phase in the long historical evolution of the writing system. Unlike alphabetic scripts, Chinese characters cannot be reduced to a limited set of elemental units. Character identification depends on complex combinations of components, spatial configuration, and stroke orientation, all of which pose particular challenges for digital encoding and input.

Within this context, shape-based input methods—that is, systems that require users to enter characters by decomposing them into structural components or stroke patterns—were developed as an alternative to phonetic approaches. Wubi is the most representative example of this category, as it encodes characters according to predefined component rules mapped onto keyboard keys. While such systems preserve a close relationship with character structure and visual form, their complexity limits efficiency and raises the learning threshold for users.

As a result, phonetic input methods, which rely on pronunciation rather than visual structure, have become dominant in everyday digital use. These systems offer greater ease and speed, particularly in large-scale text production. However, because Chinese is a logographic language characterized by extensive homophony and polyphony, phonetic input lacks a direct one-to-one correspondence between sound and character. Even with predictive algorithms and contextual disambiguation, homophonic errors remain an inherent feature of phonetic input.

More recent developments—including intelligent input systems, mobile-based handwriting recognition, and AI-assisted prediction—have further reshaped digital writing practices. These technologies reduce the cognitive burden of character recall while increasing input efficiency. At the same time, they raise new questions about users' long-term engagement with character forms. Heavy reliance on phonetic and predictive input may weaken structural awareness and visual memory, contributing to what is often described as character amnesia, whereas shape-based and handwriting-based inputs maintain a closer connection to the traditional principles of character construction.

Viewed from a historical perspective, digital input methods do not represent a rupture with earlier stages of Chinese writing, but rather a continuation of longstanding tensions between form, function, and usability. Just as earlier script reforms and standardization efforts sought to balance administrative efficiency with structural integrity, contemporary digital systems reflect new technological conditions under which Chinese characters continue to adapt while preserving their core logographic features.

CONCLUSION

This study demonstrates that the development of the Chinese writing system cannot be understood solely as a linguistic or graphic phenomenon. Rather, it must be situated within a broader cultural and historical context. As shown in the preceding analysis, Chinese writing evolved from early proto-symbolic practices to the emergence of mature writing during the Shang period, followed by long-term processes of standardization and diversification. Throughout this trajectory, structural form, communicative function, and social institutions interacted continuously rather than independently.

The findings indicate that writing played a central role in the construction and maintenance of political authority, ritual order, and systems of knowledge. Major transformations—such as the Qin standardization of script, the emergence of clerical script, and the later stabilization of regular script—are best understood not as abrupt ruptures, but as gradual reconfigurations. These changes, as discussed in the article's empirical sections, were driven by administrative demands, linguistic developments, and the material conditions of writing practices. Importantly, older and newer script forms often coexisted, producing a layered historical structure that enabled both continuity and adaptability.

By foregrounding the concept of cultural embeddedness, this study shows that the resilience of the Chinese writing system lies in its capacity to integrate linguistic representation with social practice and symbolic meaning. This integrative capacity helps explain how Chinese characters have remained in continuous use for more than three millennia, while accommodating significant changes in language, technology, and modes of communication.

At the same time, this study is subject to certain limitations. Its analysis focuses primarily on major historical phases and canonical forms of writing, leaving regional practices and less-documented transitional forms for future investigation. Further research could build on this framework by incorporating a more systematic comparison of regional variants, material media, and digital-era transformations of Chinese writing. Such studies would deepen our understanding of how writing systems adapt to changing social and technological environments.

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