A Comparative Study of the Origins of Chinese and Mesoamerican Writing

Dissertation

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1. Examples in the dissertation observe the following conventions:
   (1) The standard spelling of a linguistic form in a given language is in lowercase italics, such as *zhēn* and *ajaw*.
   (2) Phonetic values of signs in a writing system are in lowercase bold, such as **la-ka**.
   (3) A logographic value of a sign is in small capitals and bold, such as **AJAW** and **ACOL(LI)**.
   (4) A semantic complement or classifier is in small capitals, such as FISH and LOTUS_BUD.

2. Oracle-bone and bronze inscriptions in the dissertation are given in three parts:
   (1) Graph-to-graph transcription in traditional Chinese signs: In cases where there is no corresponding traditional Chinese sign, a transcription is created based on the elements in the compound. Missing grahs (e.g., due to damage) are indicated by □.
   (2) Pīnyīn 拼音: Question marks are used where the pronunciation is ambiguous or uncertain.
   (3) Reading in English: The inscriptions are translated in a straight-forward style. In order to make sentences complete, some supplementary information may be added in square brackets [ ].

3. Oracle-bone and bronze inscriptions in the dissertation are sorted uniformly in their order of appearance. Oracle-bone inscriptions are marked with underlined numbers, such as 1., 2., 3. … ; and bronze inscriptions are marked with numbers in angle brackets, such as <1>, <2>, <3> ….

4. With regard to the Chinese characters in the dissertation, traditional characters are used in early and traditional Chinese literature, such as oracle-bone and bronze inscriptions, bamboo manuscripts and Chinese classics, as well as in modern secondary literature.

5. Unless otherwise specified, the Old Chinese reconstruction in this dissertation follows Baxter and Sagart (2014, 2020), alternative reconstructions in the Gassmann and Behr (2011) and Zhèngzhāng Shàngfāng 鄭張尚芳 (2018) are given, where necessary, in footnotes.

6. Classical Chinese texts are cited by indicating the titles of the book and the quoted chapter name with juàn 卷 (fascicle). For example, *Shǐjì* 3 • *Yīn běnjì* 史記 3 • 殷本紀 refers to the chapter 'Yīn běnjì 殷本紀' in the third fascicle of the *Shǐjì* 史記.

7. The naming of Zapotec materials follows Marcus (2020), while other labels by Caso (1928, 1947), Zehnder (1977), Scott (1978), Whittaker (1980), and García Moll et al. (1986) are also provided in footnotes.

8. Epi-Olmec signs are labeled MS <number>, following Macri and Stark (1991, 1993) and Macri (2017a).

Abbreviations

Chinese

B	*Jiǎgǔwén héjí bǔbiān* 甲骨文合集補編
BS	*Bāoshān chǔmù* 包山楚簡
H	*Jiǎgǔwén héjí* 甲骨文合集
HD	*Yīnxū huāyuánzhuāng dōngdì jiǎgǔ* 殷墟花園莊東地甲骨
T	*Xiǎotún nándì jiǎgǔ* 小屯南地甲骨
JB	*Yīnxū wénzì jiǎbiān* 殷虛文字甲編
JC	*Yīnzhōu jīnwén jíchéng* 殷周金文集成
SD	*Sāndài jíjīn wéncún* 三代吉金文存
WJC	*Shāngzhōu qīngtóngqì míngwén jì túxiàng jíchéng* 商周青銅器銘文暨圖像集成
Y	*Yīngguó suǒcáng jiǎgǔjí* 英國所藏甲骨集

Summary in German

Diese Studie befasst sich mit den frühen chinesischen und mesoamerikanischen graphischen Aufzeichnungssystemen. Frühe chinesische graphische Aufzeichnungssysteme beziehen sich auf (a) Materialien, die den Orakelknocheninschriften vorausgehen und zu ihnen führen, (b) Orakelknocheninschriften und (c) Bronzeinschriften aus der Shāng- und Westlichen Zhōu-Zeit, während sich frühe mesoamerikanische graphische Aufzeichnungssysteme auf olmekische Graphien sowie zapotekische, epi-olmekische (bzw. isthmische) und Maya-Schriftsysteme.

Diese Studie umfasst fünf Kapitel. Das **erste Kapitel** ist eine Einführung in das Schreiben, bestehend aus zwei Abschnitten. Der erste Abschnitt befasst sich mit der Struktur und dem Umfang der Studie. In diesem Abschnitt befindet sich eine kurze Einführung in die frühen chinesischen und mesoamerikanischen graphischen Aufzeichnungssysteme. Der folgende Abschnitt konzentriert sich auf die Definition von Schrift. Der letzte Abschnitt konzentriert sich auf die kontroversen Aspekte einer weiten Definition von Schrift.

Im **zweiten Kapitel** wird der aktuelle Stand der Forschung zur Entstehung von Schrift in vier primären Regionen nacheinander erörtert, nämlich Mesopotamien, Ägypten, China und Mesoamerika. Die Diskussion konzentriert sich auf die bisherige wissenschaftliche Forschung, hauptsächlich in Bezug auf beispielsweise (a) die Datierung des Ursprungs der Schrift, (b) die Sprache hinter dem Schriftsystem und (c) die Vorläufer und Entwicklung der Schrift. In den Abschnitten zur frühen chinesischen und mesoamerikanischen Schrift wird auch eine kurze Geschichte der Forschung beispielsweise zu Orakelknocheninschriften und zur Maya-Schrift diskutiert. Der letzte Abschnitt dieses Kapitels widmet sich aktuellen Perspektiven auf die Kontexte des Schreibens und auf die treibende Kraft dahinter in Mesopotamien, Ägypten, China und Mesoamerika.

Das **dritte Kapitel** konzentriert sich auf die Natur der Materialien, die den Orakelknocheninschriften vorausgehen und zu ihnen führen, und insbesondere auf die neolithischen Graphiken. Die umstrittensten neolithischen Graphien, wie etwa die Graphien der Jiǎhú 賈湖-, der Dàwènkǒu 大汶口- und der Liángzhǔ 良渚-Kultur sowie die Graphien der Xià- und frühen Shāng-Kultur, werden im Detail besprochen. Die Diskussion umfasst frühere Studien und ihre Probleme, und die Natur der neolithischen Graphien wird gezeichnet.

Das **vierte Kapitel** befasst sich nacheinander mit der Natur der frühen graphischen Aufzeichnungssysteme in Mesoamerika, nämlich der olmekischen Graphien sowie der zapotekischen, epi-olmekischen (bzw. isthmischen) und Maya-Schriftsysteme. Die Diskussion betrifft hauptsächlich (a) die frühesten Instanzen, (b) die dahinterliegende Sprache, (c) die Natur des Systems und (d) die Syntax dieser Systeme. Auf dieser Grundlage werden die Probleme der mesoamerikanischen Schriftforschung hervorgehoben und mögliche Erklärungen für die Erfindung und Entwicklung der Schrift in Mesoamerika abgeleitet.

Das **fünfte Kapitel** vergleicht die Ursprünge der frühen chinesischen und mesoamerikanischen Schrift und ist in vier Abschnitte unterteilt. Die Schrift als Erfindung wird im ersten Abschnitt besprochen. Im zweiten Abschnitt wird die Natur der frühen chinesischen und mesoamerikanischen Schrift erörtert. Der dritte Abschnitt konzentriert sich auf den ursprünglichen Zweck bzw. die ursprüngliche Funktion der Schrift. Der vierte Abschnitt liefert eine erneute Diskussion über des Begriffs *stimulus diffusion*. Der **Abschluss** der Dissertation folgt auf das letzte Kapitel.

1. Introduction

This comparative study is aiming at exploring the nature, origins, circumstances, and factors affecting the origin, of early writing systems in China and Mesoamerica. In other words, it focuses on addressing the following questions: What is writing? When and where did writing first appear? Why did writing appear? How was writing invented? To understand the characteristics and origin of early writing systems, previous studies are far from sufficient, which leaves considerable research space for the comparative study of early writing systems of the Circumpacific region.

1.1 Structure and Scope

1.1.1 Structure

This study comprises five chapters. The **first chapter** is an introduction to writing, consisting of two sections. The first section concerns the structure and scope of the study, the main foci of which are early Chinese and Mesoamerican graphic recording systems. Early Chinese graphic recording systems refer to (a) materials preceding and leading down to the oracle-bone inscriptions, (b) oracle-bone inscriptions and (c) bronze inscriptions of the Shāng and Western Zhōu periods, while early Mesoamerican graphic recording systems refer to Olmec graphs, Zapotec, epi-Olmec (or Isthmian[1]), and Maya writing systems.

A brief introduction to these recording systems in both areas can be found in this section. The following section focuses on the definition of writing. Previous studies on the nature of writing will first be reviewed, including the perspectives of general linguists and specialists on writing systems as well as specialists of Chinese and Mesoamerican writing. Then come definitions of writing, iconography and notation, which serve to distinguish writing from the other two graphic recording systems, and thereby form a basis for judging the nature of materials preceding the oracle-bone inscriptions (especially Neolithic graphs) and Olmec graphs in subsequent research. The next section focuses on the controversial aspects of a broad definition of writing, arguing that the research tradition and the focus of study of Chinese and Mesoamerican scholars would appear to be responsible for their preference of

[1] Scholars, such as Houston and Coe, prefer “Isthmian”, which indicates the general region of the script, for these inscriptions instead of “epi-Olmec”, which indicates the unproven assumption that these inscriptions derive from Olmec (Houston and Coe 2003: 159; Houston 2004: 296-297). But other scholars believe that the latter term is more reasonable, since no epi-Olmec text is known to come from the Isthmus of Tehuantepec, and no trace of the epi-Olmec cultural tradition has been found in the Isthmus. Moreover, the archaeological cultures of the area descended from the Olmecs, and the script may descend from an Olmec hieroglyphic system (such as Justeson 2012, 2018: 63).

a broader definition.

The **second chapter** will discuss the current status of research on the origin of four early writing systems, that is, Mesopotamian, Egyptian, Chinese and Mesoamerican. In the section on Mesopotamia, the discussion is largely focused on the research of Mesopotamian specialists, mainly concerning (a) the dating of the origin of writing, (b) the language behind the writing system, and (c) the precursors and development of Mesopotamian writing. The section on early Egyptian writing discusses the research of Egyptian specialists, focusing on the same thematic areas, and, furthermore, on the controversy swirling around the earliest instances of Egyptian writing. The section on early Chinese writing begins with a brief history of Chinese studies on the origin of Chinese writing from the beginning of the 20th century. Then comes a research history of oracle-bone inscriptions in both Chinese and Western academia, followed by current perspectives on the date of origin of oracle-bone inscriptions. In terms of early Mesoamerican writing, the discussion consists of a brief history of research and a summary of current research on the Olmec graphs, and on the Zapotec, epi-Olmec and Maya writing. The last section of this chapter is devoted to current perspectives on the contexts of writing and on the driving force behind it in Mesopotamia, Egypt, China and Mesoamerica.

The **third chapter** concentrates on the nature of materials preceding and leading down to the oracle-bone inscriptions, and on the Neolithic graphs in particular. The most controversial Neolithic graphs, that is, the graphs found in the Jiǎhú 賈湖, the Shuāngdūn 雙墩, the Lóngqiúzhuāng 龙虯莊 Culture of the Huái River basin; the Yǎngsháo 仰韶, the Táosì 陶寺, the Wángwānsānqī 王灣三期, the Lóngshān 龍山, and the Dàwènkǒu 大汶口 Culture of the Yellow River basin and the Liángzhǔ 良渚 Culture of Yangtze River basin, as well as the graphs found in the Xià and Early Shāng Culture, will be discussed in detail, including previous studies and their problems. It will be argued that: (1) Neolithic graphs are not writing but rather notation or iconography, (2) the earliest attested instances of Chinese writing appears in the Early Shāng period (ca. 1600-1300 BC), and (3) that it cannot be ruled out that there are other forms of writing, written on perishable materials, that are earlier than the Early Shāng period.

The **fourth chapter** will touch on the nature of early graphic recording systems in Mesoamerica. With regard to the Olmec, the Cascajal Block, the cylinder seal and engraved greenstone unearthed in San Andrés, and Monument 13 of La Venta will be discussed in detail. In the section on the Zapotec system, the discussion mainly focuses on the language of the inscriptions, the dating of San José Mogote Monument 3, and the Zapotec calendar and syntax. The section on the epi-Olmec system discusses the

corpus of the script, the epi-Olmec calendar, the reading order and syntax. In the section on the Maya system, the discussion mainly addresses the language of the script, the earliest instances, and the nature and syntax of Maya writing.

On this basis, the problems in Mesoamerican research will be underscored, and the following conclusions will be drawn: (1) There is still no solid evidence for 'Olmec writing'. (2) The earliest attested instance of Mesoamerican writing is the Zapotec system in the Late Preclassic (ca. 500-200 BC), arising probably in the 4th century BC. (3) One possible explanation for the invention and development of writing in Mesoamerica is that a single archaic script emerged somewhere in southern Mesoamerica between ca. 500 and 300 BC. The abrupt emergence of Zapotec, epi-Olmec and Maya writing is perhaps to be ascribed to this archaic script or descendants of the same.

The **fifth chapter** compares the origins of early Chinese and Mesoamerican writing, and is divided into four sections. Writing as an invention will be firstly discussed in the first section. At the time when Chinese and Mesoamerican writing systems first appeared, they were already elaborated systems. An evolutionary relationship to previous graphic recording systems cannot be demonstrated, so writing appears to be an invention rather than the end product of a lengthy period of development.

The second section discusses the nature of early Chinese and Mesoamerican writing. Sign types of oracle-bone inscriptions and early Mesoamerican writing will be discussed in detail. It will be argued that oracle-bone inscriptions consist of logograms, secondary logograms and pseudo-logograms. Early Mesoamerican writing consists of logograms and syllabograms, or more specifically, consists of syllabograms and morphograms.

The third section concentrates on the original purpose or function of writing. After analyzing the different forms of Chinese writing in the pre-Qín period, it will be argued that the earliest Chinese writing has a close connection with divination, with which Shāng kings legitimize their kingship and administration. In the Shāng and Western Zhōu periods, writing was heavily used in the context of divination and ritual. From the Spring and Autumn period on, the purpose of writing became decidedly more secular. By the middle and late Warring States period at the latest, writing was widely used for literary writing. Moreover, based on the analysis of early Mesoamerican writing in different periods, it will be argued that the preparations and performance of ritual practices and sacrifices are the main contents of these texts. In other words, early Mesoamerican writing was used heavily in the context of ritual and ceremony. It is very likely that these texts were used for display to show the power of the ruler and to legitimize and facilitate the

ruler's administration.

The fourth section is a renewed discussion on stimulus diffusion. The possible interactions between (a) Mesopotamia and Egypt, (b) Mesopotamia and China, and (c) China and Mesoamerica will be discussed. Writing systems in Mesopotamia, Egypt, China and Mesoamerica were invented independently, but the possibility that Egypt and China received the idea of writing from Mesopotamia while Mesoamerica received the idea of writing from China, cannot be ruled out. The **conclusion** of the dissertation follows the last chapter.

1.1.2 Scope

The scope of this study consists of early Chinese graphic recording systems (that is, materials preceding the oracle-bone inscriptions, oracle-bone and bronze inscriptions of Shāng and Western Zhōu periods, and other pre-Qín materials) and early Mesoamerican graphic recording systems (that is, Olmec, Zapotec, epi-Olmec and Maya writing).

1.1.2.1 Early Chinese graphic recording systems

1. Materials preceding the oracle-bone inscriptions

Materials preceding the oracle-bone inscriptions in this study refer to archaeologically discovered carvings and painted graphs during the Neolithic period in China. These unearthed graphs cover a long period of time, from the Jiǎhú 賈湖 Culture (ca. 7000-5500 BC) to the Xiǎoshuāngqiáo 小雙橋 site (ca. 1435-1412 BC) of the Early Shāng Culture.[1] The vast majority of the graphs occur singlely, written on various media, such as bones, stones, wood and pottery, and only a few have several graphs on a single piece, for example, the block pot with four graphs found at Chénghú 澄湖 (ca. 2500-2000 BC) and the pottery fragment with 11 graphs found at Dīnggōng 丁公 (ca. 2200-2100 BC). The quantity varies from one site to another: most of them have only a few dozen pieces excavated, such as one from Táosì 陶寺 (ca. 2600-2000 BC), and seven from Wángchénggǎng 王城崗 (ca. 2600-1900 BC), while some sites have yielded over one hundred more in number: for instance, 113 at Bànpō 半坡 (ca. 4700-4100 BC) and ca. 600 at Shuāngdūn 雙墩 (ca. 5300-4700 BC).[2]

[1] It should be noted that since oracle-bone inscriptions are generally believed to appear first in the Late Shāng period, the materials before Late Shāng are all categorized as "materials preceding oracle-bone inscriptions" in the study. These materials are discussed in Chapter 3, although according to my study, oracle-bone inscriptions had already appeared at Èrlǐgǎng 二里岗 of the Early Shāng period (for details see 3.4 and 3.5).

[2] For details of materials preceding oracle-bone inscriptions see the discussion in Chapter 3.

2. Oracle-bone inscriptions (*jiǎgǔwén* 甲骨文)

The term 'oracle-bone inscription' refers to the texts inscribed on bones and shell in the Late Shāng period (ca. 1300-1050 BC), covering the historical period from kings Pán Gēng 盤庚 and Wǔ Dīng 武丁 to kings Dì Yǐ 帝乙 and Dì Xīn 帝辛 and generally called *jiǎgǔwén* 甲骨文 (or *jiǎgǔ bǔcí* 甲骨卜辭, *jiǎgǔ kècí* 甲骨刻辭, *yīnqì* 殷契, *guījiǎ wénzì* 龜甲文字, *guījiǎ shòugǔ wénzì* 龜甲獸骨文字) by Chinese epigraphers. Such inscriptions, first found in 1899, belong to the first phase of China's writing system, which was primarily used to record Late Shāng divinations. According to the statistics, at least 161,710 pieces of oracle-bones (Shāng and Western Zhōu) have been unearthed,[1] while the vast majority (over 150,000) are from the Late Shāng period, especially from the reign of King Wǔ Dīng 武丁. The earliest secure instances of oracle-bone writing are attested at Èrlǐgǎng 二裏崗 (ca. 1600-1400 BC, Early Shāng).[2]

(1) The inscription (*bǔcí* 卜辭)

A complete oracle-bone inscription consists of the following parts: *qiáncí* 前辭 'preface' (also known as *xùcí* 敘辭, *xùcí* 序辭 or *shùcí* 述辭), *mìngcí* 命辭 'charge' (also known as *zhēncí* 貞辭 or *wèncí* 問辭), *zhāncí* 占辭 'prognostication' (also known as *guǒcí* 果辭), and *yàncí* 驗辭 'verification'.[3] These elements are not all present in every case. A large number of inscriptions lack verifications, and some lack a preface or prognostication and verification. The most common ones include the preface and charge.[4]

① The preface (*qiáncí* 前辭)

In most cases, the preface records the date (the 60-day *gānzhī* 干支 cycle;[5] **Table 1.1-1**) on which the divination is performed and the name of the diviner. The diviners most often named are: Què 㱿,[6] Bīn 賓,[7] Zhēng 爭,[8] Gèn 亘[9]

[1] Gě Liàng 葛亮 2019: 54. According to Hú Hòuxuān 胡厚宣, more than 154,604 pieces of Shāng oracle-bones had been unearthed by 1984 (Hú Hòuxuān 胡厚宣 1984: 22) .

[2] For more details see the discussion in **3.4.2**.

[3] Chén Wěizhàn 陳煒湛 1987: 42；Chén Mèngjiā 陳夢家 1988: 43；Gāo Míng 高明 1996: 238; Wáng Yǔxìn 王宇信 and Wèi Jiànzhèn 魏建震 2010: 82；Wáng Yǔxìn 王宇信 2015: 103; Wú Hàokūn 吳浩坤 and Pān Yōu 潘悠 2018: 71; Huáng Dékuān 黃德寬 2019: 131.

[4] Keightley 1978: 28; Chén Wěizhàn 陳煒湛 1987: 42; Gāo Míng 高明 1996: 238; Hú Hòuxuān 胡厚宣 2002: 919-920; Wáng Yǔxìn 王宇信 and Wèi Jiànzhèn 魏建震 2010: 83; Shěn Zhīyú 沈之瑜 2011: 26.

[5] *Gānzhī* 干支 (also known as the sexagenary cycle, or Stems and Branches) refers to a dyadic cycle of sixty terms, each corresponding to one day or year. It was the most common method of numbering days and years in ancient China.

[6] For examples of the diviner Què 㱿 see the discussion of H 667 front, H 1534 front, H 6442, H 6626, and H 13619 in **5.2.1**; and H 13926 in **5.3.1**.

[7] For examples of the diviner Bīn 賓 see the discussion of H 223 and H 14034 in **5.2.1**; and H 16696 in **5.3.1**.

[8] For examples of the diviner Zhēng 爭 see the discussion of H 787, H13626 in **5.2.1**; and H 14005, H 16696 in **5.3.1**.

[9] For examples of the diviner Gèn 亘 see the discussion of H 10228 front in **5.2.1**;

(Period I); Dà 大，Lǚ 旅，Xíng 行，Jí 即，Yǐn 尹，Chū 出[1] (Period II); and Hé 何[2] (Period III). In Period V, the only diviner recorded in the inscription is the king.[3] In all five periods, the basic formula of the preface is：

XX *bǔ* 卜 X *zhēn* 貞

Crack-making on the day XX (the *gānzhī* cycle), X (the diviner) divined: …'[4]

In some cases, the place of divination, the month, and the number of the sacrificial cycle, especially in Period V, may also be recorded after the charge, and this is called the 'postface' by some scholars, such as Keightley (1978).[5]

② **The charge** (*mìngcí* 命辭)

The charge records the topic of the divination inscription. The topic of the inscription includes, but is not limited to, the following aspects:[6] sacrifices to ancestors,[7] agriculture,[8] military campaigns,[9] sickness,[10] hunting,[11] child-bearing and childbirth,[12] weather,[13] excursions,[14] distress or trouble[15] and the outlook for the night and the next ten-day week (*xún* 旬).[16] In the early periods, the topics of the inscriptions touched on a wide variety of aspects of royal (and noble) life,[17] but by Period V, the topics were sharply reduced primarily to divinations about sacrifice, the outlook for the ten-day week, and hunting.

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[1] For examples of the diviner Chū 出 see the discussion of H 22536 in **5.2.1**;

[2] For examples of the diviner Hé 何 see the discussion of B 9975 and H 28440 in **5.2.1**.

[3] For examples see the discussion of H 36975 in **5.2.1**.

[4] For examples see discussions of B 9975, H 223, H 667 front, H 787, H 1534 front, H 6442, H 13619, H 13626, H 14034, H 23786, H 28440, and H 36975 in **5.2.1**; and H 1336 front, H 9650, H 10228 front, H 13926, H14005, and H 16696 in **5.3.1**.

[5] For examples of the postface see discussions of H 9650, H 9666, H 13926, H14005, and H 16696 in **5.3.1**

[6] For details see the discussion in **5.3.1**. For more discussions of the topic of the divination inscription see also Keightley 1978: 33-35; Chén Mèngjiā 陳夢家 1988: 42; Wú Hàokūn 吳浩坤 and Pān Yōu 潘悠 2018: 74-75.

[7] For examples of inscriptions on sacrifices to ancestors see H 300, H 1534 front, H 19820, Y 1864 in **5.2.1**; and H 1336 front in **5.3.2**.

[8] For examples of inscriptions on agriculture see H 33242 H 33243 in **3.2.1**; H 22536, H 36975 in **5.2.1**; and H 9650 and H 9666 in **5.3.1**.

[9] For examples of inscriptions on military campaigns see H 6194, H 6442, H 6596, H 6626, H 6946, H 33036, and Y 566 in **5.2.1**.

[10] For examples of inscriptions on sickness see H 456 front, H 1748, H 11506, H 13619, H 13626, H 13683, H 13689, and Y 1124 in **5.2.1**.

[11] For examples of inscriptions on hunting see H 223, H 7894, H 10475, H 28440 in **5.2.1**; B 1152, H 10228 front, and H 10246 in **5.3.1**.

[12] For examples of inscriptions on child-bearing and childbirth see H 14034 front in **5.2.1**; and H 13926 and H 14005 in **5.3.1**.

[13] For examples of inscriptions on weather see H 156, H 667 front, H 10020, H 12870, H 12921 back, and H 21016 in **5.2.1**.

[14] For examples of inscriptions on excursions see H 787 and H 23786 in **5.2.1**.

[15] For examples of inscriptions on distress or trouble see H 6668 front, H 6928 front, and H 7093 in **5.2.1**.

[16] For examples of inscriptions on the outlook for the night and the next ten-day week see B 9975 in **5.2.1**; and H 16696 in **5.3.1**.

[17] Inscriptions about nobles account for only a very small part.

1. *Jiǎzǐ* 甲子	2. *Yǐchǒu* 乙丑	3. *Bǐngyín* 丙寅	4. *Dīngmǎo* 丁卯	5. *Wùchén* 戊辰	6. *Jǐsì* 己巳	7. *Gēngwǔ* 庚午	8. *Xīnwèi* 辛未	9. *Rénshēn* 壬申	10. *Guǐyǒu* 癸酉
11. *Jiǎxū* 甲戌	12. *Yǐhài* 乙亥	13. *Bǐngzǐ* 丙子	14. *Dīngchǒu* 丁丑	15. *Wùyín* 戊寅	16. *Jǐmǎo* 己卯	17. *Gēngchén* 庚辰	18. *Xīnsì* 辛巳	19. *Rénwǔ* 壬午	20. *Guǐwèi* 癸未
21. *Jiǎshēn* 甲申	22. *Yǐyǒu* 乙酉	23. *Bǐngxū* 丙戌	24. *Dīnghài* 丁亥	25. *Wùzǐ* 戊子	26. *Jǐchǒu* 己丑	27. *Gēngyín* 庚寅	28. *Xīnmǎo* 辛卯	29. *Rénchén* 壬辰	30. *Guǐsì* 癸巳
31. *Jiǎwǔ* 甲午	32. *Yǐwèi* 乙未	33. *Bǐngshēn* 丙申	34. *Dīngyǒu* 丁酉	35. *Wùxū* 戊戌	36. *Jǐhài* 己亥	37. *Gēngzǐ* 庚子	38. *Xīnchǒu* 辛丑	39. *Rényín* 壬寅	40. *Guǐmǎo* 癸卯
41. *Jiǎchén* 甲辰	42. *Yǐsì* 乙巳	43. *Bǐngwǔ* 丙午	44. *Dīngwèi* 丁未	45. *Wùshēn* 戊申	46. *Jǐyǒu* 己酉	47. *Gēngxū* 庚戌	48. *Xīnhài* 辛亥	49. *Rénzǐ* 壬子	50. *Guǐchǒu* 癸丑
51. *Jiǎyín* 甲寅	52. *Yǐmǎo* 乙卯	53. *Bǐngchén* 丙辰	54. *Dīngsì* 丁巳	55. *Wùwǔ* 戊午	56. *Jǐwèi* 己未	57. *Gēngshēn* 庚申	58. *Xīnyǒu* 辛酉	59. *Rénxū* 壬戌	60. *Guǐhài* 癸亥

Table 1.1-1 The *gānzhī* 干支 table

③ The prognostication (*zhāncí* 占辭)

After the charge had been proposed, the bone or shell was burned. Then, the crack was numbered and read, and a prognostication made (usually by the king) and recorded. The standard formula of the prognostication is:

> 王占曰…
>
> *Wáng zhān yuē…*
>
> The king, reading the crack, said:…/ The king prognosticated and proclaimed:…'[1]

In Period I, the prognostication may be auspicious or inauspicious, and in some cases it can be very elaborate. The inscriptions on the front of H 14002 (discussed in this chapter) are a good case in point. The king divined for the childbirth of Lady Hǎo 好, and the elaborate prognostication indicated that it was good for Lady Hǎo 好 to give birth on the day *Dīngyǒu* 丁酉 or *Gēngzǐ* 庚子 (the 34th and 37th in the *gānzhī* cycle). But the prognostication became brief and nonspecific by Period V, consisting only of *jí* 吉 'auspicious', *dàjí* 大吉 'greatly auspicious' or *hóngjí* 弘吉 'extremely auspicious', just like crack notations[2].

④ The verification (*yàncí* 验辭)

A verification records what happened after the prognostication has been made. Verifications usually include the affirming word *yǔn* 允, "really, truly; indeed" and in most cases the recorded verification will confirm the accuracy of the prognostication[3].

(2) The crack number (*zhàoxù* 兆序) and crack notation (*zhàojì* 兆記)

Zhàoxù 兆序 'crack number' (from 1 to 10) numbers the sequence of the crack. They are generally placed to the right or left of the upper end of the vertical crack, on the same side, right or left, as the transverse crack; occasionally, it is placed at the end of the transverse crack. When the grooves of an engraved sign actually 'straddled a crack' (*fànzhào* 犯兆), the crack numbers were commonly erased and sometimes placed elsewhere, which indicates that the crack numbers were engraved before the charge was carved.[4] For example, the signs **ʔi[t]* 一 'one' (*yī* 一); **ni[j]-s* 二 'two' (*èr*

[1] For examples see discussions of H 14034 and H 36975 in **5.2.1**.

[2] For examples of prognostication in Period V see discussions of H 36975 in **5.2.1**.

[3] For examples see discussions of H 12921 back in **5.2.1**.

[4] Zhāng Bǐngquán 張秉權 1956-1957; Keightley 1978: 36-37; Chén Wěizhàn 陳煒湛 1987: 43; Wáng Yǔxìn 王宇信 and Wèi Jiànzhèn 魏建震 2010: 77; Shěn Zhīyú 沈之瑜 2011: 67; Wáng Yǔxìn 王宇信 2015: 101-103; Wú Hàokūn 吳浩坤 and Pān Yōu 潘悠 2018: 76.

二); *s.rum 三 'three' (*sān* 三); *s.li[j]-s 亖 'four' (*sì* 四); *C.ŋˤaʔ 𠄡, 'five' (*wǔ* 五); and *k.ruk 介 'six' (*liù* 六) on the front of H 14002 (**Fig. 1.1-5**) and 11506 (**Fig. 1.1-2**) are crack numbers.

Zhàojì 兆記 (also known as *zhàocí* 兆辭, *zhàoyǔ* 兆語 or *shùyǔ* 述語) 'crack notation' is the interpretation of the crack,[1] for example, *jí* 吉 'auspicious', *hóngjí* 弘吉 'extremely auspicious', *dàjí* 大吉 'greatly auspicious', *èr gào* 二告, *xiǎo gào* 小告.[2] They are usually carved to the right or left of the bottom end of the vertical crack on the same side, right or left, as the transverse crack.[3] For instance, the signs **ni[j]-s *kˤuk/*kˤuk-s* 二告 (*èr gào* 二告) on the H 14043 front (**Fig. 1.1-1**) and 14002 front (**Fig. 1.1-5**) are crack notations.

(3) Reading Order

Most often, the individual oracle-bone inscription was carved vertically. The primary reading order is from top to bottom, from left to right or right to left[4]. To be more specific: (1) If the inscription was carved from the middle of the plastron to the edge, the inscription on the right plastron should be read from top to bottom, left to right, while the inscription on the left plastron should be read from top to bottom, right to left. (2) If the inscription was carved from the edge of the plastron to the middle, the inscription on the right plastron should be read from top to bottom, right to left, while the inscription on the left plastron should be read from top to bottom, left to right.

For example, the two inscriptions on the front of H 14043 (**Fig. 1.1-1**) were carved vertically from the middle of the plastron to the edge, so the inscription ① on the right plastron is read from top to bottom, left to right, and the inscription ② on the left plastron is read from top to bottom, right to left. Moreover, the two inscriptions on H 11506 (**Fig. 1.1-2**) were carved vertically from the edge of the plastron to the middle, so the inscription ① on the right plastron is read from top to bottom, right to left, and the inscription ② on the left plastron is read from top to bottom, left to right.

---

1 Keightley 1978: 40.

2 The meaning of *èr gào* 二告 and *xiǎo gào* 小告 is unclear.

3 Keightley 1978: 121; Chén Wěizhàn 陳煒湛 1987: 43; Wáng Yǔxìn 王宇信 and Wèi Jiànzhèn 魏建震 2010: 81-82; Shěn Zhīyú 沈之瑜 2011: 67; Wáng Yǔxìn 王宇信 2015: 103; Wú Hàokūn 吳浩坤 and Pān Yōu 潘悠 2018: 76.

4 For discussions of the reading order of the oracle-bone inscriptions see Yán Yīpíng 嚴一萍 1978: 983-1085; Chén Wěizhàn 陳煒湛 1987: 46-51; Zhāng Bǐngquán 張秉權 1988; Gāo Míng 高明 1996: 242-244; Hú Hòuxuān 胡厚宣 2002: 930; Wáng Yǔxìn 王宇信 and Wèi Jiànzhèn 魏建震 2010: 83-93; Wáng Yǔxìn 王宇信 2015: 104-110; Wú Hàokūn 吳浩坤 and Pān Yōu 潘悠 2018: 75-76.

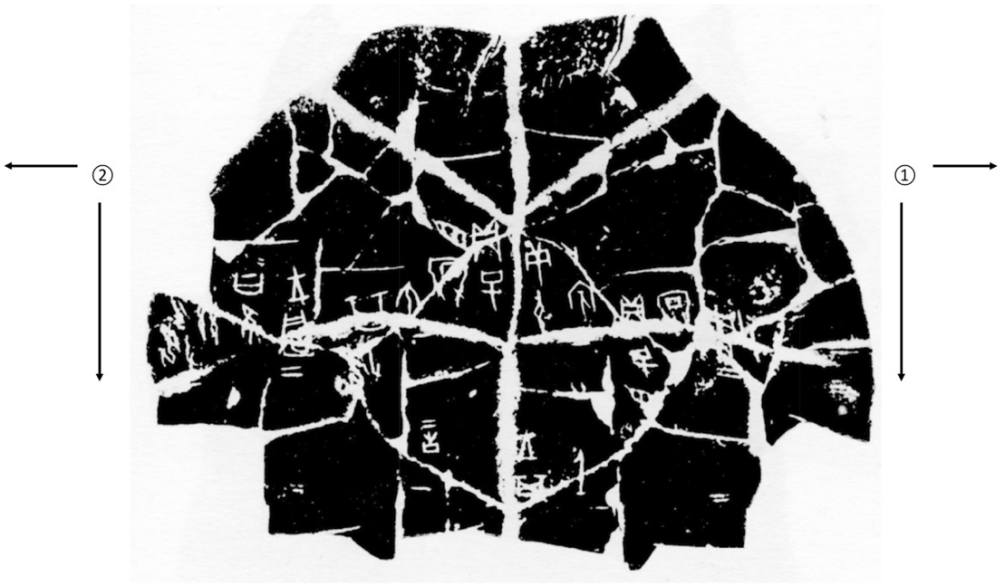

Fig. 1.1-1 The reading order of H 14043 front

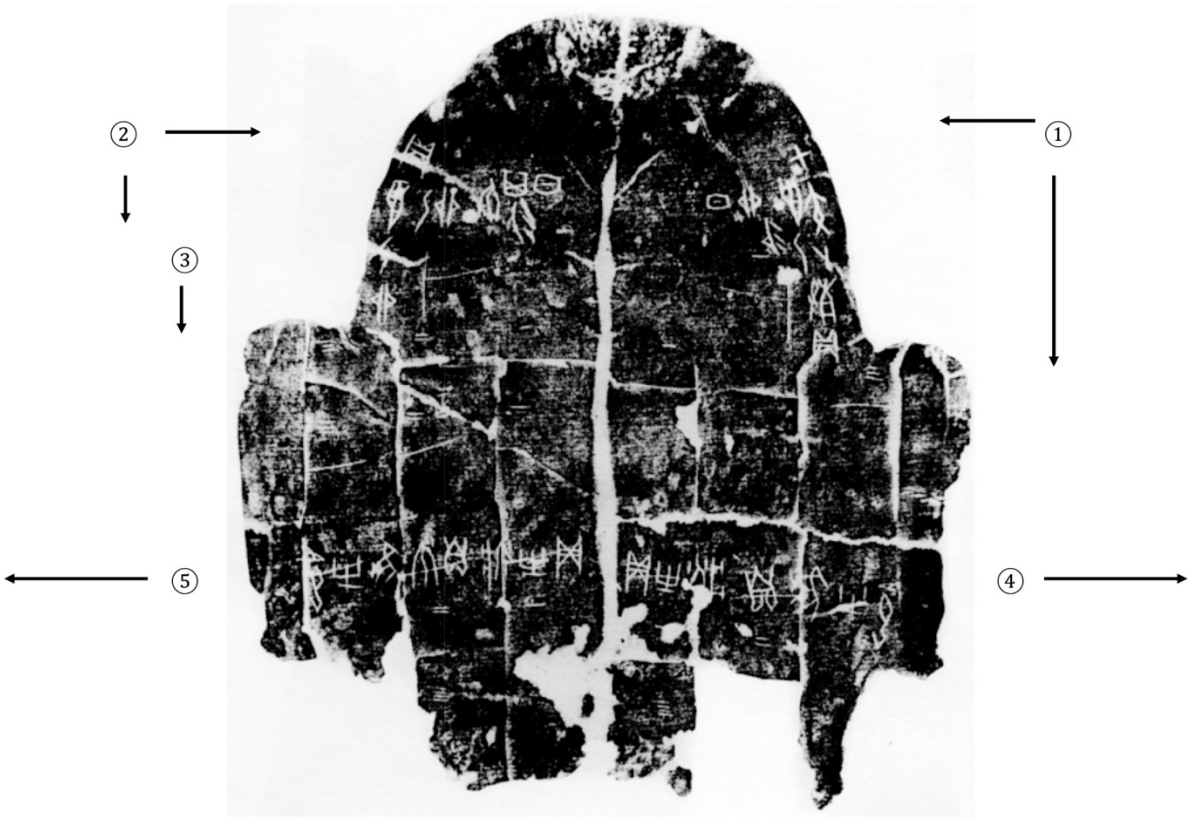

Fig. 1.1-2 The reading order of H 11506

Moreover, the oracle-bone texts which are not divinatory in content also follow the similar reading order. For example, the text on the Zǎi Fēng *gǔ* 宰豐骨[1] (**Fig. 5.3.1-1**) is read from top to bottom, right to left. Another example is H 37986 (**Fig. 1.1-3**), which records the same *gānzhī* cycle as displayed in **Table 1.1-1**. The text is read from top to bottom, right to left.

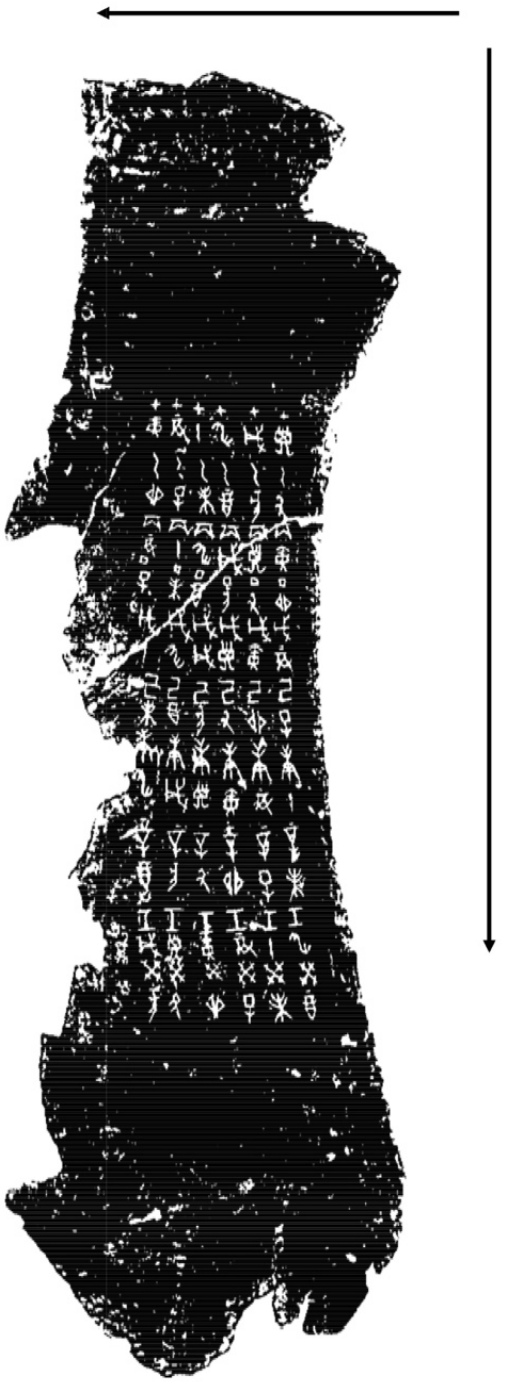

Fig. 1.1-3
The reading order of H 37986

[1] For discussion of the text on Zǎi Fēng *gǔ* 宰豐骨 see **5.3.1**.

But in some cases, the individual oracle-bone inscription was carved horizontally. If the inscription is carved from the middle of the plastron to the edge, the inscription on the right plastron should be read from left to right, while the inscription on the left plastron should be read from right to left. But, if the inscription is carved from the edge of the plastron to the middle, the inscription on the right plastron should be read from right to left, while the inscription on the left plastron should be read from left to right. For instance, the two inscriptions on H 11506 (**Fig. 1.1-2**) were carved horizontally from the middle of the plastron to the edge. The inscription ④ on the right plastron should be read from left to right, while the inscription ⑤ on the left plastron should be read from right to left.

If multiple inscriptions are inscribed on a single scapula, these inscriptions will be read primarily from bottom to top. If we take the five inscriptions on H 36975 (**Fig. 1.1-4**) as an example, these five inscriptions should be read from bottom to top, that is, from ① to ⑤, and for each individual inscription they should be read from top to bottom, right to left.[1]

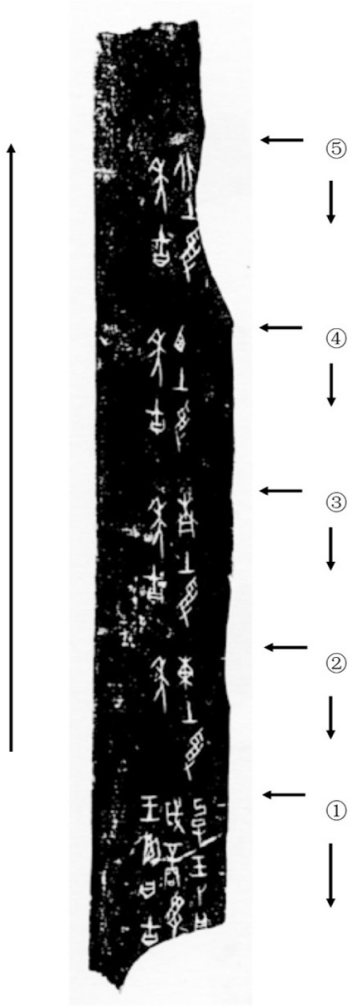

Fig. 1.1-4
The reading order of H 36975

[1] For inscriptions on H 36975 see the discussion in **5.2.1**.

The two inscriptions on the front of H 14002 (Period I, **Fig. 1.1-5**) were carved vertically from the edge of the plastron to the middle, so the inscription ① on the right plastron is read from top to bottom, right to left, and the inscription ② on the left plastron is read from top to bottom, left to right. The inscription ① shows a good example of what a complete inscription looks like:

Fig. 1.1-5 The reading order of the front of H 14002

01.	①	【Preface:】	甲申卜，㱿貞:
		【Charge:】	婦好娩，嘉?
		【Prognostication:】	王占曰: 其唯丁娩，嘉。其唯庚娩，弘吉。
		【Verification:】	三旬又一日，甲寅娩，不其嘉，唯女。
	②	【Preface:】	甲申卜，㱿貞:
		【Charge:】	婦好娩，不其嘉?
		【Verification:】	三旬又一日，甲寅娩，允不嘉，唯女。

①	【Preface:】	*Jiǎshēnbǔ, Què zhēn:*
	【Charge:】	*Fù Hǎo miǎn, jiā?*
	【Prognostication:】	*Wáng zhān yuē: Qí wéi dīng miǎn, jiā. Qí wéi gēng miǎn, hóng jí.*
	【Verification:】	*Sānxún yòu yīrì, Jiǎyín miǎn, bù qí jiā, wéi nǚ.*

②	【Preface:】	*Jiǎshēn bǔ, Què zhēn:*
	【Charge:】	*fù hǎo miǎn, bù qí jiā?*
	【Verification:】	*Sān xún yòu yīrì, Jiǎyín miǎn, yǔn bù jiā, wéi nǚ.*
①	【Preface:】	Crack-making on the day *Jiǎshēn* 甲申 (the 21st in the *gānzhī* cycle), Què 殼 divined:
	【Charge:】	Lady Hǎo 好 is going to give birth; [will it be] good?
	【Prognostication:】	The king prognosticated and proclaimed: [If she] gives birth on the day *Dīng[yǒu]* 丁酉 (the 34th in the *gānzhī* cycle), [it will be] good. [If she] gives birth on the day *Gēngzǐ* 庚子 (the 37th in the *gānzhī* cycle), [it will be] extremely auspicious.
	【Verification:】	Thirty-one days later, on the day 甲寅 (the 51st in the *gānzhī* cycle), [Lady Hǎo 好] gave birth; [it was] not good, [because she gave birth to] a girl.
②	【Preface:】	Crack-making on the day *Jiǎshēn* 甲申 (the 21st in the *gānzhī* cycle), Què 殼 divined:
	【Charge:】	Lady Hǎo 好 is going to give birth; [will it be] not good?
	【Verification:】	Thirty-one days later, on the day 甲寅 (the 51st in the *gānzhī* cycle), [Lady Hǎo 好] gave birth; [it was] indeed not good, [because she gave birth to] a girl.[1]

(4) The nature of the charge (*mìngcí* 命辭)

The nature of the charge remains controversial in oracle-bone studies. Scholars' opinions can be roughly divided into three groups:

(1) Oracle-bone charges are interrogative sentences;[2]
(2) Oracle-bone charges are declarative sentences;[3]
(3) Oracle-bone charges can either be interrogative or declarative sentences, depending on the specific context.[4]

As has been mentioned before, a complete oracle-bone inscription consists of a preface, charge, prognostication and verification. The basic formula of the preface in all five periods is：

[1] In the oracle-bone inscriptions, if the gender of the newborn is male, it is considered to be *jiā* 嘉 'good', otherwise, it is considered to be *bù jiā* 不嘉 'not good'.

[2] Guō Mòruò 郭沫若 1933; Dǒng Zuòbīn 董作賓 1945; Chén Mèngjiā 陳夢家 1956; Zhāng Bǐngquán 張秉權 1965: 455; Cháng Yùzhī 常玉芝 1987; Chén Wěizhàn 陳煒湛 1994; Zhèng Jiéxiáng 鄭傑祥 1884; Zhū Qíxiáng 朱歧祥 1995, 1997a, 1997b, 1999; Zhāng Yùjīn 張玉金 1995, 1997，2000a, 2000b, 2001; Chén Niánfú 陳年福 1997, 2000; Zhāng Shìchāo 張世超 2002; Yù Suìshēng 喻遂生 and Zōu Yuān 鄒淵 2019.

[3] Keightley 1972: 9-13, 1978, 1989: 138-139, 2012; Lefeuvre 1985; Serruys 1974: 21-27; Takashima 1973, 1984, 1987, 1988-1989, 1989, 2006, 2010; Wū Chēngxǐ 巫稱喜 2016a, 2016b.

[4] Ráo Zōngyí 饒宗頤 1959: 70-71; Lǐ Xuéqín 李學勤 1980, 1981, 1986; Nivison 1982, 1989; Shaughnessy 1983: 124-133; Qiú Xīguī 裘錫圭 1988.

XX 卜 X 貞

XX bǔ X zhēn

Crack-making on the day XX (the *gānzhī* cycle), X (the diviner) divined: …

It can be seen that the charge follows directly the word **treŋ* 鬥 (*zhēn* 貞) (written with the simplified form of the TRIPOD graph) in the preface. So the word *zhēn* 貞 is closely related to the following charge, and understanding this word is of great importance to the determination of the nature of the charge.[1] The word *zhēn* 貞 was first interpreted by Sūn Yíràng 孫詒讓 (AD 1848-1908) as "to question (by divination)",[2] so the following charge was considered to be an interrogative sentence. For half a century since then, scholars such as Guō Mòruò 郭沫若 (AD 1892-1978), Dǒng Zuòbīn 董作賓 (AD 1895-1963), and Chén Mèngjiā 陳夢家 (AD 1911-1966) have followed this interpretation.[3] The main basis of their discussion is the explanation of the word *zhēn* 貞 in *Shuō wén jiě zì* 說文解字:

貞，卜問也。[4]

Zhēn, bǔ wèn yě.

The word *zhēn* 貞 is to question (by divination).

However, this interrogative interpretation was questioned by Ráo Zōngyí 饒宗頤 (AD 1917-2018) in 1959. According to his study of traditional Chinese literature, he proposed a different interpretation of *zhēn* 貞. In his view, *zhēn* 貞 means "to question (by divination)" in some of the traditional literature, while in others the word is declarative in nature. On this basis, he argued that some oracle-bone charges are interrogative, while others are declarative.[5] Zhāng Bǐngquán 張秉權 (AD 1919-?), however, rejected the alleged declarative examples proposed by Ráo Zōngyí 饒宗頤, thus upholding the conventional interrogative viewpoint.[6] The debate on the nature of the charge failed to garner much attention from scholars at that time.

However, Keightley (AD 1932-2017) asserted that all oracle-bone charges are declarative sentences (see below), which sparked a new round of broader and

[1] Some scholars argue that the meaning of the word *zhēn* 貞 does not determine the nature of the charge, and for more details see discussions in, such as, Nivison 1982 and Qiú Xīguī 裘錫圭 1988.
[2] Sūn Yíràng 孫詒讓 1904: 6.
[3] Guō Mòruò 郭沫若 1933; Dǒng Zuòbīn 董作賓 1945; Chén Mèngjiā 陳夢家 1956.
[4] *Shuō wén • Bǔ bù* 說文解字 • 卜部 (Xǔ Shèn 許慎 2003: 69).
[5] See also the reprinted version, Ráo Zōngyí 饒宗頤 2009: 68-69. For more discussions see also Zhào Chéng 趙誠 and Chén Xī 陳曦 2001: 1-2; Lǐ Nà 李娜 2009: 6; Fàn Xīn 範欣 2019: 2-3.
[6] Zhāng Bǐngquán 張秉權 1965: 455. For more discussions see Zhāng Yùjīn 張玉金 2001: 13; Zhào Chéng 趙誠 and Chén Xī 陳曦 2001: 2; Lǐ Nà 李娜 2009: 7; Fàn Xīn 範欣 2019: 3.

more far-reaching debate.[1] Since then, some scholars, such as Serruys, Takashima and Lefeuvre have supported and further developed this point of view.[2] Some follow Ráo Zōngyí 饒宗頤, such as Lǐ Xuéqín 李學勤 (AD 1933-2019), Shaughnessy and Qiú Xīguī 裘錫圭, citing new evidence, especially with regard to interrogative particles in the inscriptions.[3] There are still many, such as Cháng Yùzhī 常玉芝, Chén Wěizhàn 陳煒湛, Zhèng Jiéxiáng 鄭傑祥, Zhū Qíxiáng 朱歧祥, Zhāng Yùjīn 張玉金 and Chén Niánfú 陳年福, who insist on the exclusively interrogative viewpoint.[4]

Since the beginning of the 21st century, there are still some scholars, not many though, working on the nature of the charge. Some of them, such as Zhāng Shìchāo 張世超, Lǐ Nà 李娜, Fàn Xīn 範欣, Yù Suìshēng 喻遂生 and Zōu Yuān 鄒淵) support an interrogative interpretation,[5] while others, such as Wū Chēngxǐ 巫稱喜 and Liú Yuán 劉源, prefer a declarative one.[6] A consensus cannot be achieved at present.[7] The main basis for the viewpoint that charges with interrogative particles are interrogative while others are declarative is that the words, such as **[ʔ](r)ik* 𠂤 (*yì* 抑), at the end of oracle-bone inscriptions are interrogative particles.[8] But certain scholars, such as Qiú Xīguī 裘錫圭 and Zhāng Yùjīn 張玉金, have pointed out that interrogative particles cannot be used as a criterion for judging whether a sentence is interrogative, since there are interrogative sentences that do not contain interrogative particles in either classical or modern Chinese.[9] Moreover, Zhū Qíxiáng 朱歧祥 claims that the word *yì* 抑 can also be interpreted as nouns instead of interrogative particles.[10]

With regard to the declarative viewpoint, the representative scholars are Keightley, Serruys and Takashima.[11] Their primary viewpoint is that the word *zhēn* 貞 belongs to a word family whose core meaning is **teŋ-s* 'regulate, rectify' (*zhèng* 正), or **m-tᶜeŋ-s/ *N-tᶜeŋ-s* 'determine, settle, fix' (*dìng* 定),

[1] Keightley 1972.
[2] Serruys 1974: 21-27; Takashima 1973, 1984, 1987, 1988-1989, 1989, 2006, 2010; Lefeuvre 1985.
[3] Lǐ Xuéqín 李學勤 1980, 1981: 8, 1986: 68; Nivison 1982, 1989; Shaughnessy 1983; Qiú Xīguī 裘錫圭 1988. Qiú Xīguī 裘錫圭 (1988) argues that some charges are interrogative sentences, while others are declarative sentences. However, he does not consider an interrogative particle as a criterion for judging whether a sentence is interrogative (for which see below).
[4] Cháng Yùzhī 常玉芝 1987; Chén Wěizhàn 陳煒湛 1994; Zhèng Jiéxiáng 鄭傑祥 1884; Zhū Qíxiáng 朱歧祥 1995, 1997a, 1997b, 1999; Zhāng Yùjīn 張玉金 1995, 1997, 2000a, 2000b, 2001; Chén Niánfú 陳年福 1997, 2000.
[5] Zhāng Shìchāo 張世超 2002; Lǐ Nà 李娜 2009; Fàn Xīn 範欣 2019; Yù Suìshēng 喻遂生 and Zōu Yuān 鄒淵 2019.
[6] Wū Chēngxǐ 巫稱喜 2011, 2013, 2014, 2016a, 2016b; Liú Yuán 劉源 2015.
[7] For studies on the nature of the charge in the 20th century see Zhào Chéng 趙誠 and Chén Xī 陳曦 2001; Zhāng Yùjīn 張玉金 2001; Lǐ Nà 李娜 2009; Fàn Xīn 範欣 2019.
[8] Lǐ Xuéqín 李學勤 1980, 1981; Qiú Xīguī 裘錫圭 1988.
[9] Qiú Xīguī 裘錫圭 1988; Zhāng Yùjīn 張玉金 1995.
[10] Zhū Qíxiáng 朱歧祥 1994: 178-204.
[11] Keightley 1972: 9-13, 1978, 1989: 138-139, 2012; Serruys 1974: 21-27; Takashima 1973, 1984, 1987, 1988-1989, 1989, 2006, 2010.

related presumably to **tʿeŋʔ* 'cauldron, tripod' (*dǐng* 鼎). From their perspective, the divination process tests the diviner's propositions, and the Shāng diviner may well have been "regulating, determining, fixing or attesting" his charges.[1] However, this viewpoint neither conforms to the inscription and divination nor can examples be found in the traditional literature.

Firstly, from the inscription itself, the word *zhēn* 貞 follows or is followed by the word **[ɢ]wat* 曰 'to say' (*yuē* 曰) in some inscriptions. For example,

02. 癸亥卜，王曰貞：大乙歲一牛？在八月。 (H 22731, Period II)

Guǐhài bǔ, wáng yuē zhēn: Dà Yǐ suì yīniú? Zài bāyuè.

Crack-making on the day *Guǐhài* 癸亥 (the 60th in the *gānzhī* cycle), the king said and divined: [Shall we] conduct the *suì* 歲 ritual with one ox to the ancestor Dà Yǐ 大乙? It was the 8th month.

03. 丙申卜，王貞曰：雨？ (W 1265, Period II)

Bǐngshēn bǔ, wáng zhēn yuē: yǔ?

Crack-making on the day *Bǐngshēn* 丙申 (the 33th in the *gānzhī* cycle), the king divined and said: [Will it] rain?

And in some cases, the preface is XX *bǔ* 卜 *yuē* 曰, for instance:

04. □寅卜，曰：禦祖辛？ (H 19858, Period I)

□*yín bǔ，yuē : yù Zǔ Xīn?*

Crack-making on the day ...*yín*□寅 (the 3rd in the Earthly Branches), [the diviner] said: [Shall we] conduct the *yù* 禦 ritual to the ancestor Xīn 辛?

05. 己巳王卜，曰：翌庚午... (H 24125, Period II)

Jǐsì wáng bǔ, yuē: Yì Gēngwǔ ...?

Crack-making on the day *Jǐsì* 己巳 (the 6th in the *gānzhī* cycle), the king said: ... on the next day *Gēngwǔ* 庚午 (the 7th in the *gānzhī* cycle)?

Clearly, the word *yuē* 曰 'to say' can be found before or after the word *zhēn* 貞, which can sometimes also be replaced by the word *yuē* 曰 'to say' in the preface，so these two words should have a similar meaning.[2]

[1] Keightley 2012: 360.
[2] For more discussions see also Zhū Qíxiáng 朱歧祥 1997, Zhāng Yùjīn 張玉金 2000a.

Moreover, the purpose of divination is to resolve doubts, and examples can be found in the traditional literature, for instance:

(1) 卜以决疑，不疑何卜?[1]

Bǔ yǐ jué yí, bù yí hé bǔ?

Divination is made to resolve doubts. If there is no doubt, why should we make divination?

(2) 疑而筮之，则弗非也。[2]

Yí ér shì zhī, zé fú fēi yě.

If there is doubt, divine it; if not, do not do so.

It can be seen that divination is made when people have doubts, and if they have no doubt, there is no need for divination. Thus, the charge should be to question through divination and seek solutions for doubts.

Furthermore, there are two forms of the TRIPOD graph in the oracle-bone inscriptions (that is, a simplified form  and a complex one ). In the prefaces, the vast majority of TRIPOD graphs are in simplified form, and the complex form rarely appears, such as H 3171 and H 22265, while the charge contains only the complex form, and the simplified form never appears. If these two forms appear in the same divination, the simplified form only appears in the preface, while the complex form only appears in the charge, such as H 171, H 3171 front, H 6482, H 10136, H 11499 front (**Fig. 1.1-6**), H 15267, H 15844, H 18563, H 19500, H 19699 and H 21154.

[1] *Zuǒ zhuàn* 7 • *Huángōng shíyī nián* 左傳 7 • 桓公十一年 (Shànghǎi gǔjí chūbǎnshè 上海古籍出版社 1997: 1755). The *Zuǒ zhuàn* 左傳, generally translated as *The Zuo Tradition* or *The Commentary of Zuo*, also known as *Chūnqiū zuǒshì zhuàn* 春秋左氏傳 or *Zuǒshì chūnqiū* 左氏春秋, is a Chinese narrative history that is traditionally regarded as a commentary on the *Chūnqiū* 春秋. It consists of 30 chapters covering a period from 722 to 468 BC, primarily focusing on political, diplomatic, and military affairs.
[2] *Lǐ jì* 3 • *Qǔ lǐ shàng* 禮記 3 • 曲禮上 (Shànghǎi gǔjí chūbǎnshè 上海古籍出版社 1997: 1252).

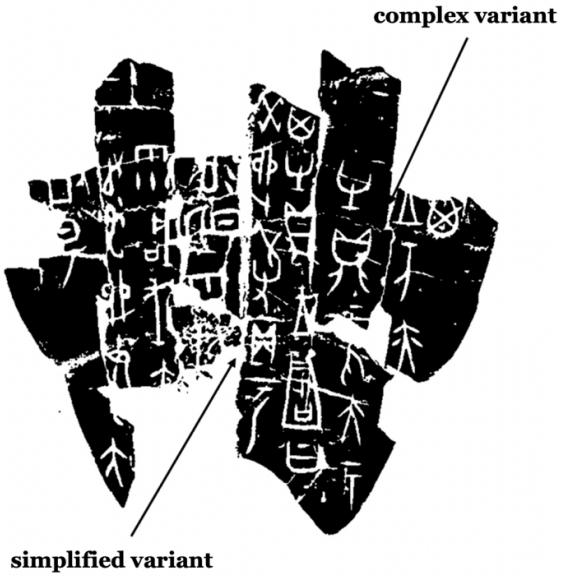

Fig. 1.1-6
The two variants of the TRIPOD graph on H 11499 front

So the two variants of the TRIPOD graph seem to be used for two different words. The complex one is used to write the word **tˁeŋʔ* 'tripod or cauldron (for cooking) (n.)' or 'to cook food (with tripod) (v.)' (*dǐng* 鼎) in the charge. For instance:

06. 貞：呼子?祼于㞢妣，鼎㞢?。 (H 3171 front, Period I)

Zhēn: hū zǐ guàn yú yǒu bǐ, dǐng yǒu?

Divined: Call upon the junior ? to make the *guàn* 祼 ritual to female ancestors, [shall we] use the tripod [for sacrifice]?

07. 壬寅卜，貞：㞢于父乙牢。曰：勿卯，鼎。 (H 10136 front, Period I)

Rényín bǔ, zhēn: yǒu yú Fù Yǐ láo. Yuē: wù mǎo, dǐng?

Crack-making on the day *Rényí* 壬寅 (the 39th in the *gānzhī* cycle), [the diviner] divined: [Shall we] provide sacrifice *láo* 牢 (quantifier for sacrifice) to father Yǐ 乙? [The king or the diviner] said: Do not split [the sacrifice], but cook them on the tripod.

Therefore, as mentioned above, the word *zhēn* 貞 has a similar meaning as the word *yuē* 曰 'to say' and, since the purpose of divination is to resolve doubts, the simplified TRIPOD graph is very likely to have served as a secondary logogram for the nearly homophonous **treŋ* 𠂤 'to question (by divination)' (*zhēn* 貞) in the preface.

Regarding the viewpoint of the declarative nature of the charge, one of the most discussed oracle-bone categories is the asymmetrical paired inscription

(*duìzhēn bǔcí* 對貞卜辭), that is, two inscriptions that are opposite in meaning and form. Among these inscriptions, two on the front of H 6482 has received considerable attention:[1]

08. (A) 辛酉卜，貞：今春王比望乘伐下危，受有佑。
(B) 辛酉卜，貞：今春王勿比望乘伐下危，弗其受有佑。(Period I)

Xīnyǒu bǔ, zhēn: Jīn chūn wáng bǐ Wàngchéng fá Xiàwēi, shòu yǒu yòu?
Xīnyǒu bǔ, zhēn: Jīn chūn wáng wù bǐ Wàngchéng fá Xiàwēi, fú qí shòu yǒu yòu?

Qiú Xīguī 裘錫圭 argues that the front of H6482 is not a normal paired inscription.[2] In his view, after the negative declarative sentence in inscription (B) (that is, *jīn chūn wáng wù bǐ Wàngchéng fá Xiàwēi* 今春王勿比望乘伐下危), a hypothetical sentence with the opposite meaning should be implied, so inscription (B) can be read as:

> Crack-making on the day *Xīnyǒu* 辛酉 (the 58th in the *gānzhī* cycle), [the diviner] divined: The king does not ally himself with the *Wàngchéng* 望乘 (a state name) to attack the *Xiàwēi* 下危 (a state name) this spring, **[(implied but not stated:) if the king allies himself with *Wàngchéng* 望乘 to attack *Xiàwēi* 下危]**, [we will] perhaps not receive blessings.

However, there is no basis for his assumption, and it is also not advisable to arbitrarily add contents to read inscriptions. Although the front of H 6482 is a little different from common paired inscriptions——only the opposite in form but the same in meaning, this situation is not difficult to understand. The Shāng king, on the surface of it, is asking if he should ally himself with *Wàngchéng* 望乘 to attack *Xiàwēi* 下危, but it is very likely that the Shāng king is inclined to attack, so this manner of questioning obviously increases the probability of achieving his purpose. So the front of H 6482 should be read as:

> Crack-making on the day *Xīnyǒu* 辛酉 (the 58th in the *gānzhī* cycle), [the diviner] divined: [If] the king allies himself with *Wàngchéng* 望乘 to attack *Xiàwēi* 下危 this spring; [will we] receive blessings?
>
> Crack-making on the day *Xīnyǒu* 辛酉 (the 58th in the *gānzhī* cycle), [the diviner] divined: [If] the king does not ally himself with *Wàngchéng* 望乘 to attack *Xiàwēi* 下危 this spring; [will we] not receive blessings?

Therefore, the charge of oracle-bone inscriptions appears to be an interrogative sentence. The Shāng question the ancestors or gods through

[1] Qiú Xīguī 裘錫圭 1988; Chén Wěizhàn 陳煒湛 1994; Zhū Qíxiáng 朱歧祥 1994; Chén Niánfú 陳年福 1997; Wū Chēngxǐ 巫稱喜 2016; Yù Suìshēng 喻遂生 and Zōu Yuān 鄒淵 2019.
[2] Qiú Xīguī 裘錫圭 1988.

divination in order to find solutions to their doubts. However, it cannot be ruled out that Shāng doubts are expressed in the form of declarative sentences.[1] But no matter in which form their doubts are expressed——in interrogative form or declarative form——the content of the charge is their doubts rather than their propositions or tests.

3. Bronze inscriptions (*jīnwén* 金文)

Apart from oracle-bone inscriptions, another form of writing that appeared in the Shāng period is bronze inscriptions, that is, inscriptions cast on bronze vessels, generally called *jīnwén* 金文 (or *qīngtóng míngwén* 青銅銘文, *zhōngdǐngwén* 鐘鼎文, *zhōngdǐng kuǎnzhì* 鐘鼎款識) by Chinese epigraphers.[2] According to the most comprehensive collections of bronze inscriptions at present,[3] there are about 20,000 bronze inscriptions from the Shāng and Zhōu periods.[4] Among them, the Shāng bronze inscriptions account for less than one-third.

The bronze inscriptions first appeared in the Middle or Late Shāng period.[5] These are short texts recording the clan name or the owner's name,[6] and were presumably intended to be used in ritual activities, sacrifices to ancestors in particular.[7] By the end of the Shāng period, bronze texts become longer,[8] primarily commemorating an award for meritorious services, or sometimes sacrificial rituals and military campaigns, such as, the Xiǎochén Yú *zūn* 小臣艅尊 (WJC 11785/ JC 5990; **Fig. 5.3.1-4**) and the Zuòcè bān *yǎn* 作册般甗 (WJC 3347/ JC 944; **Fig. 5.3.1-5**).[9]

Bronze inscriptions enjoyed great popularity in the Western Zhōu period, and were used to propagate the kings' virtuous politics and maintain their

[1] To encompass these two possibilities, the word *zhēn* 貞 in this study is translated with the broader meaning "to divine".

[2] Wáng Huī 王輝 2006: 3; 白冰 Bái Bīng 2009: 5.

[3] Wú Zhènfēng 吳鎮烽 2012, 2016, 2020.

[4] For collections of bronze inscriptions of the Shāng and Western Zhōu periods see also Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2007; for newly discovered bronze inscriptions of the Western Zhōu period with English translations see Shaughnessy 2017a, and discussions on these newly discovered bronze inscriptions see Shaughnessy 2017b.

[5] Qiú Xīguī 裘錫圭 2000: 62, 2013: 47; Wáng Huī 王輝 2006: 3; 白冰 Bái Bīng 2009: 6; Shaughnessy 2011: 379; Wú Zhènfēng 吳鎮烽 2012; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 71; Huáng Dékuān 黃德寬 2019: 214.

[6] For recent discussions see Wáng Chángfēng 王长丰 2015.

[7] Dǒng Yànyàn 董艳艳 2003; Wáng Huī 王輝 2006: 3-4; Chén Yīngjié 陈英杰 2008: 16; Shaughnessy 2011: 379; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 71. For details on the pattern of Shāng bronze inscriptions see the discussion in Chén Yīngjié 陈英杰 2008: 16-31.

[8] Bái Bīng 白冰 2009: 7; Shaughnessy 2011: 379; Feng Li 2018: 20; Huáng Dékuān 黃德寬 2019: 214.

[9] For details about the Xiǎochén Yú *zūn* 小臣艅尊 and Zuòcè bān *yǎn* 作册般甗 see discussion in **5.3.1.**

dominance. The bronze texts in this period deal with, for example, royal awards, investiture ceremonies, sacrificial rituals, military campaigns, such as the Lì *guǐ* 利簋 (WJC 5111/ JC 4131; **Fig. 5.3.1-7**) and the Yú *jué* 盂爵 (WJC 8585/ JC 9104; **Fig. 5.3.1-8**).[1] Since royal award and investiture ceremonies became a matter of routine,[2] bronze inscriptions had become both more common and more formulaic by the end of the Western Zhōu period.[3] These inscriptions normally include four parts: (1) a date and place notation; (2) the account of some event; (3) the record of gifts awarded, such as *bèi* 貝 'cowries' or *yù* 玉 'jade'; and (4) the dedication of the vessel. The most common pattern is the *zǐzǐ sūnsūn yǒng bǎo yòng* 子子孫孫永寶用 'may sons' sons and grandsons' grandsons treasure and use (it) forever'.[4] The Yī *guǐ* 伊簋 (WJC 5339/ JC 4287; **Fig. 1.1-7**), dating to the late Western Zhōu period, is a good case in point.

The content and format of text on the Yī *guǐ* 伊簋 is as follows: (1) A date and place notation: The fullest form of a date notation consists of four parts: ① the reign year, ② the month, ③ the phase of the moon (*chūjí* 初吉 'first auspiciousness', *jìshēngbà* 既生霸 'after the growing brightness', *jìwàng* 既望 'after the full-moon', *jìsǐbà* 既死霸 'after the dying brightness'),[5] and ④ a day in the *gānzhī* cycle.

<01> ①唯王廿又七年②正月③既望 ④丁亥，王在周康宫。

①*Wéi wáng niànyòuqī nián* ② *zhēngyuè* ③ *jìwàng* ④ *Dīnghài, wáng zài Zhōukāng gōng*.

It was ① the twenty-seventh year of the reign of the king, ② the first month, ③ after the full-moon (*jìwàng* 既望), ④ on the day *Dīnghài* 丁亥 (the 24th in the *gānzhī* cycle). The king was in the Zhōukāng 周康 palace.

(2) The account of some events:

旦，王格穆太室，即位。申季入佑伊，立中廷，北嚮。王呼命尹封册命伊："纘官司康宫王臣妾、百工，…"

[1] For details about the Lì *guǐ* 利簋 and Yú *jué* 盂爵 see discussion in **5.3.1.**

[2] For a recent discussion of the rituals and ceremonies of the Western Zhōu see 李春豔 Lǐ Chūnyàn 2016.

[3] Shaughnessy 1992, 1997: 63-64, 2013: 70-71; Wáng Huī 王輝 2006: 4.

[4] For discussion of this pattern see Von Falkenhausen 1993; Chén Yīngjié 陳英傑 2008: 597-683.

[5] Shaughnessy 1992: 78, 1997: 64, 2013: 65; Khayutina 2020: 381. These scholars argue that these four terms represent a seven- or eight-day quarter of a lunation. However, some scholars, such as Féng Shí 馮時 (2016), claim that *chūjí* 初吉 is an auspicious day and has nothing to do with the phase of the moon. For more discussions of the phase of the moon see Mǎ Chéngyuán 馬承源 1983: 26-74; Zhōu Fǎgāo 周法高 1983: 309-349; Wáng Hé 王和 1987, 1988; Zhāng Péiyú 張培瑜 1997; Féng Shí 馮時 2016: 474-482. For a brief history of the study on the phase of the moon see Chén Jié 陳絜 2006: 120-126.

Dàn, wáng gé Mù tài shì, jíwèi. Shēn Jì rù yòu Yī, lì zhōng tíng, běi xiàng. Wáng hū mìng Yǐn Fēng cè mìng Yī: "zuǎn guān sī Kānggōng wáng chénqiè, bǎigōng,..."

At dawn, the king came to the Grand Chamber of King Mù 穆 and took his seat. Shēn Jì 申季 (personal name) accompanied Yī 伊 (the owner of the vessel), entered and stood in the middle of the court, facing to the north. The king called out to order Yǐn Fēng 尹封 (personal name) to read the letter of appointment to Yī 伊: "[I] command you to manage all vassals and craftsmen in the Kāng 康 palace,..."

Fig. 1.1-7 The text of the Yī *guǐ* 伊簋[1]

[1] Wú Zhènfēng 吳鎮烽 2012 (12): 62-63. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 2800; Mǎ Chéngyuán 馬承源 1986: 116, 1988: 207; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 4287, 2007: 2624; Běnshū biānxiězǔ 本書編寫組 2003: 199-200; Lù Huìliáng 陸惠良 and Yú Lì 于麗 2011: 238-239.

(3) The record of gifts awarded:

> "…賜汝赤芾、幽衡、鑾旂、鉴勒, 用事。"
>
> *"…cì rǔ chìfèi, yōuhéng, luánqí, tiáolè, yòng shì."*
>
> "…and I award you a red apron, a dark jade cross-bar, a flag with bronze bells and a horse bridle and bit with bronze decoration use it to carry out (your servieces)."

(4) the dedication of the vessel.

> 伊拜手稽首, 對揚天子休。伊用作朕丕顯文祖皇考穉叔寶䵼彝。伊其萬年無彊，子子孫孫永寶用享。[1]
>
> *Yī bàishǒu jīshǒu, duì yang tiānzǐ xiū. Yī yòngzuò zhèn pī xiǎn wén zǔ huángkǎo Xī Shū bǎo shāngyí. Yī qí wànnián wúqiáng, zǐzǐ sūnsūn yǒng bǎo yòng xiǎng.*
>
> Yī 伊 bowed and touched his head to the ground, daring in response to extol the Son of Heaven's beneficence. I, Yī 伊, have/had this treasured *guǐ* 簋 (tureen) made for my cultured deceased father Xī Shū 穉叔. May Yī 伊's sons' sons and grandsons' grandsons for ten thousand years treasure and use it to feast [the ancestors] .

The royal family of Zhōu declined rapidly after the removal of the capital eastward to Luòyì 洛邑 (present-day Luòyáng 洛陽) ca. 770 BC.[2] Feudal lords play an increasing important role in the bronze texts, which were primarily used to show the honor and status of the owner or his family. There are about 1000 bronze inscriptions coming from the Spring and Autumn period[3] and about 1980 bronze inscriptions from the Warring States period.[4]

In the Spring and Autumn period, most bronze vessels were for personal use and marriage. The texts record the owner of the vessels, which shows the status of (a) the owner or (b) the marriage alliance between two states, for example, (a) the Hán wáng Shìyě *gē* 邗王是埜戈 (WJC 17076/ JC 11263; **Fig.**

[1] For a transcription see also Mǎ Chéngyuán 馬承源 1988: 207 (also including word commentaries); Jiàoyùbù rénwén shèhuì kēxué zhòngdiǎn yánjiū jīdì 教育部人文社會科學重點研究基地 et al. 2001: 322; Zhāng Yàchū 張亞初 2001: 81; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (3): 406, 2007: 2629; Běnshū biānxiězǔ 本書編寫組 2003: 199-200; Zhāng Guìguāng 張桂光 2010: 682; Lù Huìliáng 陸惠良 and Yú Lì 于麗 2011: 238-239 (also including translations into modern Chinese and English); Wú Zhènfēng 吳鎮烽 2012 (12): 62 (with details on excavations and other collections).

[2] Mattos 1997: 85, 2013: 89; Qiú Xīguī 裘錫圭 2000, 2013: 50; Chén Jié 陈絜 2006: 138; Wáng Huī 王輝 2006: 10; Chén Lì 陳立 2012: 1; Fán Jùnlì 樊俊利 2018: 1.

[3] Luó Wèidōng 羅衛東 2005: 2.

[4] Fán Jùnlì 樊俊利 2018: 2.

5.3.1-10) and (b) the Càihóu *pán* 蔡侯盤 (**Fig. 5.3.1-12**).[1] In the Warring States period, bronze inscriptions were often used in recording the years of manufacture as well as the names of those responsible for their manufacture,[2] such as the Zhù kè *dòu* 鑄客豆 (WJC 6135/ JC 4675; **Fig. 5.3.1-13**) and the Gōngzhū zuǒguān *dǐng* 公朱左官鼎 (WJC 2256/ JC 2701; **Fig. 5.3.1-14**).[3]

1.1.2.2 Early Mesoamerican graphic recording systems

1. Olmec

The Olmecs (ca. 1200-600 BC) were the first great civilization in Mesoamerica, and are believed to have been greatly influential on later Mesoamerican cultures. The presence of a writing system in Olmec culture is still controversial. The earliest debated example is the Cascajal block, a serpentine block with 62 incised graphs ("signs") (**Fig. 4.1-1**), dating to ca. 900 BC on the basis of accompanying debris. Some glyphs on later Olmec ceramics and monumental sculptures have also been thought to represent an early Olmec script, such as the San Andrés seal (ca. 650 BC; **Fig. 4.1-6**) and La Venta Monument 13 (ca. 600-200 BC; **Fig. 4.1-8 and 9**).[4]

2. Zapotec

Zapotec civilization arose in the Late Preclassic period in the Valley of Oaxaca, as Olmec civilization was declining, and Zapotec writing appeared with the rising power of Monte Albán in the Valley. The corpus of the Zapotec script consists of texts incised on stone and ceramics from Preclassic and Early Classic Monte Albán and other sites scattered throughout the Valley of Oaxaca and beyond, for example, Dainzú, the Etla region (e.g., Reyes Etla, San Lázaro Etla, and Cerro de la Campana), the Valle Grande (e.g., Xoxocotlán, Cuilapan, Zaachila, Noriega, Santa Inés Yatzeche, and Rancho Tejas de Morelos), the Tlacolula Region (e.g., Macuilxóchitl, Tlacochahuaya, Lambityeco, and Yagul).[5]

[1] For details see discussion in **5.3.1**.
[2] Mattos 1997: 86, 2013: 90-92; Luó Wèidōng 羅衛東 2005: 1; Chén Jié 陈絜 2006: 139-140; Wáng Huī 王輝 2006: 11; Qiú Xīguī 裘錫圭 2013: 58; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 112-113; Fán Jùnlì 樊俊利 2018: 1.
[3] For details see discussion in **5.3.1**.
[4] For details see discussion in **4.1**.
[5] For details see discussion in **4.2**.

3. Epi-Olmec

The epi-Olmec (or Isthmian) script is a writing system that was used in the Isthmus of Tehuantepec from ca. 300 BC to at least AD 500. For now, only about thirteen epi-Olmec texts are known to scholarship, that is, Chiapa de Corzo Sherd (ca. 300 BC; **Fig. 5.3.2-6**), Chiapa de Corzo Stela 2 (ca. 36 BC; **Fig. 4.3-2**), Tres Zapotes Stela C (ca. 32 BC), La Mojarra Stela 1 (ca. AD 157; **Fig. 4.3-1**), Tuxtla Statuette (ca. AD 162; **Fig. 5.3.2-7**), Cerro de las Mesas Stela 5 (ca. AD 528), Cerro de las Mesas Stela 6 (ca. AD 468), Cerro de las Mesas Stela 8 (ca. AD 533), Cerro de las Mesas Stela 15 (ca. AD 468; **Fig. 4.3-3**), Teotihuacan-style Mask (ca. AD 386-523; **Fig. 5.3.2-8**), El Sitio Celt (Late Preclassic), O'Boyle mask and Alvarado Stela 1. The text length varies from 4 to over 500 signs and the longest text is La Mojarra Stela 1.[1]

4. Maya

Maya hieroglyphic writing is generally considered to be the most fully developed Mesoamerican writing system, which was in active use from ca. 300 BC to AD 1700 in the region traditionally known as the "Maya Lowlands", covering the lowlands of present-day Guatemala, Belize, southeastern Mexico (Yucatan, Campeche, Quintana Roo, Chiapas, and Tabasco) and parts of northwestern Honduras. An estimated 10,000 objects have been archaeologically discovered from over 500 sites bearing Maya inscriptions. There are quite a few texts from the Preclassic period, but Classic inscriptions have survived on various media, most of which are stone monuments, such as stelae and altars, and also could be found on architectural sculpture, such as lintels, door jambs, and stairways. Moreover, the corpus also includes texts on ceramics and portable objects, such as pendants, earspools, jade flares, shell trumpets, animal bones and sting-ray spines. In addition, screen-fold books (or codices) were created by Maya scribe instead of monumental inscriptions in the Postclassic period (ca. AD 900), and four Maya codices from the Postclassic period have survived——the *Codex Dresden, Codex Paris, Codex Madrid* and *Códice Maya de México* (previouly known as *Grolier Codex*).[2]

[1] For details see discussion in **4.3**.
[2] For details see discussion in **4.4**.

1.2 Definition of writing

1.2.1 Previous studies

Basic to any discussion of early writing systems is a definition of writing. Previous views on the definition of writing can be roughly divided into two groups: narrow and broad. Scholars who prefer a narrow definition argue that writing is the graphic representation of speech, and their definitions are as follows:

David Diringer (AD 1900-1975)

> "Literally and closely defined, writing is the graphic counterpart of speech, the 'fixing' of spoken language in permanent or semi-permanent form."[1]

Florian Coulmas

> "Instead of giving a formal definition of writing, let us discuss three of its fundamental characteristics:
>
> 1 it consists of artificial graphical marks on a durable surface;
> 2 its purpose is to communicate something;
> 3 this purpose is achieved by virtue of the marks' conventional relation to language."[2]

Michael D. Coe (AD 1929-2019)

> "Writing is speech put in visible form, in such a way that any reader instructed in its conventions can reconstruct the vocal message,"[3] and "all known writing systems are partly or wholly phonetic, and express the sounds of a particular language."[4]

Peter T. Daniels

> "[W]riting is defined as a system of more or less permanent marks used to represent an utterance in such a way that it can be recovered more or less exactly without the intervention of the utterer."[5]

[1] Diringer 1962: 13.
[2] Coulmas 1991: 17.
[3] Coe 1992: 13.
[4] Coe 1992: 25.
[5] Daniels et al. 1996: 3; Daniels 1992: 84; 2017: 83; 2018: 156.

Táng Zuòfān 唐作藩

"[文字是]記錄和傳達語言的書寫符號系統。是擴大語言在時間和空間上的交際作用的工具。"[1]

("[Writing is] a written system of symbols to record and convey language, and a tool to expand the communicative role of language in time and space.")

Yè Fēishēng 葉蜚聲 and Xú Tōngqiāng 徐通鏘 (AD 1931-2006)

"文字是用書寫視覺形式對語言進行再編碼的符號系統。"[2]

("Writing is a system of symbols that re-encodes language in written visual forms.")

Gordon Whittaker

"Writing itself can be defined most concisely as the graphic rendition of language"; [...] "Writing codifies and represents linguistic information by means of graphic elements (signs) of uniform size, arranged in sequence."[3]

Broad definitions, on the other hand, in addition to writing that records language, also include other graphic recording systems which are not fixed to language:

Geoffrey Sampson

"What is writing? To 'write' might be defined, at a first approximation, as: to communicate relatively specific ideas by means of permanent, visible marks."[4]

Qiú Xīguī 裘錫圭

"在文字定義問題上，語言文字學者分狹義和廣義兩派。狹義派認為文字是記錄語言的符號。廣義派大致認為，人們用來傳遞信息的、錶示一定意義的圖畫和符號，都可以稱為文字。我們覺得這種分歧只是使用術語的不同，很難說這裏面有什麼絕對的是非。我們是狹義派，因為在傳統的漢語文獻裏，曆來是用'文字'這個詞稱呼記錄語言的符號的，采取狹義派的立場，講起話來比較方便。"[5]

1 Táng Zuòfān 唐作藩 2007: 624.
2 Yè Fēishēng 葉蜚聲 and Xú Tōngqiāng 徐通鏘 2010: 161.
3 Whittaker 2011: 935.
4 Sampson 1985: 26; 2015: 18.
5 Qiú Xīguī 裘錫圭 1988: 1; 2013: 1.

"Linguists and grammatologists, with regard to this question, are divided into two groups, one holding to a more narrow definition and the other maintain a wider one. Those who maintain the narrow definition hold that writing is a set of symbols for recording language. Those who espouse the wider interpretation by and large believed that pictures and symbols that transmit information or express a definite meaning may also be called writing. In our opinion, this division of opinion is no more than a difference of terminology, and it is difficult to say that there is any question of absolute right or wrong involved. We belong to the group that maintains the narrower definition, because in traditional Chinese text, the term *wénzì* 文字 (writing, script) has referred to symbols for recording language, and it is in general more convenient to adopt the narrower point of view when speaking of this subject."[1] (see below)

John DeFrancis (AD 1911-2009)

"Partial writing is a system of graphic symbols that can be used to convey only some thought.

Full writing is a system of graphic symbols that can be used to convey any and all thought."[2]

Wáng Fèngyáng 王鳳陽

"文字是作為社會記錄和交際工具用的和語言日益適應的書寫的符號體系。"[3]

("Writing is a graphic system of symbols that is increasingly adapted to language and used for social records and communication.") (see below)

Elizabeth H. Boone

"We then can define writing broadly as the communication of relatively specific ideas in a conventional manner by means of permanent, visible marks."[4]

"Two of [Sampson's] definitions combined allow us to recognize writing as the communication of relatively specific ideas in a conventional manner by means of permanent, visible marks."[5]

[1] Qiú Xīguī 裘錫圭 2000: 1. This is a translated version of Qiú Xīguī 裘錫圭's *Wénzìxué gàiyào* 文字學概要, and the translation is based on two editions, which published by Shāngwù yìnshūguǎn 商務印書館 in Běijīng in 1988 and by the Wànjuànlóu 萬卷樓 in Táiběi in 1994.
[2] DeFrancis 1989: 5.
[3] Wáng Fèngyáng 王鳳陽 1989: 21, 2018: 23.
[4] Boone 1994: 15.
[5] Boone 2000: 30.

William G. Boltz (Bào Zéyuè 鮑則嶽)

> "The 'visible marks' that serve as the tangible signs of writing, whether in the broad or the narrow sense, in Elizabeth Boone's definition we shall call 'graphs,' abbreviated **G**. … When we wish to indicate writing explicitly in the narrow sense, as graphs that represent spoken language, we refer specially to glottographic writing. Writing in the broader, more liberal sense is, by contrast, called non-glottographic writing. Any graph **G** that functions as writing, whether glottographic or non-glottographic, will have by definition some conventionally understood semantic import; in other words, it has semantic value. We will formally designate this feature of **G** as {+**S**}. A graph that does not convey any conventionally understood meaning (i.e., that has no semantic value) is thus {-**S**}… When a graph does have a phonetic value we mark it as {+**P**}; when it does not we mark it as {-**P**}. …
>
> 1. **G**: {-**P**, -**S**}, non-writing[1]
> 2. **G**: {-**P**, +**S**}, non-glottographic writing
> 3. **G**: {+**P**, +**S**}, glottographic writing type I (morphemic or logographic)
> 4. **G**: {+**P**, -**S**}, glottographic writing type II (syllabic or alphabetic)
>
> Of the four possible types of G, three can be considered writing; of these three the last two constitute glottographic writing."[2]

Haicheng Wang (Wáng Hǎichéng 王海城)

> "Discussions of early writing tend to operate with two distinct definitions, one narrow and one broad. The narrow definition reserves the word *writing* for the exact graphical transcription of spoken language. The broad definition extends the word to embrace graphical recording systems whose conventionalized marks are not necessarily bound to a particular language."[3]

As argued by most of the above linguists and specialists on writing systems, such as Diringer, Coulmas, Daniels, Coe [and other Mesoamerican ephigraphers], Táng Zuòfān 唐作藩, Yè Fēishēng 葉蜚聲 and Xú Tōngqiāng 徐通鏘 and Whittaker, writing is the graphic representation of language. In other words, systems that convey information without an association with language are not writing. However, most specialists on Chinese writing and Mesoamerican pictorial manuscripts, such as Qiú Xīguī 裘錫圭, Wáng Fèngyáng 王鳳陽, DeFrancis, Boone [and other Mesoamerican art historians], Boltz and Haicheng Wang, prefer a broader definition of writing. From their point of view, all visible marks that can communicate information are writing.

[1] P = phonetic value; S = semantic value.
[2] Boltz 2011: 54-56.
[3] Haicheng Wang 2014: 4

These scholars tend to see and redefine writing in the conventional sense as "glottographic writing", whereas for them other graphic systems are "semasiographic writing". For example, in recent studies, Brokaw argues that "glottographic exceptionalism" is popular in academic studies of writing because many a scholar is a *homo alphabeticus*,[1] who imposes a "foreign standard of value and teleology on other societies".[2] One strategy proposed by him to deconstruct the bias of *homo alphabeticus* is "to reject the narrow definition of writing and literacy as glottographic in favor of a broader definition that includes semasiographic systems——that is, systems whose signs convey meaning without necessarily passing through language".[3]

Generally speaking, there is an agreement on the nature of graphic recording systems (that is, notation, iconography and writing) in the western tradition. In this case, it is not necessary to broaden the definition of writing, causing confusion between writing and other graphic recording systems. Moreover, proponents of a broad definition, such as Boone and Brokaw, claim that the narrow definition values glottography over other systems, implying the inferiority of semasiography (notation and iconography), while a broad definition places semasiography on the same level as glottography.[4] According to the conventional definition, semasiography and glottography are separate subsystems of graphic recording, with writing regarded as the more sophisticated system. As a result, there is a tendency to place an overemphasis on writing. However, it would be more accurate and productive to view all three subsystems as autonomous and coequal, each of which may interact with, and be influenced by, the others. An Early Classic shrine (**Fig. 1.2-2**) in the Margarita temple of Copan is a good case in point.[5] This shrine was designed as a memorial for *K'inich Yax K'uk' Mo'* ("Lord Green Quetzal Macaw",[6] also known as "Radiant First Quetzal Macaw"), the dynasty founder of Classic Copan.[7] The glyphic spelling and form (**Fig. 1.2-1**) for his name is as follows:[8]

K'INICH YAX-K'UK'[MO']

The shrine is decorated with a frieze of two birds (a quetzal and a macaw) with their necks intertwined, spelling out *k'uk'* "quetzal" and *mo'* "macaw". Out of their beaks emerges the head of the sun god *K'in*, which is frequently used as a logogram for the royal title *k'inich*. The feathered crest on the birds' heads is the abstract symbol for *yax* "green". However, while the birds are interlinked iconographically, they, together with the *yax* and *k'in* elements attached to

[1] Brokaw 2022; Brokaw and Mikulska 2022.
[2] Brokaw 2022: 164.
[3] Brokaw 2022: 165.
[4] Boone 2000: 29-30; Brokaw 2022: 165-166.
[5] For more discussion of the shrine see Martin and Grube 2008: 194; Law 2015: 171-172.
[6] Law 2015: 171.
[7] For more discussion of *K'inich Yax K'uk' Mo'* see Martin and Grube 2008: 192-194.
[8] Martin and Grube 2008: 192.

them, refer to specific parts of the ruler's name sequence, thus, imitating writing in its unambiguous relationship to writing. The two systems, while autonomous, are employed here to complement and reinforce each other.

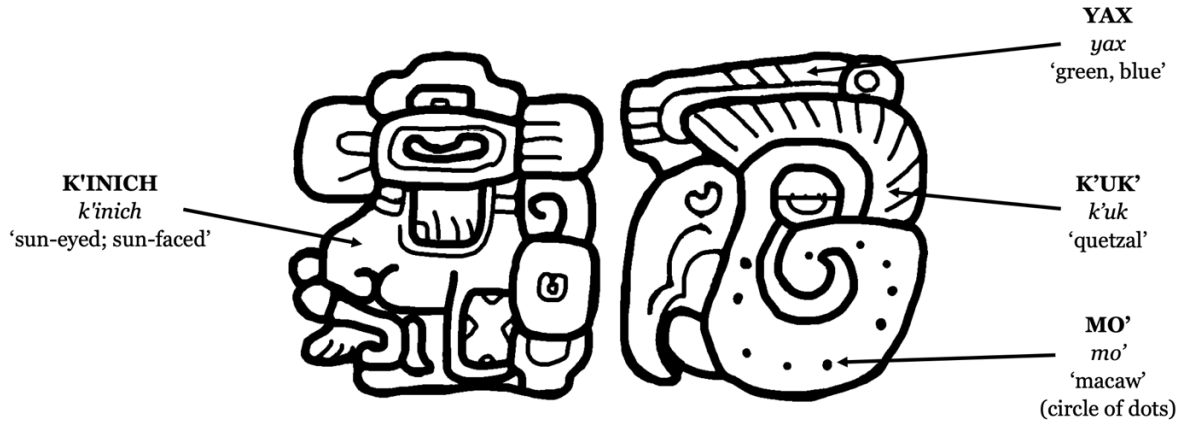

Fig. 1.2-1 Glyphic form of *K'inich Yax K'uk' Mo'*

Fig. 1.2-2 Photo (a)[1] and illustration (b)[2] of Copan Stucco frieze with ruler's name (quetzal on the left and macaw on the right with a horn-like *yax* on their heads)

[1] Martin and Grube 2008: 192.
[2] Law 2015: 173, figure 8.4.

Definitions for the three subsystems of graphic recording are as follows:

> **Notation** refers to graphic elements (marks) employed to codify and represent nonlinguistic information, such as tallied counts, music and pottery batches, and usually written in uniform size and arranged in sequence.
>
> **Iconography** refers to graphic elements (symbols) commonly used to codify and represent nonlinguistic information in the religious, political, military and sports context, and usually written in nonuniform size and arranged in sequence.
>
> **Writing** refers to graphic elements (signs) that codify and represent linguistic information in uniform size and arranged in sequence.[1]

Like writing systems, notations and iconographies can also be in uniform size and arranged in sequence. The key feature that distinguishes writing from the other two is its correspondence to language.

1.2.2 Controversial aspects of a broad definition of writing

As a proponent of a broad definition, Sampson claims that the system that provides visible representations of spoken-language utterances is "glottographic" writing. Some forms of communication do not rely on spoken language but might still be described as "writing". His supporting examples are the international system of garment-care symbols, road signs, Blissymbolics, and mathematical symbols. He argues that these forms of communication can be called "semasiographic" writing, which communicate specific ideas and are not tied to any particular spoken language.[2]

Boone's definition of writing builds on Sampson's. She further divides his semasiographic system into two types: (1) conventional systems, which convey meaning by an interrelationship of symbols that are codified, such as mathematical notations; and (2) iconic systems, in which a natural relationship between the symbol and its referent can be identified, such as international road signs.[3] As for Precolumbian writing systems, she argues that Maya writing is the principal glottographic system of Precolumbian writing and most of the others are semasiographic: (1) iconic, such as the

[1] The definitions of notation, iconography and writing are based on Whittaker 2009: 51-53, 2011: 935-936.
[2] Sampson 1985: 27-33; 2015: 21-23.
[3] Boone 1994: 15-17, 2000: 30.

Mixtec system and Moche pictographies; and (2) conventional, such as the khipu (quipu) system of the Inka in Andean South America.[1] From her perspective, these semasiographic systems record other areas of knowledge and understanding instead of language and stand in the place of writing and occupy the same or very similar social niches as writing otherwise would.[2] And these systems work much better than linguistically based writing at showing structures and explaining the relationships of elements.[3] However, like Sampson, Boone tries to redefine writing, which causes confusion between writing as generally understood in international studies and the other two graphic recording systems.

Even if these examples of alleged semasiographic systems can record information and have a similar communicative function as writing, they stand in sharp contrast to the latter in that they record no language. The khipu system is a good case in point. The term khipu (from the Quechua word for "knot") refers to the knotted-cord devices used for record-keeping in the Inka empire of Pre-Columbian South America.[4] Specialists recognize that khipus functioned as communication devices, the signs and values of which were mutually intelligible to individuals with specialized knowledge of khipu-making.[5] Most extant khipus are thought to be products of the Inka civilization of the Late Horizon period (ca. AD 1400-1532),[6] which is characterized by predominantly S-plied cotton or camelid knotted cords attached to a primary cord.[7] About two-thirds of the Inka khipus signify certain units of value in the Quechua decimal-based system of numeration,[8] in which knots are tied in tiered clusters along the length of the pendant cords. Knots are divided into three types: (1) single knots, signifying such as tens, hundreds and thousands; (2) long knots, signifying unit values from two to nine; and (3) figure-eight knots, signifying single units (ones),[9] which are illustrated in **Fig. 1.2-3**:

[1] Boone 1994: 17-22.
[2] Boone 2004: 313.
[3] Boone 2004: 346.
[4] Urton 2002: 173; 2011: 319.
[5] Pärssinen 1992; Urton 2011: 320.
[6] Ascher and Ascher 1997; Conklin 2002; Urton 2003, 2008, Urton and Brezine 2011.
[7] Urton and Brezine 2011: 323.
[8] Urton 2002: 186.
[9] Ascher and Ascher 1997; Urton 2002: 184; Urton and Brezine 2011: 332.

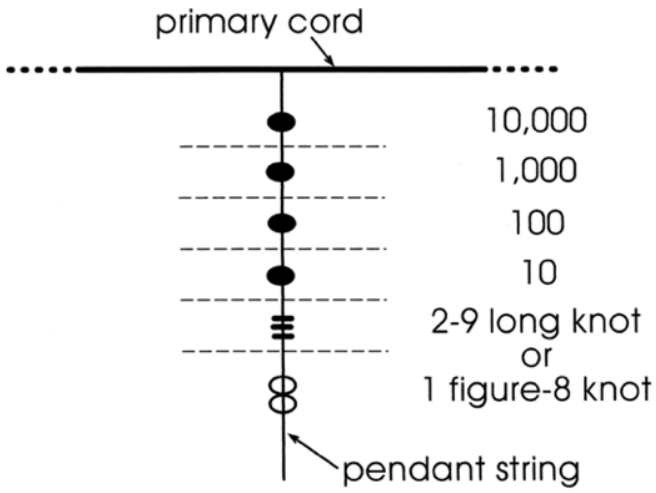

Fig. 1.2-3
Decimal hierarchy of knots (khipus)[1]

With regard to the remaining one-third of the Inka khipus, knots are not arranged in tiered clusters but randomly along the cords. Specialists believe that these khipus contain coded units of signification which can be consulted by khipu-keepers for narrative performances, such as recounting origin stories, accounts of the deeds of the Inkas, and other such mythohistorical matters.[2] However, with regard to the khipus signifying decimal numerals, they are more like a notational system, just like the notational device *jiéshéng* 結繩 in ancient China.[3] Moreover, the interpretation of the "narrative" khipus is hypothetical, and even if they can convey information, there is no evidence that they represent language, so it is better to class them with the other two graphic recording systems rather than with writing.

Likewise, Boltz's definition has been developed from Boone's, so there are similar problems. In the first place, his alleged "non-glottographic writing" ({-**P**, +**S**}) represents no linguistic information, so it is better not to be grouped together with writing in the conventional sense. Moreover, from his perspective, Shāng writing is not the starting point of Chinese writing, because it does not appear to differ significantly from modern Chinese writing, so there must have been some precursor forms or stages.[4] In his view, the alleged "glottographic writing" seems to have arisen from a preexisting non-glottographic notational system. To be more specific, glottographic writing arises, when a {+**S**} "sign" or mark that had not been associated conventionally with any specific pronunciation, takes on a fixed phonetic value, and becomes {+**P**}.[5]

[1] Urton 2002: 185, figure 8.2.
[2] Urton 2002; Urton and Brezine 2011: 325.
[3] For more details on *jiéshéng* 結繩 see discussions in **2.3.1**.
[4] Boltz 2011: 67.
[5] Boltz 2011: 74.

However, in contrast to Boltz, one can object that writing is a system that represents linguistic information and has its own principles. The invention of writing is not simply a "sign" taking on a fixed phonetic value. In addition, as discussed in Chapter 3, Chinese Neolithic graphs appear to belong to notation and iconography, and none of them represents language. As Boltz himself has also pointed out, although there are some graphic similarities between the pre-Shāng marks and Shāng inscriptions, it is not sufficient to establish a developmental connection between them.[1] Therefore, there is no direct record or solid archaeological testimony at present for such a preexisting non-glottographic notational system that Chinese writing can have derived from.

These scholars' preference for a broader definition appears to be driven by their research tradition and the focus of their studies. Let's take the study of Chinese writing (known as *wénzìxué* 文字學 in Chinese) as an example. The study of Chinese writing began in the Hàn Dynasty (206 BC-AD 220)[2] and was called *xiǎoxué* 小學 down to the Qīng Dynasty (AD 1636-1912).[3] After unification, in order to strengthen and streamline the administration of the Qín Dynasty (221-206 BC), the first Chinese emperor Qínshǐhuáng 秦始皇 set the standard of writing for the small seal script (*xiǎozhuàn* 小篆 or *Qínzhuàn* 秦篆), and destroyed numerous classic works in 221 BC that used earlier conventions. As a result, in the following one or two centuries, most people knew little about pre-Qín signs.

The following Hàn Dynasty extensively searched for pre-Qín classics that had survived the book burnings of the Qín period,[4] and many classics written in pre-Qín signs were rediscovered. The first priority in reading these classics was to identify the pre-Qín signs. This led to the rise of the study of Chinese writing. The earliest scholars who devoted themselves to this work were Confucian scholars, such as Zhāng Chǎng 張敞 (ca. ?-48 BC), Liú Xīn 劉歆 (ca. ?50 BC-AD 23) and Bān Gù 班固 (AD 32-92). The most influential work in the Hàn Dynasty and over the following centuries is the *Shuōwénjiězì* 說文解字 of Xǔ Shèn 許慎 (ca. AD 30-124), which fully reflected the achievements made by Confucian scholars in the study of Chinese writing during the Hàn Dynasty. Their studies attach great importance to the analysis of glyphic forms of signs in exploring their original meanings. The theory they used to analyze

[1] Boltz 2011: 65-67.

[2] Some scholars (such as Gāo Míng 高明 1996: 3) believe that the study of Chinese writing began in the Warring States period. This makes no sense. It is based on the records in some traditional Chinese works, so its date and authenticity cannot be guaranteed. Moreover, these records consist of only a small number of analyses or interpretations of individual Chinese signs, scattered in traditional works. In addition, these analyses or interpretations serve each author's political views instead of writing studies.

[3] Táng Lán 唐蘭 1979, 2005: 1-2; Wáng Fèngyáng 王鳳陽 1989: 1, 2018: 3; Huáng Dékuān 黃德寬 and Chén Bǐngxīn 陳秉新 2006: 3-5; Huáng Dékuān 黃德寬 2019: 1-5; Féng Shí 馮時 2016: 63.

[4] For the book burnings of the Qín period see also **5.3.1**.

the graphic forms and usages of Chinese characters was called the *Liùshū* 六書, the six-principle theory or six categories of Chinese characters which includes *xiàngxíng* 象形, pictographs or "resembling shapes"; *zhǐshì* 指事, semantographs or "pointing at affairs"; *huìyì* 會意, syssemantographs or "converging meanings"; *xíngshēng* 形聲, phonograms or "shapes and sounds"; *zhuǎnzhù* 轉注, "turning and commenting"; and *jiǎjiè* 假借, loangraphs or "loaning and borrowing".[1]

With the increasing popularity of collecting and recording bronze inscriptions in the Sòng Dynasty (AD 960-1279), Chinese epigraphy (*jīnshíxué* 金石學)[2] began, focusing on the study of bronze and stone inscriptions. Epigraphers' interpretations were based on the analysis of graphic forms and comparisons with traditional texts.

In modern times, Táng Lán 唐蘭 (AD 1901-1979),[3] a specialist on Chinese writing, argued that the object of the study of Chinese writing is the graphic forms of the signs, while research on phonetics and semantics should belong to phonology (*yīnyùnxué* 音韻學)[4] and traditional semasiology of characters (*xùngǔxué* 訓詁學)[5]. His point of view was very influential, and has continued to this day, and is considered to have laid the foundation for the modern study of Chinese writing.[6]

It can be seen that from the Hàn Dynasty to the present, the interpretation of ancient Chinese signs is mainly based on the graphic forms, and the research method is the comparison of unknown glyphic forms with the known ones. This is mainly due to the continuity of the development of Chinese signs, from the very beginning to the present, which provides a complete comparison system for the study of signs. For example, through the comparison of graphic forms, a large number of oracle-bone signs was successfully deciphered soon after the discovery of oracle-bone inscriptions. However, this research tradition has prevented Chinese scholars from paying enough attention to the relationship between language and writing, making them unable to recognize the nature of writing. This is especially evident in the Chinese studies of Neolithic graphs. As mentioned in Chapter 3, Neolithic graphs from, such as the Jiǎhú 賈湖 (ca. 7000-5500 BC), the Liángzhǔ 良渚 (ca. 3300-2000 BC) and Dàwènkǒu 大汶口 Culture (late period, ca. 3100-2600 BC), are considered to be "writing" by many Chinese scholars because of the similarity in their graphic forms with oracle-bone or bronze signs. However, writing is the

[1] For more discussions see, e.g. Qiu 2000: 102; Shaughnessy 2010: 217.
[2] For details about the development of epigraphy in China see discussion in **2.3.4**.
[3] Táng Lán 唐蘭 1935, 1949, 1979, 2005: 3-5.
[4] *Yīnyùnxué* 音韻學 refers to the study of ancient Chinese phonetics, including the changes over various historical periods, and its development of laws.
[5] *Xùngǔxué* 訓詁學 refers to the study of Chinese classical texts, including interpretation, glossaries and commentaries.
[6] Hé Jiǔyíng 何九盈 1995: 493.

graphic representation of language, and no evidence can demonstrate that these Neolithic graphs represent language or complex communications.

This research tradition creates a further problem with regard to the invention and development of early Chinese writing. Most Chinese scholars argue that writing is the end product of an evolutionary development.[1] From their perspective, in the earliest stage, some individual signs were invented. Neolithic graphs from, for example, the Yǎngsháo 仰韶 Culture and the late Dàwènkǒu 大汶口 Culture, appear to offer good examples. Then, after a long process of accumulation, a complete writing system had finally taken shape. However, the evidence suggests that writing is not the end product of a lengthy development but rather an invention, although it may take some time for this to develop into a mature system. These scholars fail to have a clear theoretical understanding of the nature of writing. Without a connection with language, these Neolithic graphs should be considered as pertaining to notation (e.g., in the Bànpō 半坡 Culture) or iconography (e.g., in the Dàwènkǒu 大汶口 and the Liángzhǔ 良渚 Culture), instead of to writing.

Among these Chinese scholars, Wáng Fèngyáng 王鳳陽 (1989, 2018) is typical. From his perspective, writing was gradually adapted to language, which means that the development of writing was a lengthy process, gradually developing from semantic to phonetic. At the very beginning, there was, according to Wáng, only "pictographic writing" (*túhuà wénzì* 圖畫文字), conveying information by means of simple pictures. The difference between picture and "pictographic writing" is that the former only depicts things, while the latter conveys information by depicting things, serving as memory aids. This "pictographic writing" gradually developed, he argues, into writing that could record language.[2]

His point of view reflects the most common problematical feature in Chinese scholars' studies of writing. In the first place, these scholars have no clear comparative and theoretical understanding of the nature of writing, causing them to confuse writing with the other two graphic recording systems. As mentioned above, the weight of comparative evidence from Mesopotamia, the region in which an incontrovertible writing system appears for the first time, suggests that writing was an invention and, in all its stages of development, at least in part a graphic representation of language. Since the alleged "pictographic writing" represents nonlinguistic information instead of language, it should belong to the other two graphic recording systems —— notation or iconography. For example, Wáng claims that, compared with

[1] Some Chinese scholars, e.g., Lǐ Wànfú 李萬福 (2000), have suggested that writing was invented over a relatively short period of time, but this has not met with wide acceptance (for more details see discussion n **2.3.2**).

[2] Wáng Fèngyáng 王鳳陽 1989: 21-39, 2018: 23-41.

writing that records language, “pictographic writing” is more general and ambiguous. That is, “after seeing an instance of it, although people have roughly the same feeling, the interpretation can be varied.”[1] The alleged “pictographic writing” depicting a climbing goat and plunging overturned horse (**Fig. 1.2-4**) is a good case in point.

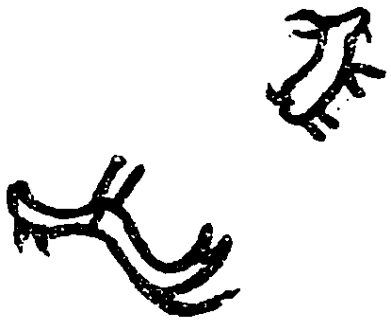

Fig. 1.2-4 The alleged “pictographic writing” depicting a climbing goat and plunging overturned horse[2]

Wáng argues that it alerts people to danger, but the interpretation can be, for example, “Danger! ”, “No entry!”, “It is impossible to pass without the ability of a goat!”, or “Goats can pass, but horses cannot!”.[3] Obviously, this alleged “pictographic writing” is not writing but iconography, since it has no fixed relationship to language, and can be interpreted into language in a wide variety of ways. Likewise, those Neolithic graphs from, for example, the Dàwènkǒu 大汶口 and Wángchénggǎng 王城崗, that he considered to be writing are actually not. Since these Neolithic graphs cannot be demonstrated to be writing, Wáng’s view that writing is the end product of a lengthy development is also untenable.

Moreover, Chinese writing did not undergo a development from semantic to phonetic, and phonetic components appear from the very beginning. As discussed in **5.2**, secondary logograms (logograms derived phonographically) and pseudo-logograms (logograms created solely for a phonetic purpose) were already in evidence in the earliest known stage of Chinese writing. In fact, some scholars, such as Qiú Xīguī 裘錫圭, have already pointed out that *jiǎjièzì* 假借字, that is, a homophonous or semi-homophonous graph used to write another word,[4] appeared at the same time as logograms in Chinese writing.[5]

However, when discussing the origin of writing, Qiú is still influenced by the persistent research tradition. From his perspective, it is a long period of

[1] Wáng Fèngyáng 王鳳陽 1989: 61, 2018: 62.
[2] Wáng Fèngyáng 王鳳陽 1989: 58, 2018: 59.
[3] Wáng Fèngyáng 王鳳陽 1989: 58-61, 2018: 59-62.
[4] For more details see discussions in **5.2.1**.
[5] Qiú Xīguī 裘錫圭 1988: 5, 2000: 6, 2013: 5.

development from the appearance of the first written "signs" to a full-fledged writing system that can record unambiguous sentences in language, and those incapable of fully recording a language are called "primitive writing" (*yuánshǐwénzì* 原始文字). At the level of "primitive writing", writing and pictures were, according to Qiú, mixed together for an extended period.[1] Moreover, Qiú claimed that the distinction between the broad and narrow definitions is nothing more than a difference in terminology. It is not difficult to see that he lacks a clear understanding of the nature of writing, leading to a confusion between writing and iconography. Writing is, on the balance of the attested evidence, most likely to have been an invention, since there is little to no evidence anywhere of systemic development over an extended period of time. Thus, the alleged lengthy process of development from "primitive writing" to full writing does not exist. Even though some logograms are quite pictographic, they are not pictures, because their nature has changed, and they no longer simply represent concrete things, but rather words in language. Qiú's claim that words and pictures coexist is untenable.

Similarly, the preference of a broader definition of writing in Mesoamerican studies also appears to be driven by the research tradition and the focus of the studies themselves. Mesoamerican studies outside of the Maya area mainly focus on complex iconographies. In some cases, it is difficult to make a sharp differentiation between iconography and writing, as seen in the case of the name of the founding father of Copan——Yax K'uk' Mo' (above). Moreover, the study of art enjoys great popularity in Mesoamerican studies. With the latter's inherent focus on art and lesser familiarity with epigraphy and linguistics, there has been a strong tendency to view iconography as a kind of writing and to want to expand the definition of writing to include it, especially in the study of cultures that had no writing system in the traditional sense. As a result, their definition of writing easily neglects the linguistic reference of writing. Thus, it is not difficult to understand their tendency towards a broader definition of writing.

[1] Qiú Xīguī 裘錫圭 1988: 1-2, 2000: 1-3, 2013: 1-2.

2. Academic studies of the origin of writing

To our present knowledge, there seem to be four independent origins of writing, namely in Mesopotamia, Egypt, China and Mesoamerica.[1] The current status of research concerning the origin of these early writing systems will be discussed in this chapter.

2.1 Mesopotamia

Mesopotamia appears to provide the earliest evidence of writing in the world, which is called "archaic writing" or "proto-cuneiform",[2] and documents inscribed on clay or stone tablets using the proto-cuneiform script are called "archaic texts".[3] This early writing first appeared in the city of Uruk and the earliest-known texts were found at the sacred temple precinct Eana in Uruk, which is the world's first true city.[4] These archaic texts date to the end of the fourth millennium BC, but as to the specific time when writing first appeared, scholars' viewpoints vary slightly, that is, ca. 3500-3390 BC;[5] ca. 3400-3300 BC;[6] ca. 3300 BC;[7] ca. 3200 BC.[8] Nissen dates proto-cuneiform to ca. 3300 BC, because archaic texts were excavated in rubbish layers and the earliest rubbish layer with evidence of writing was deposited just before Level IIIc, so the first appearance of writing falls into the time of Level IVa (ca. 3300 BC), at the very end of the Late Uruk period.[9] Woods dates proto-cuneiform to as early as ca. 3500-3390 BC, but as he has pointed out, "this date must be used with caution given it represents a lone sample and various problems are known to complicate radiocarbon dates acquired from the latter half of [the] fourth millennium".[10]

The corpus of archaic texts contains about 5000-6000 tablets,[11] consisting of administrative texts, lexical lists, school texts and accounting exercises.[12] The majority of these tablets are administrative records (over 5000;[13] ca. 90

[1] Postgate et al. 1995: 472; Boltz 2000: 1, 2011: 69; Woods 2010: 17; Chen 2008: 26, 2009: 9, 2017a: 324; 2017b: 52; Regulski 2016: 1.
[2] Michalowski 1996: 33; Whittaker 2001: 12; Nissen 2003: 71; Woods 2010: 35; 2014: 145.
[3] Englund 1998: 16.
[4] Woods 2010:33.
[5] Woods 2010: 34.
[6] Glassner 2003: 45.
[7] Nissen 2015: 113, 118.
[8] Englund 1998: 57; Cooper 2004: 74; Michalowski 2014.
[9] Nissen 2015: 118. For more details about the levels in Uruk during the fourth millennium BC see Nissen 2015: 115.
[10] Woods 2010: 34.
[11] Scholars' opinions vary slightly, such as, ca. 5000 tablets and fragments (Michalowski 1996: 34), 5850 texts and fragments (Englund 1998: 65) and about 1900 belong to the Uruk IV period (Englund 1998: 87), about 6000 tablets and fragments, 5000 of which were unearthed at Uruk (Woods 2010: 35-36).
[12] Englund 1998: 82-212; Cooper 2004: 78; Nissen 2003: 71-76, Woods 2010: 37-42.
[13] Nissen 2003: 71-76.

percent[1]), dealing with economic administration, such as the delivery of goods, and the management of herds and workers.[2] The large quantities of various goods recorded in the texts imply the existence of a complex economic institution[3] and the administrative offices of archaic period include the offices of (a) fisheries, (b) domesticated animals and animal products, (c) labor organization, (d) grain and grain products, and (e) fields.[4] Only a small part of archaic texts are lexical lists and school texts (ca. 15 percent;[5] ca. 670[6] or 650[7]), which are usually larger than administrative tablets.[8] The lexical lists are quite rare (only 15) in the Uruk IV period,[9] and the oldest-known lexical list is the Standard Professions List.[10] The lexical lists can be divided into five categories, that is, (a) designations of places, (b) designations of animals, (c) designations of plants and manufactured products, (d) literature, and (e) designations of persons.[11] These lexical lists and school texts probably played an important role in imparting writing skills.[12]

2.1.1 The language behind the script

Scholars, such as Englund (AD 1952-2020), Nissen, Cooper and Michalowski, argue that representing a spoken language is not the initial and primary purpose of proto-cuneiform.[13] From their perspective, proto-cuneiform may exclusively work for administrative recording,[14] or serve to communicate and store administrative data,[15] or be an aid to memory, that is, an extension of the techniques of accounting.[16] Cooper claims that all early writing systems were not full writing systems in the earliest stage. These early writing systems are used to "represent the extension of language use into areas where spoken language cannot do the job".[17] Michalowski argues that narrative texts in Mesopotamia did not become prevalent until ca. 2700 BC.[18] But in Cooper's view, grammar and syntax were added to the cuneiform system over the centuries and the sequence of signs began to correspond with the linguistic

[1] Woods 2010: 41-42.
[2] Michalowski 1996: 36; Englund 1998: 82-212; Nissen 2003: 71-76; Woods 2010: 37; Nissen 2015: 118.
[3] Nissen 2015: 118.
[4] Englund 1998: 128-212.
[5] Michalowski 1996: 36.
[6] Englund 1998: 82.
[7] Nissen 2003: 71-76.
[8] Englund 1998: 82.
[9] Englund 1998: 86-87. Among these lexical lists, 11 of them are with some certainty, and 3 are securely attested.
[10] Woods 2010: 41-42.
[11] Englund 1998: 90-106.
[12] Michalowski 1996: 36; Nissen 2003: 76.
[13] Englund 1998: 42; Nissen 2003: 71, 2015: 121; Cooper 2004: 80, 83; Michalowski 2014: 146.
[14] Michalowski 2014: 146.
[15] Englund 1998: 42.
[16] Nissen 2015: 121.
[17] Cooper 2004: 83.
[18] Michalowski 2014: 146.

sequence after ca. 2400 BC.[1] Likewise, Woods argues that Sumerian writing mainly consists of logograms while phonetic writing is relatively rare in the very beginning, but from the first quarter of the third millennium, phonograms start to be increasingly significant in the system. And not until the second half of the third millennium did the sequence of graphs represent the sequential order of speech.[2] Because of the restricted representation of language in the early stage, the interpretation of early cuneiform depends, to some degree, on a nonlinguistic feature——the tablet format.[3]

Most scholars, such as Michalowski, Glassner and Woods, assume that Sumerian underlies the earliest texts from Mesopotamia.[4] For example, Glassner argues that phoneticism is present in the earliest Sumerian writing. From his perspective, the final phonetic procedure started in the Uruk IV period by indicating a word through the use of a homophone and working on the basis of the rebus principle. For instance,  GI, the sign for "reed", *gi* in Sumerian, is often used with the meaning of "receipt" (the nominal form of the unrelated verb *gi*) in the administrative texts.[5] It is most likely that, as Glassner alleges, phoneticism finds its origin in the polysemy and polyphony of signs. This evidence of phoneticism indicates to him that Sumerian is the language behind the writing.[6] Likewise, Woods argues that the underlying language of the proto-cuneiform script is Sumerian, which is based on about 15 instances of phonetic writings and the cultural continuity between the late fourth and the mid-third millennium, though the evidence is quite slim. Later the script was adapted to express a wide variety of unrelated languages, such as Akkadian, Elamite and Hittite.[7]

In contrast to this widespread opinion, Whittaker offers a different proposal that the underlying language of the archaic texts is Euphratic, which he describes as an early Indo-European language. Because of the syntactical differences between the language of the archaic texts on the one hand, and historical Sumerian and Akkadian on the other, Whittaker claims that the underlying language of the archaic texts is neither Sumerian nor Akkadian.[8] He points out that the language behind the Uruk IV texts may, thus, be Indo-European. He argues that unmotivated values of the descendants of archaic signs are Indo-European, and compares them with logographic values of signs attested in 3rd-millennium texts, which also resemble reconstructed forms of

[1] Cooper 2004: 81.
[2] Woods 2010: 43-44.
[3] Michalowski 1996: 35; Cooper 2004: 81-82.
[4] Michalowski 1996: 35; Glassner 2003; Woods 2010.
[5] Glassner 2003: 144-146. For a Different view see Englund 2005: 113-116.
[6] Glassner 2003: 47, 147.
[7] Woods 2010: 33, 44-45.
[8] Whittaker 2001: 12-15.

equivalent Indo-European words. From his perspective, the Euphratic writing system was adopted by Sumerians at the end of Uruk IV and at this time it was basically a system of logograms, consisting of somewhat less than 900 signs. These signs are divided into two categories: (a) elemental, consisting of a single graphic element and (b) composite, containing more than one element.[1]

2.1.2 The nature of the script

Signs[2] in archaic proto-cuneiform are mostly ("pictographic") logograms,[3] consisting of semantic and phonetic elements.[4] These logograms depict an entire object or animal, or part of an object or animal.[5] Phonograms appear through the use of the rebus principle, which uses the pronunciation of a logogram to represent elements of language that are not easily depicted, such as grammatical affixes and foreign words. Another group of signs are determinatives, often called classifiers, which serve to indicate the semantic class of the words.[6] After the archaic period (Uruk IV-III), cuneiform signs became completely abstract in appearance[7] and many signs were used via rebus for words after ca. 2600 BC.[8]

Proto-cuneiform is a productive system. The two main ways to create new signs are (a) by graphically changing a discrete sign, and (b) by forming sign combinations.[9] Basic signs can be combined to be compound signs in the following ways: (a) doubling of a sign by superimposition or overlapping, (b) tripling of a basic sign, with the three signs in a crossed position, (c) the association of two different basic signs, principally through parataxis, (d) the juxtaposition of three different basic signs and (d) the overlapping of two or more basic signs.[10] Most of these compounds are +S+S (Semantic + Semantic) in type. After the archaic period, +S+P (Semantic + Phonetic) type becomes more frequent, while complete phonetic compounds are still rare.[11] Logograms are used to write substantives, adjectives and verbs, and grammatical particles as well as foreign words and names are written phonetically.[12]

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[1] Whittaker 2001: 15-38.

[2] Scholars' opinions on the repertory of archaic signs vary, such as ca. 800 separate "symbols" (Michalowski 1996: 34); ca. 1900 "ideograms" (Englund 1998: 71); over 1200 "signs" (Nissen 2003: 71); ca. 900 "logographic signs" (Cooper 2004: 78); and ca. 900 "graphs" (Robson 2007: 41; Woods 2010: 37).

[3] Michalowski 1996: 35; 2014: 146; Cooper 2004: 84: Woods 2010: 43.

[4] Cooper 2004: 89-90; Woods 2010: 43.

[5] Englund 1998: 71; Glassner 2003: 126-127.

[6] Woods 2010: 43.

[7] Cooper 2004: 84; Michalowski 2014: 146.

[8] Cooper 2004: 84.

[9] Englund 1998: 67-68; Glassner 2003: 126-130.

[10] Glassner 2003: 128-130.

[11] Cooper 2004: 89-90; Michalowski 1996: 35.

[12] Michalowski 1996: 35; Cooper 2004: 89-90.

Numerical and metrological notations form an important part of the archaic texts, and ca. 60 to 70 signs are used to express numerals.[1] There are five numerical systems employed in the accounts of the archaic period, including the sexagesimal or the bisexagesimal system, the ŠE system, the GAN_2 system, and the still unclear EN system. Scribes differentiated clearly between these systems. The sexagesimal or the bisexagesimal system as well as their derivatives were used for discrete (countable) objects. The ŠE system and its various derivatives qualified capacity measures of cereals, while the GAN_2 system was used to record field measures.[2] The system of time notation for the Uruk period includes cardinal time notations, ordinal time notations, as well as grain and time notations.[3]

2.1.3 Precursors and development of the script

With regard to the origin of cuneiform writing, most scholars today lean towards an accounting origin. Scholars, such as Schmandt-Besserat, Englund, Nissen and Robson, argue that the cuneiform script derived from preliterate accounting devices.[4] These accounting devices are known popularly as "tokens", which developed in the process of urbanization during the Middle and Late Uruk periods.[5] From their perspective, some of the simple geometrical clay artifacts represent the precursors of writing in Mesopotamia, and because of this, Mesopotamian cuneiform began with numerical signs. This is due to the following two aspects:

> "First, the simple tokens were gathered in discrete assemblages and encased in clay balls in the periods immediately before the emergence of proto-cuneiform ca. 3300 BC, and these balls were then sealed with impressions from cylinder seals—the hallmark of 3000 years of Babylonian administrative history. Second, the plastic tokens were themselves impressed on the outer surfaces of some balls, leaving marks which, both physically and also in their context, conform exactly to the impressed numerical signs of the early so-called numerical tablets and the curvilinear tradition of Babylonian accounts down to the Ur III period at the end of the third millennium."[6]

With respect to the periodization of the development of proto-cuneiform, the most detailed one is provided by Englund: (1) early tokens (before ca. 3400 BC), (2) clay envelopes (ca. 3400-3300 BC), (3) early numerical tablets (ca. 3300-

[1] Michalowski 1996: 34; Englund 1998: 71; Woods 2010: 40.
[2] Englund 1998: 111-120.
[3] Englund 1998: 121-127; Robson 2007: 41; Woods 2010: 40.
[4] Schmandt-Besserat 1992, 2010, 2014; Englund 1998, 2004; Nissen 2003: 77-78; Robson 2007: 39-41.
[5] Englund 1998: 42-55, 2004: 25.
[6] Englund 2004: 26.

3250 BC), (4) late numerical tablets (ca. 3250-3200 BC), (5) numero-ideographic tablets (ca. 3200 BC), (6) early proto-cuneiform (ca. 3200-3100 BC, Uruk IVa), (7) developed proto-cuneiform (ca. 3100-3000 BC, Uruk III), and (8) late proto-cuneiform (ca. 2800-2700 BC, Early Dynastic I).[1] From his perspective, the "pictograms" representing the objects of the transaction appeared at ca. 3200 BC, whose corpus was about 900. Five basic numerical sign systems were employed at the beginning of this period (Uruk IVa). The initial phase of this writing system is only attested in southern Babylonia, at Uruk. The following Uruk III period (ca. 3100-3000 BC) witnessed the refinement and abstraction of early proto-cuneiform. This developed proto-cuneiform script is attested throughout Babylonia, and served the accounting needs of a complex administration. The earliest apparently multivalent use of proto-cuneiform to write Sumerian words in personal names was the most important development in the Early Dynastic I period (ca. 2800-2700 BC). On this basis, most scholars today assume that there are three main stages in the development of the archaic script, that is, (1) before Uruk IV, clay tokens representing goods were used for accounting and the first explicit record of the material objects of accounting; (2) the Uruk IV, recording not only the objects and their quantities, but also institutional agents and the type of transaction; and (3) Uruk III, bearing simplified and more abstract graphs.[2]

On the basis of his Euphratic proposal (above), Whittaker argues that three ethnic groups, Euphratean, Sumerian and Akkadian, successively play an important role in designing the earliest writing system in the period from ca. 3200 to ca. 2500 BC and the development of writing in this period can be divided into three stages: (1) The first stage is Uruk IV, in which Euphrateans invented a writing system of logograms, and such signs used for their phonetic value ("rebus") already appeared in this period. (2) The second stage is Uruk III and the Early Dynastic period, in which Sumerians invented suffixed phonetic markers and complements to correctly read polyvalent signs. (3) The third stage is the Fara period (ca. 2600-2500 B.C.), in which Akkadians created a syllabary for the resolution of the ambiguities of logographic writing.[3]

[1] Englund 1998: 214-215.
[2] Michalowski 1996: 33; Glassner 2003: 122-123; Cooper 2004: 76; Robson 2007: 41-42; Woods 2010: 35-36.
[3] Whittaker 2001: 38.

2.2 Egypt

It is generally believed that the earliest known Egyptian writing comes from Tomb U-j at Abydos, dating to the end of the fourth millennium BC. There are two sets of radiocarbon dates which place the Abydos material slightly later[1] and slightly earlier[2] than the Uruk IV tablets (ca. 3200 BC).[3] On this basis, scholars date the Tomb U-j inscriptions to ca. 3320 BC;[4] ca. 3300 BC;[5] ca. 3250 BC;[6] and ca. 3200 BC.[7] Most scholars argue that the hieroglyphic script may have appeared not long before the existence of Tomb U-j.[8] For example, Jiménez-Serrano argues that most signs in Tomb U-j refer to toponyms of neighboring areas of Abydos. At the end of the Predynastic period, the Upper Egyptian kingdom expanded to the north and south, and the territories recently integrated or conquered were identified by the "fetish" (symbol) of the main divinity worshiped in the area. It is at this point that some logograms have their origin, concretely in the adoption of fetishes as elements full of linguistic meaning.[9] Therefore, during the Naqada III period (ca. 3200-3000 BC), writing developed at Abydos, most probably some years before the rule of the monarch buried in Tomb U-j.[10]

However, some scholars, such as Dreyer (AD 1943-2019), prefer an earlier date, late Naqada II (ca. 3500-3200 BC). Dreyer argues that, similar to the labels from Tomb U-j, even earlier ink markings on clay vessels dating to Naqada IId (ca. 3400-3300BC) can be identified as writing, such as the SKY and LIGHTNING_BOLT compound hieroglyph on the jar from Tomb U-546 at Abydos (**Fig. 2.2-1**), which is, as he alleges, a short form for the term "west".[11] According to his view, the earliest known use of writing can be found in various seal impressions dated to Naqada IIc or Naqada IId.[12] For example, the FISH sign in **Fig. 2.2-2** is a phonetic writing for *inu* 'delivery', which is probably because the plural form of FISH (singular *in*) is also pronounced as *inu*.[13] However, Stauder points out that the FISH would only later have this phonetic value. There is no evidence whatsoever, he says, that the FISH already had this value at the time, nor that there was any phonetic writing at the time. Dreyer's

[1] Boehmer 1991: 223–230; Boehmer et al. 1993: 63-68.
[2] Görsdorf et al. 1998: 169-175.
[3] Baines 2004: 154; Regulski 2016: 4.
[4] Kahl 2001b: 103, 2003b: 113; Stauder 2010: 142.
[5] Dreyer 2003: 123; MacArthur 2010: 119; Wengrow 2011: 99, 102.
[6] Regulski 2016: 1.
[7] Kahl 2003a: 127; Baines 2004: 154; Dreyer 2008: 14.
[8] Kahl 2003b: 131; Baines 2004: 153; Regulski 2008: 999, 2016: 4; Jiménez-Serrano 2015: 22.
[9] Jiménez-Serrano 2015: 25.
[10] Jiménez-Serrano 2015: 27.
[11] Dreyer 2000: 14, 2003: 123-124, 2008: 17.
[12] Dreyer 1998: 181; 2000: 14-15, 2003: 124, 2008: 18.
[13] Dreyer 1998: 181; 2008: 18.

hypothesis is purely speculative, based entirely on a back-projection of much later values.[1]

Fig. 2.2-1
The SKY and LIGHTNING_BOLT compound hieroglyph on the jar from Tomb U-546, Abydos[2]

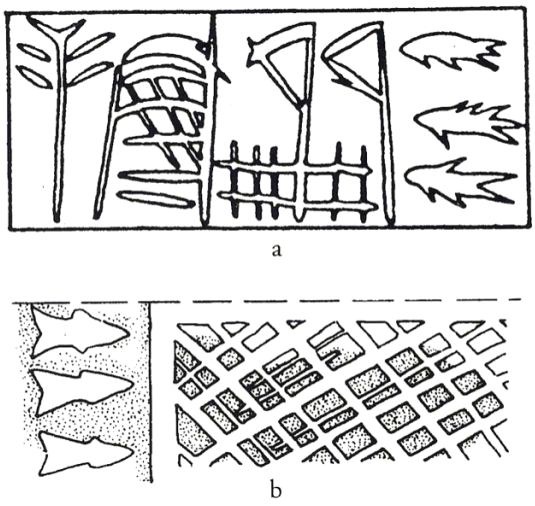


Fig. 2.2-2 Seal impressions of Naqada IIc-d [3] (a, provenance unknown; b, Abydos tomb U-127)

There are at least three forms of record-keeping in the tomb —— seal impressions, painted signs on pottery vessels and small incised labels (tags),[4] and possible writing is found both on pottery vessels and labels. Ink inscriptions consist of one or two large signs, and these signs mark, Dreyer and MacArthur allege, the place of origin of economic estates founded by various

[1] Personal communication, May 2023.
[2] Dreyer 2003: 125.
[3] Dreyer 1998: 181; 2008: 18.
[4] Dreyer 1998; Baines 2004: 154-157; MacArthur 2010: 118-120; Stauder 2010: 138; Wengrow 2011: 102.

kings or the residence of the king.[1] The labels are connected with objects as a form of identification. Some labels are marked with numbers, which probably represent the size of fabrics and the amount of grain. Other labels bear the same kind of signs with ink inscriptions of clay vessels, which may indicate the place of origin of the goods.[2] From the beginning of the First Dynasty (King Narmer, ca. 3000 BC), the "year label" appeared, which names the year after important events or rituals, and survived at least into the New Kingdom (ca. 1600-1100 BC).[3] At first, the labels were inscribed in brief form, and gradually they started to record more information for each year.[4]

Some scholars, such as Regulski and Baines, put emphasis on the differences between these two groups of inscriptions. Regulski claims that these two groups are considerably different and the following features separate the ink inscriptions from the incised labels: "1. a to a large extent different repertoire of signs; 2. an almost complete absence of parallels in the later record; 3. the lack of a phonetic writing system; 4. a different writing technique and a different scale".[5] Based on these differences, Regulski argues that the incised labels represent the earliest hieroglyphic writing in Egypt, while the ink inscriptions represent another tradition.[6]

Baines argues that the signs on the jars are very large, and this large scale of signs indicates that they represent some sort of display rather than convey information only, because the large scale contrasts strongly with the tiny labels.[7] The representational repertories of the signs on the labels and the pottery overlap considerably. Baines claims that "the two media and modes of inscription of the U-j material belong to the same overall system and constitute two graphically distinct but systematically almost identical and mutually convertible forms. Comparable duality, plurality, and convertibility is known from later Egyptian writing; the modern names for the principal script forms are 'hieroglyphic' and 'hieratic'."[8] From his perspective, the two types of writing of Tomb U-j are the earliest examples of the Egyptian practice of using distinct forms for different purposes.[9] Therefore, writing was applied in display and administrative use from the very beginning in Egypt.[10]

[1] Dreyer 1998: 180, 2000: 12, 2008: 14; MacArthur 2010: 118-120.
[2] Dreyer 1998: 180, 2000: 12-13, 2003: 123, 2008: 15-16; Kahl 2003b: 114-115; MacArthur 2010: 118-120.
[3] Dreyer 2000: 16, 2003: 124, 2008: 19-21; Baines 2007: 125; Wengrow 2011: 103.
[4] Baines 2007: 125.
[5] Regulski 2008: 992.
[6] Regulski 2008: 992.
[7] Baines 2004: 158, 2007: 118.
[8] Baines 2004: 160.
[9] Baines 2004: 158-161.
[10] Baines 2007: 118. For more details on the early function of Egypt writing see discussion in **2.5**.

2.2.1 The nature of the script

Scholars, such as Baines, Stauder, Wengrow and Regulski, argue that the inscriptions at Tomb U-j represent a formative stage of the Egyptian writing system, and its capacity for communication is limited.[1] Dreyer divides the signs on clay vessels into two groups: (1) primary signs (such as a scorpion, falcon or other animals), which can appear alone, and (2) secondary signs (for example, a tree or plant), which appear only in combination with a primary sign. In his viewpoint, the inscriptions on the clay vessels record the origin of the products, and the sign group "secondary sign (tree) + primary sign (animal)" could be interpreted as "the plantation of the king", and animal hieroglyphs should be interpreted as royal names, and the most frequently used SCORPION sign should be the name of the tomb owner: King Scorpion I.[2]

However, some scholars, such as Kemp, Kahl and Breyer, claim that the reading of the animal signs as royal names is problematic.[3] They prefer to read these entries as toponyms. For example, Kahl rejects the reading of the animal signs as a king's name for the following reasons: (1) The TREE sign on an early seal appears together with a temple (**Fig. 2.2-2a**), that is, together with a location. (2) The SHIP and BAG signs, working as "primary signs" like "animal" signs, are interpreted as place names by Dreyer, so "animal" signs can also refer to place names. (3) The "subdivided rectangle" sign cannot simply be equivalent to the hieroglyph N 39 for *ši* (**Fig. 2.2-3**) and, moreover, *ši* meaning "residence" is only attested in the Old Kingdom, not for the early period. (4) If Dreyer's reading of the royal name were correct, the products for Tomb U-j would only have come from the vicinity of Abydos and some distant areas, such as Buto or Bubastis in the Delta or Near East, but have no reference to deliveries from Upper Egypt. (5) There are only deliveries from the plantations of the older predecessor kings "Finger Snail", "Fish" and "Bull's Head Standard", but not from the plantations of the younger predecessors "Elephant", "Stork" and "Canid".[4]

[1] Baines 2007: 117; Stauder 2010: 147; Wengrow 2011: 102; Regulski 2016: 1, 4.
[2] Dreyer 1998, 2000, 2003, 2008.
[3] Kemp 2000; Kahl 2001: 116-126; Breyer 2002.
[4] Kahl 2003b: 117-119.

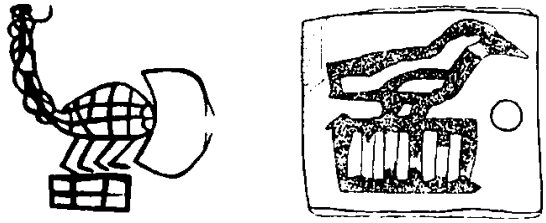


Fig. 2.2-3
The hieroglyph N 24 with a scorpion[1] (left) and N 39 with a falcon[2] (right) in Tomb U-j, Abydos[3]

Moreover, Kahl argues that the main sign SCORPION on labels 141 and 145[4] (**Fig. 2.2-4**) and pottery inscriptions such as j1/1 and j5/6[5] (**Fig. 2.2-5**) represents a location: "the district of the Scorpion".

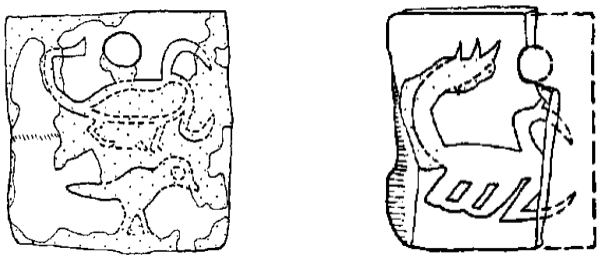
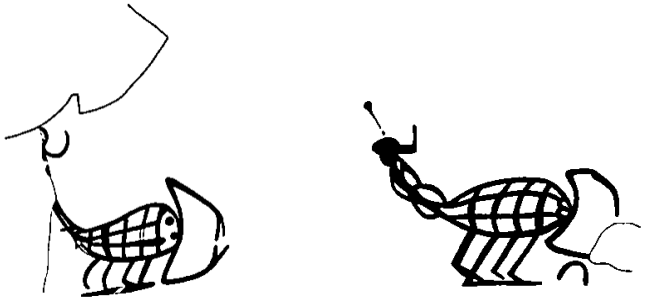


Fig. 2.2-4
The SCORPION sign on labels 141 (left) and 145 (right), Abydos[6]



j1/1 j5/6

Fig. 2.2-5
The SCORPION sign on clay vessels, Abydos[7]

In Kahl's view, stone inscriptions from the temple district of Hierakonpolis or of unknown origin play a key role in understanding the SCORPION sign. The SCORPION appears on stone vessels together with hieroglyph D 32. Sign D 32

[1] Dreyer 1998: 47, fig. 33c.
[2] Dreyer 1998: 127, fig. 79.108.
[3] For illustrations see also Kahl 2003b: 128.
[4] Dreyer 1998: 130, fig. 80, no. 141, 145.
[5] Dreyer 1998: 53-58, fig. 34-39.
[6] Dreyer 1998: 130, fig. 80, no. 141, 145.
[7] Dreyer 1998: 56, fig. 36.

on stone vessels of the 0th Dynasty consists of four different combinations (**Fig. 2.2-6**): (1) with a scorpion, (2) with a falcon on a sickle-shaped base, (3) with a catfish, and (4) with the Seth animal.[1] The Seth animal and the falcon on a sickle-shaped base can be explained as the god Seth and the god Nemti. The CATFISH can be explained as a deity on the basis of the annual labels of the First Dynasty, on which sacred objects are offered to the king. Similarly, the SCORPION that occurs together with sign D 32 should also be regarded as the name of a deity, and these sign groups should be interpreted as "the visit of the deity". The sign group "subdivided rectangle+scorpion", interpreted by Dreyer as "residence of the king", should be interpreted as "the district of the Scorpion deity". In other words, King Scorpion I did not exist at all.[2] However, Regulski argues that this new interpretation can be well applied to the labels, but it is not quite reasonable for reading the painted entries on the vessels.[3]

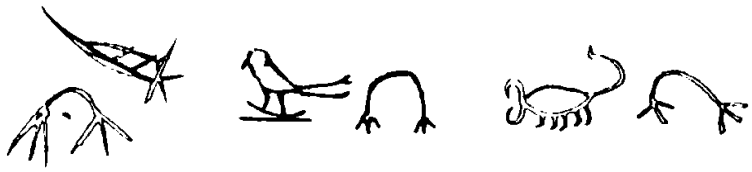


Fig. 2.2-6
The sign D 32 with a god's name on stone vessels from the 0th Dynasty[4]

Scholars, such as Dreyer, Kahl and MacArthur, argue that logograms, phonograms and determinatives are attested in early inscriptions before the First Dynasty.[5] Signs used to write an entire word or a word base are called semograms or logograms, and most words are written as logograms.[6] Phonograms are used in any word for notating mono- or biconsonantal phonemes, and they are generally established according to the rebus principle.[7] For example, phonetic spellings are attested on some labels that are incised with a snake above mountain peaks. The SNAKE serves as a reading aid to indicate the first consonant of the word for mountain (**Fig. 2.2-7**).[8]

[1] Green, F.W. 1913: 266-268. (Quote from Kahl 2003b: 128) On an Early Dynastic Vase in the Fitzwilliam Museum. In: Edmund Crosby Quiggin (ed.), *Essays and Studies presented to William Ridgeway on his sixtieth birthday*, Cambridge: The University press. Available at: https://archive.org/details/essaysstudiespre00ridg/page/n9/mode/2up
[2] Kahl 2003b: 127-129.
[3] Regulski 2008: 990-991.
[4] Kahl 2003b: 128.
[5] Dreyer 1998: 181; Kahl 2001b: 116, 2003a: 130; MacArthur 2010: 120.
[6] Kahl 2001b: 116.
[7] Dreyer 1998: 181, 2000: 13-14, 2008: 16-18; Kahl 2003a: 129; Jiménez-Serrano 2007: 59-63; Wengrow 2011: 103.
[8] Dreyer 2000: 13-14, 2003: 123.

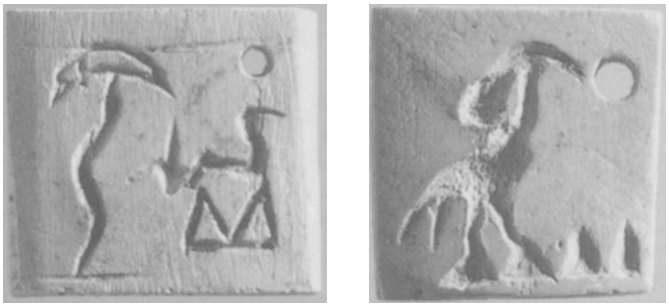


Fig. 2.2-7
Incised labels with snake and mountain from Tomb U-j, Abydos[1]

Phonograms are divided into monoconsonantal phonograms, biconsonantal phonograms and phonetic complements. Kahl argues that the earliest biconsonantal phonograms known at present appear on two labels from Tomb U-j, and others are not attested until the reign of King Narmer. The use of monoconsonantal phonograms is certainly attested since King Iry-Hor, and the stock of these signs was almost complete during the reign of King Den.[2] But Jiménez-Serrano argues that examples of uniconsonantal, biconsonantal and triconsonantal signs can be found in the inscriptions of Tomb U-j.[3]

Determinatives are semograms that are used to classify the meaning of words. Determinatives, as Kahl argued, seem to have been used in the inscriptions from Tomb U-j. For example, some labels display an elephant standing on a mountain range, which can be read as the place name "Elephantine" (**Fig. 2.2-8**), and the sign for mountain range functions as a determinative.[4]

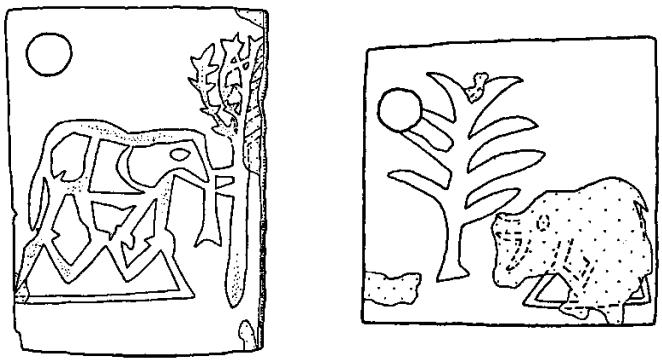


Fig. 2.2-8
Labels with elephant standing on a mountain from Tomb U-j, Abydos[5]

[1] Dreyer 2000: 124.
[2] Kahl 2001b: 119-122.
[3] Jiménez-Serrano 2007: 60.
[4] Kahl 2001b: 118.
[5] Dreyer 1998: 119, fig. 76.59 and 60. For illustrations see also Kahl 2001b: 118.

Complements are phonograms that serve as reading aids, and they also served as indicators for syllable boundaries, especially in the early period of hieroglyphic writing.[1] The earliest attested case of a phonetic complement dates to the time of King Sekhen/Ka.[2]

Most scholars working on the linguistic features of the earliest Egyptian writing argue that determinatives appeared at the time of Tomb U-j, but Jiménez-Serrano argues that only two types of signs, logograms and phonograms, were used in that early period.[3] In his viewpoint, signs found on pottery vessels and labels in Tomb U-j are part of the same system of writing. The origin of the earliest logograms is diverse: the first group consists of numerals, and the second is made up of those signs evolved from artistic representations, mainly toponyms, buildings, or sacred objects. Phonograms came into existence together via the rebus principle, and examples of uniconsonantal, biconsonantal and triconsonantal signs can be found in the inscriptions of Tomb U-j. There was, as Jiménez-Serrano alleges, no determinative in the earliest Egyptian writing. The case of "Elephantine" (above) (**Fig. 2.2-8**) should not be divided into two different signs but function as a single sign. The hill sign does not work as a determinative, because "Elephantine" was an island. Determinatives were invented to solve the confusion caused by homophony and also used to mark the end of the words. But at the time of Tomb U-j, the probability of homophony in Egyptian writing was quite small and the texts were very short, so that there was no need to invent determinatives.[4]

2.2.2 Precursor and development of writing

With regard to the origin of Egyptian writing, Regulski argues that at the time when the Egyptian writing system emerged, various communication systems already existed locally. The writing system might develop at the expense of other earlier and local traditions, such as the early notation systems. However, the earlier systems were not immediately replaced by the early writing system, but were partly used alongside the writing system for some time.[5] MacArthur claims that there was an iconographic revolution at the beginning of the fourth millennium BC, which laid the foundation for the emergence of writing at the end of the Predynastic period in Egypt. Pot marks, rock drawings, decorated pottery, cylinder seals and decorated ceremonial objects are precursors of Egyptian writing. Although some motifs on rock drawings and images on

[1] Kahl 2003a: 130.
[2] Kahl 2001b: 119-122.
[3] Jiménez-Serrano 2007: 47.
[4] Jiménez-Serrano 2007: 59-63.
[5] Regulski 2008: 1000-1001.

decorated pottery resemble later hieroglyphic signs, they do not represent known words and cannot be considered to be writing.[1]

The early development of writing in Egypt is supposed to be from the first appearance of the signs to the first known continuous text, namely from the late Predynastic period (Tomb U-j) to the late 2nd Dynasty, ca. 2700 BC (King Djoser).[2] The basic elements of the entire writing system were mostly established in the earliest writing found in Tomb U-j.[3] The corpus is limited to names of places and prestigious beings (gods and rulers). In Stauder's viewpoint, the focus on names suggests that the earliest writing appeared as a local development and was deeply rooted in the emblematic modes of representation, which was generally found in late fourth-millennium Egypt.[4] The evidence of writing became more plentiful in the early First Dynasty (ca. 3200-3000 BC). Writing began to represent language in more aspects and the scope of writing extended to private names and a variety of words, such as for administrative entities and commodities. Phoneticization developed rapidly with the help of the rebus principle: signs representing the consonantal phonemes of the Egyptian language are attested by the early or mid-First Dynasty (ca. 3100-3000 BC).[5] The sign corpus had been extended from the 51 identifiable signs of Tomb U-j at Abydos to about 1,000 signs in the mid-First Dynasty.[6]

A developed form of the system is not discernible before King Sechen/Ka (ca. 3040 BC), or perhaps not even before King Den (ca. 2900 BC).[7] All the functions of hieroglyphs were attested for the first time in the time of King Sechen/Ka, and the syllabary was almost complete during the reign of King Den.[8] Determinatives were invented as a result of a major development in the invention of phonograms to solve the problems of homophony, probably during the reign of King Ka or shortly before.[9] The increase of phonetization was also shown in the reduction of the sign corpus, from about 1000 signs to a few hundred signs, the abandonment of a large number of logograms, lexicon changes, and the higher complexity of grammatical constructions.[10] Signs representing a discontinuous sequence of two consonantal phonemes were developed before the Third Dynasty (ca. 2750 BC).[11] There was still evidence of

[1] MacArthur 2010: 115-118.
[2] Kahl 2001: 125, 2003a: 127; Baines 2007: 117; Regulski 2018:986, 2016: 1.
[3] Jiménez-Serrano 2007: 65, 2015: 24.
[4] Stauder 2010: 141.
[5] Stauder 2010: 146.
[6] Regulski 2016: 8-15.
[7] Kahl 2001: 125, 2003a: 131.
[8] Kahl 2001: 125, 2003a: 131.
[9] Jiménez-Serrano 2007: 65, 2015: 24; Stauder 2010: 146.
[10] Regulski 2016: 8-15.
[11] Stauder 2010: 146.

a writing reform in the reign of King Djoser (ca. 2700 BC).[1] By the mid-third millennium Egyptian writing was able to notate the accurate reading, in which semantic and phonetic information, both incomplete, complemented each other.[2]

2.2.3 Controversy on the earliest example of Egypt writing

Contrary to what has been claimed above, Stauder argues that the inscriptions of Tomb U-j are not writing, since they did not yet represent language.[3] The readings proposed by the above-named scholars are on the basis of writings from much later times, such as the Old Kingdom (ca. 2700-2200 BC), which is, from Stauder's perspective, problematic.[4] For example, according to later spellings, ELEPHANT_HILL (Stauder: ELEPHANT.on.HILL) has been read as *3bw* 'Elephantine' (see above), interpreting ELEPHANT as a radicogram (a sign standing for a linguistic root), and HILL as a semantic determinative or classifier, categorizing the graph as a place name. In Stauder's view, this reading postdate Tomb U-j by almost a millennium. In times contemporary to Tomb U-j, ELEPHANT_HILL is found, such as, in rock inscriptions in the Qena bend and on a carved ivory plaque from Hierakonpolis. In none of these contemporary contexts does the reading *3bw* 'Elephantine' make sense. It appears to be, as Stauder alleged, a visual icon with significations conceivably to do with domination and power, not a writing of two signs. So the Tomb U-j inscriptions should relate to broader the visual language of their own period, not to later writing, and ought to be interpreted accordingly. The Tomb U-j signs are labeled by Stauder as a non-linguistic ("non-glottic"), function-specific system of signs.[5]

Stauder argues that the earliest Egyptian writing was attested in the late 0th Dynasty (ca. 3150 BC),[6] with a limited repertory of signs.[7] Early phonetic signs are found notably in place names embedded in complex visual compositions on hard-to-work prestige objects, alongside emblematic signs. Strongly phonetic spellings are found in the so-called "delivery notations" associated with the royal name on vessels containing luxury products.[8] Through phonetic writing, an innovative and restricted visual language tightly associated with kingship, these products were marked and distinguished.[9] By marking prestigious

[1] Kahl 2001: 125, 2003a: 131.
[2] Stauder 2010: 146.
[3] Stauder 2022a: 35-37.
[4] Stauder 2021: 44-45, 2022b: 227-230.
[5] Stauder 2021: 47
[6] Stauder Stauder 2021: 31, Stauder 2022a: 37-39, 2022b: 217.
[7] Stauder 2021: 43, Stauder 2022a: 37.
[8] For more details on "delivery notations" see discussions in **2.5**.
[9] Stauder 2022b: 217.

products, this writing was part of a visual display of power.[1] One of the earliest examples of Egyptian writing is on the Bull Palette (ca. 3200-3100 BC; **Fig 2.2-9**). Two signs are set apart from the rest of the pictorial surface by the framing WALLED_ENCLOSURE (Stauder: WALLED.ENCLOSURE), indicating that they stand for a toponym LION$^{n(w)}$ (Stauder: LION-*nw*).[2]

From the beginning of the First Dynasty (ca. 3100-2900 BC), writing was extended into other areas of application, such as, the names of individuals on funerary stelae or on seals. From the time of Aha's successor, phonetic signs are attested for three-quarters of the phonemes of the Egyptian language. Signs representing sequences of two consonants would multiply during the following centuries, while the system never ceased to expand semantically through the addition of logograms and semantic indicators or classifiers. The repertory thus grew rapidly to exceed more than 1,000 signs. Around 2700 BC, the first complete sentences are recorded, primarily expressing the relationship of the king with the gods. At that time, the dominant textual format was the list, and continuous texts would become more common only from 2500 BC. Around 2700-2600 BC, numerous "archaic" signs were abandoned, likely evidence of an overhaul of the system as writing continued to expand its functional scope.[3]

Fig 2.2-9
The Bull Palette[4]

[1] Stauder 2022a: 37-39.
[2] Stauder 2022a: 36, Stauder 2022b: 241-242. For more details see discussions in **2.5**.
[3] Stauder 2022a: 39-41.
[4] https://en.wikipedia.org/wiki/Bull_Palette#/media/File:Palette_with_Bull-E_11255-IMG_9459-9466-gradient.jpg. See also Stauder 2022a: 37, figure 15; 2022b: 243, figure 3.

2.3 China

2.3.1 The origin of Chinese writing

Chinese academic studies on the origin of Chinese writing can be traced back to the *Shuōwén jiězì* 說文解字 by Xǔ Shèn 許慎 in the Eastern Hàn Dynasty. The discussion in this chapter focuses on the studies from the 20th century. From the early 20th century to the 1930s, Chinese scholars explained the origin of Chinese writing primarily based on the legends recorded in ancient Chinese literature. Their viewpoints can be divided into four groups: (1) the theory of knotted strings (*jiéshéng shuō* 結繩說), (2) the theory of Bagua (*bāguà shuō* 八卦說), (3) the theory of the *Hétú Luòshū* (*Hétú Luòshū shōu* 河圖洛書說), and (4) the theory of Cāng Jié 倉頡's invention of writing (*Cāng Jié zàozì shuō* 倉頡造字說).

(1) The theory of knotted strings (*jiéshéng shuō* 結繩說)

This theory is mainly based on the records in the Jìcí 繫辭 of the *Zhōuyì* 周易:[1]

> 上古結繩而治，後世聖人，易之以書契，百官以治，萬民以察.[2]
>
> *Shànggǔ jiéshéng érzhì, hòushì shèngrén, yìzhī yǐ shūqì, bǎiguān yǐzhì, wànmín yǐchá.*
>
> In ancient times, people used knotted strings to govern. Later generations of saints exchanged them [the knotted strings] for written engravings. The officials could use them for administrative work, and the people used them to observe affairs.

Proponents of this theory, such as Xú Dàozhèng 徐道政 (AD 1866-1950) and Zhū Zōnglái 朱宗萊 (AD 1881-1919), argue that making knotted strings was the ancient people's way to keep records.[3] Chinese writing allegedly originated from these knots.[4] To record big events, large knots were made, and to record small events, small knots were made. Their understanding of the way of

[1] *Zhōuyì* 周易, usually translated as *Changes of Zhōu,* is traditionally assumed to be a divination text of the Western Zhōu period (ca. 1046-771 BC), but on the basis of their rhyming behavior and lexicon, it should be not before the Spring and Autumn period, maybe in some parts only during the Warring Sates period. Jìcí 繫辭, usually translated as Attached Verbalizations, is a commentary on *Zhōuyì* 周易, and was probably written between the Warring States period (ca. 475-221 BC) and the early Western Hàn Dynasty (ca. 202 BC- AD 8).

[2] *Zhōuyì* 8 • *Jìcí xià* 周易 8 •繫辭下 (Shànghǎi gǔjí chūbǎnshè 上海古籍出版社 1997: 87).

[3] Xú Dàozhèng 徐道政 1917: 1-2; Zhū Zōnglái 朱宗萊 1918: 1.

[4] For a similar example see khipu in **1.2**.

knotting mainly derived from the annotations of the *Zhōuyì* 周易 written by Zhèng Xuán 鄭玄 of the Eastern Hàn Dynasty:[1]

> 結繩為約，事大，大結其繩，事小，小結其繩。[2]
>
> *Jiéshéng wéiyuē, shìdà, dàjié qíshéng, shìxiǎo, xiǎojié qíshéng*.
>
> When knotting strings in order to make a contract, large big knots are knotted for big events, and small knots are knotted for small events.

(2) The theory of Bagua (*bāguà shuō* 八卦說)

Scholars, such as Hé Zhòngyīng 何仲英, argue that Bagua is the origin of Chinese writing.[3] Bagua refers to eight graphs used in Taoist cosmology to represent the fundamental principles of reality, and are also called Eight Trigrams in English. Each trigram consists of three lines, — representing *yáng* 陽, - - representing *yīn* 陰. The eight trigrams are as follows:

qián 乾 (☰), *kǎn* 坎 (☵), *gèn* 艮 (☶), *zhèn* 震 (☳),

xùn 巽 (☴), *lí* 離 (☲), *kūn* 坤 (☷), *duì* 兌 (☱).

This view is primarily based on records in the Jìcí 系辭 of the *Zhōuyì* 周易:

> 古者包犧氏之王天下也，仰則觀象於天，俯則觀法於地，觀鳥獸之文，與地之宜，近取諸身，遠取諸物，於是始作八卦，以通神明之德，以類萬物之情.[4]
>
> *Gǔzhě BāoXīshì zhī wàngtiānxià yě, yǎng zé guānxiàng yútiān, fǔ zé guānfǎ yúdì, guān niǎoshòu zhīwén, yǔ dìzhīyí, jìnqǔ zhūshēn, yuǎnqǔ zhūwù, yúshì shǐzuò bāguà, yǐtōng shénmíng zhīdé, yǐlèi wànwù zhīqíng*.
>
> In ancient times, Bāo Xī 包犧 ruled over all-under-heaven.[5] Looking up, he observed celestial phenomena in the heavens, and looking down, he observed models on earth. He observed the patterns of the birds and beasts as well as their suitability to the particular environment. Close by, he drew on his own body, and further away, he drew on other things [to get symbols]. And then he created the

[1] The annotations of *Zhōuyì* 周易 written by Zhèng Xuán 鄭玄 is usually called *Zhèngshì Zhōuyìzhù* 鄭氏周易注 or *Zhōuyì Zhèngzhù* 周易鄭注.

[2] *Zhōuyì* 8 • *Jìcí xià* 周易 8 •繫辭下 (Shànghǎi gǔjí chūbǎnshè 上海古籍出版社 1997: 87).

[3] Hé Zhòngyīng 何仲英 1922: 42-43.

[4] *Zhōuyì* 8 • *Jìcí xià* 周易 8 •繫辭下 (Shànghǎi gǔjí chūbǎnshè 上海古籍出版社 1997: 86).

[5] Bāo Xī 包犧 (**pˤ<r>u *ŋ̊ (r)a[j]*) was also written as Fú Xī 伏犧 (**[b]ək *ŋ̊ (r)a[j]*) or Fú Xī 伏羲 (**[b]ək *ŋ̊ (r)aj*), who was the ancestor of the ancient Chinese people in Chinese legend and mythology, and was counted as one of the Three Sovereigns at the beginning of the Chinese dynastic period.

> Bagua to understand the virtues of the gods and to classify the actual circumstances of all things.[1]

(3) The theory of the *Hétú Luòshū* (*Hétú Luòshū shōu* 河圖洛書說)

The legend of the *Hétú Luòshū* 河圖洛書 first appears in the Jìcí 系辭 of the *Zhōuyì* 周易:[2]

> 河出圖，洛出書，聖人則之.[3]
>
> *Hé chū tú, Luò chū shū, shèngrén zé zhī.*
>
> The *tú* 圖 (diagram) was produced from the Yellow River and the *shū* 書 (writing) was produced from the Luò 洛 River, and sages modeled [the *Zhōuyì* 周易 in part] on them.[4]

Before the Sòng Dynasty, there were only records of the *Hétú* 河圖 and *Luòshū* 洛書 in traditional literature. It was not until the Taoist Chén Tuán 陈抟 (AD 871-989) that proposed their patterns.[5] The patterns we see today were established by the Southern Sòng scholar Zhū Xī 朱熹 (AD 1130-1200)[6] (**Fig. 2.3-1**). In the *Hétú* 河圖 and *Luòshū* 洛書, dots (from one to ten) are used to represent the graphic combinations, which is closely related to Yin-yang, Wuxing (Five Phases or Five Agents) and Bagua. Scholars, such as Zhāng Zhīchún 張之純, claim that Chinese writing is created on the basis of Bagua, and Bagua comes from the *Hétú* 河圖.[7]

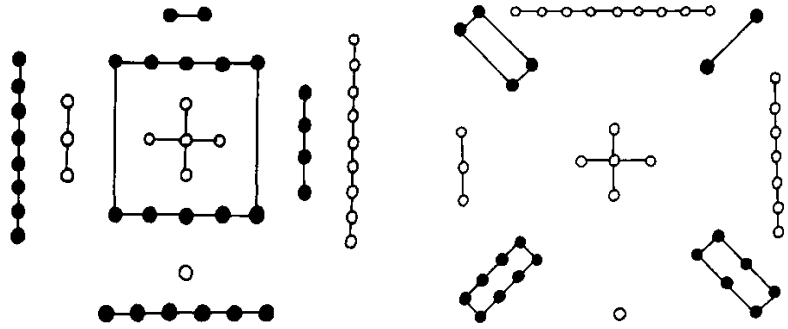


Fig. 2.3-1
The *Hétú* 河圖 (left) and *Luòshū* 洛書 (right)[8]

[1] The English translation of this passage is based on Peterson 1982: 111.

[2] The popular version of the legend is: In the Fú Xī 伏羲 period, a horse came out of the Yellow River with pictures (*Hétú* 河圖) on its back and a turtle came out of the Luò 洛 River with characters (*Luòshū* 洛書) on its back. Inspired by the *Hétú* 河圖 and *Luòshū* 洛書, Fú Xī 伏羲 invented Bagua.

[3] *Zhōuyì* 7 • *Jìcí shàng* 周易 7 • 繫辭上 (Shànghǎi gǔjí chūbǎnshè 上海古籍出版社 1997: 82).

[4] For English translation of this passage see also Peterson 1982: 108.

[5] Wáng Yǒngkuān 王永宽 2018: 96-99.

[6] Wáng Yǒngkuān 王永宽 2018: 114-116.

[7] Zhāng Zhīchún 張之純 1914: 3.

[8] Wáng Yǒngkuān 王永宽 2018: 97.

(4) The theory of Cāng Jié 倉頡's invention of writing (*Cāng Jié zàozì shuō* 倉頡造字說)[1]

The records of Cāng Jié 倉頡's invention of writing can be found in several ancient Chinese works, for example:

① 奚仲作車, 蒼頡作書.[2]

Xī Zhòng zuòchē, Cāng Jié zuòshū.

Xī Zhòng 奚仲 created the cart and Cāng Jié 倉頡 invented writing.

② 古者蒼頡之作書也, 自環者謂之厶，背厶謂之公.[3]

Gǔzhě Cāng Jié zhī zuòshū yě, zìhuánzhě wèizhī sī, bèisī wèizhī gōng.

In ancient times, Cāng Jié 倉頡 invented Chinese writing. The self-surrounding character was called *sī* 厶 (also written as *sī* 私; personal, private), and the character *sī* 厶 flipped onto its back was the character *gōng* 公 (public, collectively owned).

This theory argues that writing is invented by Cāng Jié 倉頡, who is said to have been an official historian of the Huángdì 黃帝 in ancient Chinese legends.[4] The most influential work is the *Shuōwén jiězì* 說文解字, a comprehensive dictionary analyzing the structure of China signs, compiled by Xǔ Shèn 許慎 of the Eastern Hàn Dynasty.[5] In the preface, Xǔ Shèn 許慎 argues:

黃帝史官倉頡，见鸟獸蹄迒之迹，知分理可相別异也，初造書契.[6]

Huángdì shǐguān Cāng Jié, jiàn niǎoshòu tíháng zhījì, zhī fēnlǐ kě xiāng biéyì yě, chūzào shūqì.

Cāng Jié 倉頡, the official historian of the Huángdì 黃帝, saw the footprints of birds and beasts, and understood that their textures can be distinguished from each other, and then created incisions of writing.

---

[1] Cāng Jié 倉 (**tsʰˁaŋ*) 頡 was also written as Cāng Jié 蒼 (**[tsʰ]ˁaŋ*) 頡, who was claimed to be an official historian of the Yellow Emperor in ancient Chinese legends. ŋ

[2] *Lǚshì chūnqiū* 17 • *jūnshǒu* 吕氏春秋 17 •君守 (Gāo Yòu 高诱 1978: 203). *Lǚshì chūnqiū* 吕氏春秋, usually called the *Master Lü's Spring and Autumn Annals*, is an encyclopedic Chinese classic text compiled ca. 239 BC.

[3] *Hánfēizǐ* 19 • *wǔdù* 韓非子 19 •五蠹 (Wáng Xiānshèn 王先慎 1978: 345).

[4] Huángdì 黃帝 (the Yellow Emperor) was counted as one of the Three Sovereigns at the beginning of the Chinese dynastic period.

[5] For discussion on the *Shuōwén jiězì* 說文解字 see also in **1.2**.

[6] *Shuōwén jiězì* 1 • *Xù* 說文解字 1 • 序 (Xǔ Shèn 許慎 1963: 314).

Most proponents of this theory, such as Zhāng Zhīchún 張之純 and Zhū Zōnglái 朱宗萊, have followed his view.[1] Although these scholars have claimed that knotted strings, Bagua or the *Hétú* 河圖 and *Luòshū* 洛書 are the origins of Chinese writing, they have different views with regard to the nature of them. For example, Xú Dàozhèng 徐道政 argues that Bagua was the writing of the Fú Xī 伏羲 period,[2] but Zhū Zōnglái 朱宗萊 claims it was not.[3] Hé Zhòngyīng 何仲英 argues that the knotted string is writing in the Shén Nóng 神農 period,[4] while Xú Dàozhèng 徐道政 claims that the knotted string is not writing but a record-keeping method.[5]

These scholars' understanding of the origin of Chinese writing is largely influenced by Xǔ Shèn 許慎, whose discussion of the origin of Chinese writing involved knotted strings, Bagua and Cāng Jié 倉頡's invention of writing, which can be regarded as a summary of the research on the origin of Chinese writing before Hàn Dynasty. Academic studies between the early 20th century and the 1930s did not offer a definition of writing, and their understanding of the origin of Chinese writing was mainly based on unreliable mythological records. Even if the knotted strings, Bagua or the *Hétú* 河圖 and *Luòshū* 洛書 codified information, they were not writing, because they did not represent language.

The mainstream of studies on the origin of Chinese writing from 1930s to 1970s was the *túhuà wénzì shuō* 圖畫文字說 (the theory of picture writing). The terminology used to describe picture writing by scholars was not consistent, and the most commonly used ones are *túhuà* 圖畫 (pictures), *wénzìhuà* 文字畫 (picture writing), *túhuà wénzì* 圖畫文字 (graphic writing), *xiàngxíng wénzì* 象形文字 (pictographs), and *jìshì túhuà* 記事圖畫 (record-keeping pictures).[6] The same term was also very likely used to refer to different things in the works of different scholars. For instance, the term *túhuà* 圖畫 has referred to the following things in these works: (1) pottery patterns of the Xīndiàn 辛店 Culture (ca. 1300-1000 BC),[7] (2) *xiàngxíngzì* 象形字 (pictographs) of *Liùshū* 六書,[8] (3) paleolithic murals of animals,[9] and (4) record-keeping pictures, such as picture records of hunting activities.[10] Shěn

[1] Zhāng Zhīchún 張之純 1914: 6; Zhū Zōnglái 朱宗萊 1918: 1.
[2] Xú Dàozhèng 徐道政 1917: 2.
[3] Zhū Zōnglái 朱宗萊 1918: 1.
[4] Shén Nóng 神農 (also known as Yándì 炎帝, the Yan Emperor), usually translated as "Divine Farmer", "Divine Husbandman", was a ruler in Chinese legends, who was thought to have taught the ancient Chinese not only agriculture, but also the use of herbal drugs, and it is said that he lived in the same period as Huángdì 黃帝.
[5] Xú Dàozhèng 徐道政 1917: 2.
[6] Wáng Yǐng 王穎 2012: 271.
[7] Dīng Shān 丁山 19??: 14.
[8] Dīng Shān 丁山 19??: 14. For *Liùshū* 六書 see discussion in **1.2.2**.
[9] Táng Lán 唐蘭 1935: 76.
[10] Shào Zǐjìng 邵子敬 1936: 17.

Jiānshì 沈兼士 (AD 1887-1947) and Táng Lán 唐蘭 are representative of this theory. In 1922, Shěn Jiānshì 沈兼士 first proposed the term *wénzìhuà* 文字畫:

> "在文字沒有發明以前，用一種粗笨的圖畫來錶示事物的狀態，行動，和數量的觀念，就叫做文字畫 (picture writing)。"[1]
>
> *Zài wénzì méiyǒu fāmíng yǐqián, yòngyīzhǒng cūbèn de túhuà lái biǎoshì shìwù de zhuàngtài, xíngdòng, hé shùliàng de guānniàn, jiù jiàozuò wénzìhuà.*
>
> Before writing was invented, a kind of clumsy pictures was used to represent the status, action, and quantity of things, which was called picture writing.

In his view, before the mature *Liùshū* 六書 signs, Chinese signs are still at the developmental stage known as *wénzìhuà* 文字畫, and emblems on the bronze vessels of Shāng and Western Zhōu are proto-writing.[2] At this stage, as he alleged, it is possible to convey ideas directly through visual images without using language.[3] On this basis, he argues that the development of Chinese writing has gone through four stages: (1) *wénzìhuà* 文字畫 (picture writing); (2) *xiàngxíngzì* 象形字 (pictographs), including pictographs and semantographs of *Liùshū* 六書; (3) *biǎoyìzì* 表意字 (semantic characters), referring to syssemantographs of *Liùshū* 六書; and (4) *biǎoyīnzì* 表音字 (phonetic characters), consisting of phonograms, loangraphs and *zhuǎnzhù* 轉注 ("turning and commenting") of *Liùshū* 六書.[4]

Táng Lán 唐蘭 also argues that Chinese writing originates from pictures, and writing is equal to pictures plus language.[5] The developmental stages of Chinese writing are *túhuà wénzì* 圖畫文字 (that is, pictographs of the *Liùshū* 六書), *xiàngyì wénzì* 象意文字[6] and *xíngshēng wénzì* 形聲文字 (that is, phonograms of *Liùshū* 六書), which is the so-called theory of *sānshū* 三書. Táng has defined the term *túhuà wénzì* 圖畫文字 as

> "我們說圖畫文字，是用圖畫方式寫出來的文字."[7]
>
> *Wǒmenshuō túhuà wénzì, shì yòng túhuà fāngshì xiěchūlái de wénzì.*
>
> The *túhuà wénzì* 圖畫文字 we are talking about are characters written in a pictorial way.

[1] Shěn Jiānshì 沈兼士 1986b: 21-22.
[2] Shěn Jiānshì 沈兼士 1986b: 22.
[3] Shěn Jiānshì 沈兼士 1986a: 4.
[4] Shěn Jiānshì 沈兼士 1986b: 21-31.
[5] Táng Lán 唐蘭 1949: 90.
[6] *Xiàngyì wénzì* 象意文字 includes other characters of *Liùshū* 六書 except *xiàngxíngzì* 象形字 (pictograhs) and *xíngshēngzì* 形聲字 (phonograms).
[7] Táng Lán 唐蘭 1949: 82.

However, from his perspective, the initial number of *túhuà wénzì* 圖畫文字 is too small to fully represent language, so true writing starts with semantic characters.[1] When the use of semantic signs reached a maximum, phonetic signs began to appear.[2]

In addition to the influence of ancient Chinese epigraphy, scholars' studies on the origin of Chinese writing in this period are also affected by the theory of picture writing proposed by western scholars (such as Bloomfield 1933 and Gelb 1952), especially the theory of pictorial writing.[3] However, both the traditional Chinese theory of *Liùshū* 六書, and the theory of *sānshū* 三書 proposed by Táng Lán 唐蘭, are only a synchronic classification of individual Chinese signs, rather than a diachronic developmental stage of the Chinese writing system. Moreover, the theory of picture writing does not conform to the actual situation of the development of independent writing systems. For example, as discussed in **3.5** and **5.2**, the rebus principle is already used in oracle-bone inscriptions, which underlines alleged developmental stages from semantic to phonetic.

From the 1970s on, Neolithic graphs have been continually unearthed in China, and an increasing number of scholars have made attempts to seek the origin of Chinese writing in these Neolithic graphs. The publication of *Before Writing* (Schmandt-Besserat 1992) challenged the theory of the pictorial origin of writing. Scholars worldwide began to rethink the origin of writing and Chinese scholars were no exception. Therefore, the theory of the origin of Chinese writing developed from monism (pictorial origin) to pluralism.

Guō Mòruò 郭沫若 and Yáng Jiànfāng 楊建芳 are representative of dualism. On the basis of pottery graphs of the Yǎngsháo 仰韶 Culture discovered at Bànpō 半坡 (ca. 4700-4100 BC) and the pottery graphs of the late Dàwènkǒu 大汶口 Culture (ca. 3100-2600 BC),[4] Guō Mòruò 郭沫若 and Yáng Jiànfāng 楊建芳 argue that there are two origins of Chinese writing, that is, the system of *zhǐshì* 指事 (semantographs or "pointing at affairs") and the system of *xiàngxíng* 象形 (pictographs or "resembling shapes").[5] According to the theory of *Liùshū* 六書, *xiàngxíng* 象形 and *zhǐshì* 指事 are two ways of inventing signs. Also, the Neolithic graphs discovered in China can be roughly divided into two types in their graphic form, that is, simple geometric symbols (such as the Bànpō 半坡 graphs) and pictographic symbols (such as the Dàwènkǒu 大汶口 graphs). Proponents of a dualism of origin argue that the

[1] Táng Lán 唐蘭 1949: 90.
[2] Táng Lán 唐蘭 1965: 45.
[3] Hé Dān 何丹 2003: 147; Lái Guólóng 來國龍 2006: 58; Wáng Yǐng 王穎 2012: 275.
[4] For details about the Bànpō 半坡 and Dàwènkǒu 大汶口 graphs see discussions in **3.2**.
[5] Guō Mòruò 郭沫若 1972: 3-14; Yáng Jiànfāng 楊建芳 1981.

geometric graphs and pictograms correspond exactly to the *xiàngxíng* 象形 and *zhǐshì* 指事 of *Liùshū* 六書. However, as mentioned above, *Liùshū* 六書 is only a synchronic classification of individual Chinese signs, and cannot be used to explain the origin of Chinese writing. Wāng Níngshēng 汪寧生 is representative of pluralism. Based on ethnological archaeological information, he argues that Chinese writing originates in a variety of primitive record-keeping methods, such as drawing pictures, knotted strings, wood-notching, and record-keeping.[1]

Qiú Xīguī 裘錫圭 argues that the appearance of semantographs and loangraphs as distinct from pictures marked the start of the formation of writing. The first application of the *jiǎjiè* 假借 method might have been not long after the first appearance of semantographs, and they are very likely to have been contemporaneous.[2] His theory is also called *jiǎjiè qǐyuán shuō* 假借起源說, and its proposal marked a leap in the understanding of the phonetic characteristics of writing in Chinese academia.[3] The basis of *túhuà wénzì shuō* 圖畫文字說 (the theory of picture writing) is that the earliest signs invented should be pictographs, but Qiú points out that there are a lot of loangraphs in oracle-bone inscriptions,[4] so this theory is a denial of the *túhuà wénzì shuō* 圖畫文字說 (the theory of picture writing) and has affirmed the indispensability of the phonetic representation in the origin of writing, which is consistent with the actual situation of the origin of Chinese writing.

The viewpoint that Chinese writing was invented in a relatively short period of time was proposed by Lǐ Wànfú 李萬福. This is more in line with the actual situation of the origin of Chinese writing, but has not met with wide acceptance. But it should be noted that, although his viewpoint makes sense, his argument is not convincing. Lǐ has made a comparison of the quantities of the oracle-bone signs and the graphs preceding the oracle-bone inscriptions. For example, the total number of the graphs preceding the oracle-bone inscriptions is about 1446, and the total number of oracle-bone signs is about 1,500,000. The growth rate of oracle-bone signs is 16,286 times larger than that of the graphs preceding the oracle-bone inscriptions, so Chinese writing was invented over a relatively short period of time. Clearly, the nature of oracle-bone signs is different from that of Neolithic graphs. Also, it cannot be ruled out that there are oracle-bone signs and graphs preceding the oracle-bone inscriptions written on perishable materials such as bamboo and wood strips. Thus, the sudden invention of Chinese writing cannot be proven by the comparison of their quantities.[5]

[1] For more details see discussions in Chapter 3.
[2] Qiú Xīguī 裘錫圭 1988: 5.
[3] Hé Dān 何丹 2003: 212.
[4] Qiú Xīguī 裘錫圭 1988: 5, 2013.
[5] Lǐ Wànfú 李萬福 2000: 18-22.

2.3.2 Materials preceding the oracle-bone inscriptions

With regard to the materials preceding the oracle-bone inscriptions, many Chinese scholars treat them as the origin of Chinese writing. Academic studies of these materials began in the early 20th century. In 1925, Swedish scholar Johan G. Andersson (Āntèshēng 安特生, AD 1874-1960) published the *Archaeological Research in Kansu* 甘青考古記, in which his discovery of the engraving bones and painted graphs on pottery from the Gānqīng 甘青 area were recorded. Táng Lán 唐蘭 argues that the excavated bone graphs are not writing,[1] but the pottery graphs are, but Chén Mèngjiā 陳夢家 refutes his view.[2]

Until the mid-20th century, most sites investigated were in the Yellow River basin.[3] Two of them are important, that is, (1) the Chéngziyá 城子崖 site of the Lóngshān 龍山 Culture at Lóngshān 龍山, Zhāngqiū 章丘 of Shāndōng 山東 province, excavated in 1930-1931, with 88 pieces of engraved pottery fragments discovered;[4] (2) the site of the Liángzhǔ 良渚 Culure at Hángxiàng 杭縣 of Zhèjiāng 浙江 province, excavated in 1936-1937, with five engraved graphs discovered (**Fig. 2.3-2**).[5] Moreover, Hé Tiānxíng 何天行 (AD 1913-1986) published a black pottery with eight graphs (**Fig. 2.3-3**).[6]

Fig. 2.3-2
Engraved symbols, Hángxiàn 杭縣[7]

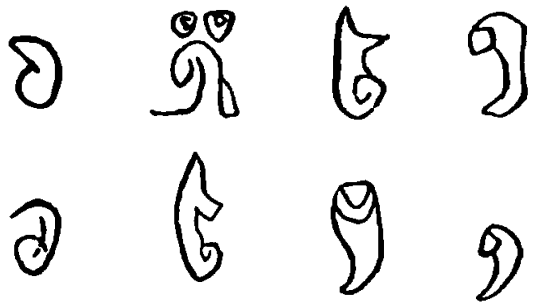


Fig. 2.3-3
Graphs on black pottery, Hángxiàn 杭縣[8]

[1] Táng Lán 唐蘭 1933, 1935.
[2] Chén Mèngjiā 陳夢家 1956.
[3] Niú Qīngbō 牛清波 2013: 7, 2017: 113.
[4] Institute of History and Philology, Academia Sinica 1934: 53-54. Quote from Lǐ Xiàodìng 李孝定 1986: 43-73.
[5] Shī Xīngēng 施昕更 et al. 1938: 24-25.
[6] Hé Tiānxíng 何天行 1937, 2000: 552-557, 2014: 288-297; Niú Qīngbō 牛清波 2013: 177-179.
[7] Shī Xīngēng 施昕更 et al. 1938: 25.
[8] Hé Tiānxíng 何天行 2014: 295. For illustration of the black pottery and its graphs see also Hé Tiānxíng 何天行 1937, 2000: 555-556, 2014: 311; Niú Qīngbō 牛清波 2013: 178-179.

From 1960 onwards, with the development of Chinese archaeology, scientific excavation was carried out at more sites, and the excavated areas extended from the Yellow River basin to the Yangtze River basin and South China.[1] The excavations of two cultures are of great importance. The first one is the Yǎngsháo 仰韶 Culture. The exavation of the Bànpō 半坡 site at Xī'ān 西安 of Shǎnxī 陕西 province, carried out from 1954 to 1957, unearthed 113 engraved pottery graphs (**Fig. 3.2-1**).[2] Such graphs have also been discovered in, for example, Jiāngzhài 姜寨 (**Fig. 3.2-2**) at Líntóng 臨潼 of Shǎnxī 陕西 province and Lǐjiāgōu 李家溝 at Tóngchuān 銅川 of Shǎnxī 陕西 province. The discovery of these graphs has sparked heated discussions. Scholars, such as Guō Mòruò 郭沫若, Wáng Zhìjùn 王志俊 and Lǐ Xiàodìng 李孝定, argue that the Bànpō 半坡 graphs are writing,[3] while others, such as Qíu Xīguī 裘錫圭, Wáng Níngshēng 汪寧生 and Gāo Míng 高明, reject this.[4] The other one is the Dàwènkǒu 大汶口 Culture. The excavation at Dàwènkǒu 大汶口 and Líng Yánghé 陵陽河 unearthed five engraved pottery graphs (**Fig. 3.2-9**). Such graphs have also been discovered at Dàzhūjiācūn 大朱家村 of Jǔxiàn 莒縣 in Shāndōng 山東 province (**Fig. 3.2-10**) and Yùchísì 尉遲寺 of Méngchéng 蒙城 in Ānhuī 安徽 province (**Fig. 3.2-11**). Unlike the Bànpō 半坡 graphs, the Dàwènkǒu 大汶口 graphs are more complicated. Scholars, such as Táng Lán 唐蘭 and Lǐ Xiàodìng 李孝定, claim that the Dàwènkǒu 大汶口 graphs are writing,[5] but Wáng Níngshēng 汪寧生 disagrees with them.[6] During this period, some regional and historical studies of excavated graphs were also carried out, for example, Wáng Zhìjùn 王志俊 analyzes and interprets the graphs of the Yǎngsháo 仰韶 Culture in Guānzhōng 關中 areas.[7] Moreover, on the basis of excavated graphs, some scholars, such as Qíu Xīguī 裘錫圭, Lǐ Xiàodìng 李孝定 and Chén Zhāoróng 陳昭容, make attempts to better describe the origin and development of Chinese writing.[8]

From 1990 to the present, great advances in archaeology and ancient culture studies have facilitated the study of materials preceding the oracle-bone inscriptions.[9] During this period, the excavations at Jiǎhú 賈湖 and Shuāngdūn 雙墩 deserve special attention. The excavation at Jiǎhú 賈湖 of Wǔyáng 舞陽 in Hénán province, carried out from 1983 to 1987, unearthed 16

[1] Niú Qīngbō 牛清波 2013: 10, 2017: 113.
[2] Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 et al. 1963: 196.
[3] Guō Mòruò 郭沫若 1972; Wáng Zhìjùn 王志俊 1980; Lǐ Xiàodìng 李孝定 1986.
[4] Qíu Xīguī 裘錫圭 1978; Wáng Níngshēng 汪寧生 1981; Gāo Míng 高明 1984. For more details about the Bànpō 半坡 graphs see discussions in **3.2**.
[5] Táng Lán 唐蘭 1975; Lǐ Xiàodìng 李孝定 1986.
[6] Wáng Níngshēng 汪寧生 1981. For more details about the Dàwènkǒu 大汶口 graphs see discussions in **3.2**.
[7] Wáng Zhìjùn 王志俊 1980.
[8] Qíu Xīguī 裘錫圭 1978; Lǐ Xiàodìng 李孝定 1986; Chén Zhāoróng 陳昭容 1986.
[9] Niú Qīngbō 牛清波 2013: 11, 2017: 114.

graphs on turtle shells, bone, stone and pottery vessels (**Fig. 3.1-1&2**).[1] Scholars have shown great interest in the 賈湖 Jiǎhú graphs, especially the graphs on turtle shells. Some scholars, such as Táng Jiàn 唐建, Zhāng Jūzhōng 張居中, Cài Yùnzhāng 蔡運章，Lǐ Xuéqín 李學勤 and Féng Píng 馮憑, argue that the Jiǎhú 賈湖 graphs are the earliest attestations of Chinese writing,[2] while Liú Zhìyī 劉志一 (2003) regards the Jiǎhú 賈湖 graphic forms as Ancient Yí 彝 signs.[3] The excavation at Shuāngdūn 雙墩 of Bèngbù 蚌埠 in Ānhuī 安徽 province, conducted from 1986 to 1992, unearthed over 600 pottery fragments with engraved graphs (**Fig. 3.1-3~5**).[4] Several scholars, such as Gě Yīnghuì 葛英會 (2009), Wáng Yùnzhì 王蘊智 (2011) and Huáng Dékuān 黃德寬 (2012), make attempts to interpret the Shuāngdūn 雙墩 graphs.[5]

In order to facilitate the study of materials preceding the oracle-bone inscriptions, some scholars published collections of these materials, for example, *Hénán zǎoqī kèhuà fúhào yánjiū* 河南早期刻畫符號研究, a collection of engraved and painted graphs discovered from Hénán province,[6] and *Liángzhǔ wénhuà kèhuà fúhào* 良渚文化刻畫符號, a collection of engraved and painted graphs of the Liángzhǔ 良渚 Culure.[7] Furthermore, comparative studies of ancient graphs worldwide have also been made during this period, for instance, *Sū měi'ěr Āijí jí zhōngguó gǔwénzì bǐjiào yánjiū* 蘇美爾、埃及及中國古文字比較研究, a comparative study of Chinese Neolithic graphs as well as ancient Sumerian and Egyptian signs.[8] In addition, this period has also witnessed a great advance in the study of the origin and development of Chinese writing.[9]

2.3.3 Oracle-bone Inscriptions

Most scholars today argue that the earliest unambiguously attested Chinese writing is the oracle-bone (and bronze) inscriptions of the Late Shāng Dynasty excavated from Ānyáng 安陽, which reaveal a fully-developed writing system capable of recording language. The following section consists of a brief history

[1] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 1999, 2015.
[2] Táng Jiàn 唐建 1992; Zhāng Jūzhōng 張居中 2001, 2003; Cài Yùnzhāng 蔡運章 2003; Li Xueqin et. al. 2003; Féng Píng 馮憑 2009.
[3] Liú Zhìyī 劉志一 2003. For details about the Jiǎhú 賈湖 graphs see discussions in **3.1**.
[4] Ānhuīshěng wénwù kǎogǔ yánjiūsuǒ 安徽省文物考古研究所 et al. 2008.
[5] Gě Yīnghuì 葛英會 2009; Wáng Yùnzhì 王蘊智 2011; Huáng Dékuān 黃德寬 2012. For details about the Shuāngdūn 雙墩 graphs see discussions in **3.1**.
[6] Yuán Guǎngkuò 袁廣闊 et al. 2012.
[7] Zhāng Bǐnghuǒ 張炳火 2015.
[8] Gǒng Yùshū 拱玉書 et al. 2009.
[9] Wáng Yùnzhì 王蘊智 1994; Cài Yùnzhāng 蔡運章 2001; Hé Zhēng 何崢 2011. For detailed analysis about the materials preceding the oracle-bone inscriptions see Chapter 4.

of Chinese and Western academic studies of Oracle-bone inscriptions as well as the date of origin of Chinese writing on the basis of oracle-bone inscriptions.

2.3.3.1 Chinese academic studies

Since the first discovery of the oracle-bone inscriptions in 1899, the academic study of oracle-bone inscriptions in China has been developed for about 120 years. Its development, according to Wáng Yǔxìn 王宇信 (AD 1940-2023) and his colleagues, can be divided into four phases, that is, 1899-1928, 1928-1949, 1949-1978, and 1978-now.[1]

(1) The first phase (1899-1928)

Four years after the discovery of the oracle-bone inscriptions, the first oracle-bone collection *Tiěyún cángguī* 鐵雲藏龜 (1903) was published by Liú'è 劉鶚 (AD 1857-1909). In the following thirty years, Luó Zhènyù 羅振玉 (AD 1866-1940), one of the most important scholars in the early stage, had published several oracle-bone collections, such as, *Yīnxū shūqì* 殷虛書契 (1913), *Yīnxū shūqì jīnghuá* 殷虛書契菁華 (1914), *Tiěyún cángguī zhīyú* 鐵雲藏龜之餘 (1915), *Yīnxū wénzì hòubiān* 殷虛文字後編 (1916) and *Yīnxū shūqì xùbiān* 殷虛書契續編 (1933). Together with the collections published by other scholars, such as Yè Yùsēn 葉玉森 (AD 1880-1933) and Wáng Xiāng 王襄 (AD 1876-1965)[2] (as well as some foreign missionaries and diplomats[3]), about 9919 pieces of oracle bones were published during this period.[4]

In 1904, Sūn Yíràng 孫詒讓 wrote a monograph *Qìwén jǔlì* 契文舉例, which was considered to be the first study of oracle-bone inscriptions, but Luó Zhènyù 羅振玉 was the first to recognize that oracle-bone inscriptions were the royal divination from the Late Shāng.[5] With the publication of the *Yīnxū shūqì kǎoshì* 殷墟書契考釋[6] and the *Zēngdìng yīnxū shūqì kǎoshì* 增訂殷墟書契考釋,[7] in which about 560 oracle-bone signs has been deciphered,[8] the study of oracle-bone inscriptions has undergone a fundamental change,[9] as most of the

[1] Wáng Yǔxìn 王宇信 1999: 456-457; Wáng Yǔxìn 王宇信 and Yáng Shēngnán 楊昇南 1999: 335; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 253.
[2] Yè Yùsēn 葉玉森, *Tiěyún cángguī shíyí* 鐵雲藏龜拾遺 (1925); Wáng Xiāng 王襄, *Fǔshì yīnqì zhēngwén* 簠室殷契征文 (1925).
[3] For details see discussion in the next section.
[4] Wáng Yǔxìn 王宇信 1999: 458; Hú Hòuxuān 胡厚宣 2017: 36; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 264.
[5] Wáng Yǔxìn 王宇信 1999: 458-459; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 265-269.
[6] Luó Zhènyù 羅振玉 1915.
[7] Luó Zhènyù 羅振玉 1927.
[8] Wáng Yǔxìn 王宇信 and Yáng Shēngnán 楊昇南 1999: 336; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 271.
[9] Wáng Yǔxìn 王宇信 1999: 459; Wáng Yǔxìn 王宇信 and Yáng Shēngnán 楊昇南 1999: 336.

oracle-bone signs could be read.[1] Moreover, from the "Yīnxū bǔcí zhōng suǒjiàn dìmíng kǎo" 殷虛卜辭中所見地名考 (1915) on, Wáng Guówéi 王國維 (AD 1877-1927) wrote several works on oracle-bone inscriptions, and made great contributions to both the inscriptions' interpretation and the study of Shāng history. It was his articles of 1917, "Yīnbǔcí zhōng suǒjiàn xiāngōng xiānwáng kǎo" 殷卜辭中所見先公先王考 and "Yīnbǔcí zhōng suǒjiàn xiāngōng xiānwáng xùkǎo" 殷卜辭中所見先公先王續考, matching the chronology of Shāng kings with that encountered in traditional historiography, which established the dynasty as "historical" beyond doubt. Some other scholars, such as Yè Yùsēn 葉玉森, Wáng Xiāng 王襄 and Shāng Chéngzuò 商承祚(AD 1902-1991) also made contributions to oracle-bone studies.[2]

(2) The second phase (1928-1949)

The scientific discovery of the oracle-bone inscriptions organized by Zhōngyāng yánjiūyuàn 中央研究院 (Academia Sinica) started in October 1928, and excavations were conducted 15 times over a period of about 10 years. These archaeological excavations have unearthed 24918 pieces of oracle bones, which are published in *Yīnxū wénzì jiǎbiān* 殷虛文字甲編 (Dǒng Zuòbīn 董作賓 1948, a total of 3942 pieces) and *Yīnxū wénzì yǐbiān* 殷虛文字乙編 (Dǒng Zuòbīn 董作賓 1948-1953, 9105 pieces).[3] In the meanwhile, scientists also accumulated rich archaeological resources and formed archaeological research methods, which had laid a sound foundation for the development of Chinese archaeology. It was the *Jiǎgǔwén duàndài yánjiūlì* 甲骨文斷代研究例[4] that showed the study of oracle-bone inscriptions had entered a new era. In this article, Dǒng Zuòbīn 董作賓 divided the oracle-bone inscriptions into five periods based on ten criteria (**Table 2.3-1**), laying the foundation for the periodization of oracle-bone inscriptions.[5]

With all the existing oracle-bone inscriptions at that time, Hú Hòuxuān 胡厚宣 (AD 1911-1995) carried out a holistic study and published *Jiǎgǔxué shāngshǐ lùn*cóng 甲骨學商史論叢 (1944-1945), which included studies of the Late Shāng, such as, social system, climate and agriculture.[6] Works written by Guō Mòruò 郭沫若, such as *Zhōngguó gǔdài shèhuì* 中國古代社會 (1930), *Jjiǎgǔ wénzì yánjiū* 甲骨文字研究 (1931), *Bǔcí tōngzuǎn* 卜辭通纂 (1933) and *Yīnqì*

[1] Wáng Yǔxìn 王宇信 2009: 78; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 271-272.
[2] Wáng Yǔxìn 王宇信 1999: 460; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 273-274.
[3] Wáng Yǔxìn 王宇信 1999: 460-462; Féng Shí 馮時 2016: 247; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 305-309.
[4] Dǒng Zuòbīn 董作賓 1933.
[5] Wáng Yǔxìn 王宇信 1999: 462; Huáng Dékuān 黃德寬 2019: 133-135; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 313-318.
[6] Wáng Yǔxìn 王宇信 1999: 463.

cuìbiān 殷契粹編 (1937), had a significant impact on later scholars.[1] However, excavations were interrupted by the Second Sino-Japanese War in 1937. According to the *Wǔshínián jiǎgǔwén fāxiàn de zǒngjié* 五十年甲骨文發現的總結[2] and the *Wǔshínián jiǎgǔxué lùnzhùmù* 五十年甲骨學論著目,[3] there were 876 works (148 monographs and 728 articles) in total on oracle-bone studies in the first fifty years.

The first period	Pán Gēng 盤庚, Xiǎo Xīn 小辛 Xiǎo Yǐ 小乙, Wǔ Dīng 武丁
The second period	Zǔ Gēng 祖庚, Zǔ Jiǎ 祖甲
The third period	Lǐn Xīn 廩辛, Kāng Dīng 康丁
The fourth period	Wǔ Yǐ 武乙, Wén Dīng 文丁
The fifth period	Dì Yǐ 帝乙, Dì Xīn 帝辛

Table 2.3-1 Periodization of oracle-bone inscriptions proposed by Dǒng Zuòbīn 董作賓

(3) The third phase (1949-1978)

The scientific discovery of oracle-bone inscriptions, interrupted by the Second Sino-Japanese War, restarted in the spring of 1950, which also symbolized the beginning of a new phase of the oracle-bone studies.[4] From then on, previously and newly founded oracle-bones inscriptions were successively published, such as *Zhànhòu suǒjiàn nánběi jiǎgǔlù* 戰後所見南北甲骨錄,[5] and *Jiǎgǔ zhuìhé xīnbiān* 甲骨綴合新編.[6] Among them, the *Jiǎgǔwén héjí* 甲骨文合集 was the largest, including 41956 pieces of oracle bones.[7] It was a summary of oracle-bone collections over the past eighty years, and was recognised as a milestone in Chinese oracle-bone studies. It took scholars about fifteen years, from 1959 to 1974, to gather the oracle-bone inscriptions all over the world to edit the *Jiǎgǔwén héjí* 甲骨文合集，and the last volume of this 13-volume masterpiece was not published until December 1982. Collecting and publishing had been ongoing since the first discovery of the oracle-bone inscriptions.[8]

[1] Wáng Yǔxìn 王宇信 1999: 463; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 322-336.
[2] Hú Hòuxuān 胡厚宣 1951.
[3] Hú Hòuxuān 胡厚宣 1952.
[4] Wáng Yǔxìn 王宇信 1999: 464; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 368.
[5] Hú Hòuxuān 胡厚宣 1951.
[6] Yán Yīpíng 嚴一萍 1975.
[7] Guō Mòruò 郭沫若 1978-1982.
[8] Wáng Yǔxìn 王宇信 1999: 469-470; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 372-373.

In addition to the compilation of the *Jiǎgǔwén héjí* 甲骨文合集, oracle-bone studies have also advanced greatly in all areas in this period. First came the periodization of oracle-bone inscriptions. Based on the periodization of five periods proposed by Dǒng Zuòbīn 董作賓, Hú Hòuxuān 胡厚宣 proposed a periodization of four periods (**Table 2.3-2**). In 1956, Chén Mèngjiā 陳夢家 proposed a periodization of nine periods in *Yīnxū bǔcí zōngshù* 殷虛卜辭綜述 (**Table 2.3-3**).

The first period	Pán Gēng 盘庚, Xiǎo Xīn 小辛 Xiǎo Yǐ 小乙, Wǔ Dīng 武丁
The second period	Zǔ Gēng 祖庚, Zǔ Jiǎ 祖甲
The third period	Lǐn Xīn 廩辛, Kāng Dīng 康丁, Wǔ Yǐ 武乙, Wén Dīng 文丁
The fourth period	Dì Yǐ 帝乙, Dì Xīn 帝辛

Table 2.3-2 Periodization of oracle-bone inscriptions proposed by Hú Hòuxuān 胡厚宣

The first period	Pán Gēng 盘庚, Xiǎo Xīn 小辛 Xiǎo Yǐ 小乙, Wǔ Dīng 武丁
The second period	Zǔ Gēng 祖庚
The third period	Zǔ Jiǎ 祖甲
The fourth period	Lǐn Xīn 廩辛
The fifth period	Kāng Dīng 康丁
The sixth period	Wǔ Yǐ 武乙
The seventh period	Wén Dīng 文丁
The eighth period	Dì Yǐ 帝乙
The ninth period	Dì Xīn 帝辛

Table 2.3-3 Periodization of oracle-bone inscriptions proposed by Chén Mèngjiā 陳夢家

Moreover, scholars combined the newly excavated oracle-bone inscriptions, especially the oracle-bone inscriptions excavated from Xiǎotún nándì 小屯南地, to date the inscriptions which were previously without context and to discuss controversial inscriptions. The most important works were *Yīnxū bǔcí zōngshù* 殷虛卜辭綜述 (Chén Mèngjiā 陳夢家 1956), “Dìyǐ shídài de fēiwáng bǔcí” 帝

乙時代的非王卜辭 (Lǐ Xuéqín 李學勤 1958) and "Lùn 'Fùhǎo' mù niándài jí yǒuguān wèntí" "論'婦好'墓年代及有關問題" (Lǐ Xuéqín 李學勤 1977).[1]

(4) The fourth phase (1978-now)

In this period, previously and newly excavated oracle-bone inscriptions have still appearing in print, such as, *Xiǎotún nándì jiǎgǔ* 小屯南地甲骨 (1980-1983, 4612 pieces),[2] *Yīnxū huāyuánzhuāng dōngdì jiǎgǔ* 殷墟花園莊東地甲骨 (2001, 689 pieces)[3] and *Yīnxū xiǎotún cūnzhōng cūnnán jiǎgǔ* 殷墟小屯村中村南甲骨 (2012, 531 pieces).[4] Moreover, scholars have continued to work on the periodization of oracle-bone inscriptions. On the basis of discussions from the last period, some scholars have proposed a periodization of two systems of oracle-bone inscriptions. This periodization was first proposed by Lǐ Xuéqín 李學勤 in 1978[5] and perfected in subsequent works, for instance, *Yīnxū wángbǔcí de fēnlèi yǔ duàndài* 殷墟王卜辭的分類與斷代,[6] *Yīnxū jiǎgǔ duàndài* 殷墟甲骨斷代,[7] and *Yīnxū jiǎgǔ fēnqī yánjiū* 殷墟甲骨分期研究.[8]

Furthermore, studies of oracle-bone signs have also continued to appear. For example, in *Jiǎgǔ wénzì gǔlín* 甲骨文字詁林 (1996) edited by Yú Xǐngwú 于省吾 (AD 1896-1984), over 300 oracle-bone signs were discussed. The *Gǔwénzì lùnjí* 古文字論集 published in 1992 gathered over 40 articles of oracle-bone studies written by Qiú Xīguī 裘錫圭. In addition, many interpretations of oracle-bone collections have been published, the two most important being: *Yīnxū jiǎgǔ kècí móshì zǒngjí* 殷墟甲骨刻辭摹釋總集[9] and *Jiǎgǔwén héjí shìwén* 甲骨文合集釋文.[10] In order to better facilitate the oracle-bone studies, many reference works and dictionaries have been published, such as *Gǔwénzì lèibiān* 古文字類編,[11] *Jiǎgǔ wénzì jíshì* 甲骨文字集釋,[12] *Jiǎgǔwén zìdiǎn* 甲骨文字典,[13] *Jiǎgǔwén jiǎnmíng cídiǎn* 甲骨文簡明詞典,[14] *Jiǎnmíng jiǎgǔwén zìdiǎn* 簡明甲骨文字典,[15] and *Jiǎgǔwén xūcí cídiǎn* 甲骨文虛詞詞典.[16]

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[1] Wáng Yǔxìn 王宇信 1999: 471-473; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 383-388.
[2] Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1980-1983.
[3] Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001.
[4] Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2012.
[5] Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 489.
[6] Huáng Tiānshù 黃天樹 1991.
[7] Péng Yùshāng 彭裕商 1994.
[8] Lǐ Xuéqín 李學勤 and Péng Yùshāng 彭裕商 1994.
[9] Yáo Xiàosuì 姚孝遂 1988.
[10] Hú Hòuxuān 胡厚宣 1999.
[11] Gāo Míng 高明 1980.
[12] Lǐ Xiàodìng 李孝定 1983.
[13] Xú Zhōngshū 徐中舒 1988.
[14] Zhào Chéng 趙誠 1988.
[15] Cuī Héngshēng 崔恒昇 1992.
[16] Zhāng Yùjīn 張玉金 1994.

In addition, newly excavated oracle-bones inscriptions, especially inscriptions from Huāyuánzhuāng dōngdì 花園莊東地, have drawn scholars' considerable attention, with several monographs focusing on the interpretation of these oracle-bones inscriptions, such as *Yīnxū huāyuánzhuāng dōngdì jiǎgǔ jiàoshì* 殷墟花園莊東地甲骨校釋,[1] *Yīnxū huāyuánzhuāng dōngdì jiǎgǔ bǔcí de chūbù yánjiū* 殷墟花園莊東地甲骨卜辭的初步研究,[2] and *Yīnxū huāyuánzhuāng dōngdì jiǎgǔwén wénlì yánjiū* 殷墟花園莊東地甲骨文文例研究.[3]

Apart from Shāng oracle-bone inscriptions, scholars have also made progress in the study of oracle-bone inscriptions of Western Zhōu, with important works such as *Zhōuyuán jiǎgǔwén zōngshù* 周原甲骨文綜述,[4] *Zhōuyuán jiǎgǔ yánjiū* 周原甲骨研究,[5] and *Zhōuyuán jiǎgǔwén* 周原甲骨文.[6]

In addition to these publications, many summary works on oracle-bone studies have been also published. Some are introductory works on oracle-bone inscriptions, such as *Jiǎgǔxué* 甲骨學,[7] *Jiǎgǔwén jiǎnlùn* 甲骨文簡論,[8] and *Jiǎgǔxué tōnglùn* 甲骨學通論,[9] while some focus on the development of oracle-bone studies. The following works are worth mentioning: *Bǎinián jiǎgǔxué lùnzhùmù* 百年甲骨學論著目,[10] *Jiǎgǔxué yībǎinián* 甲骨學一百年,[11] and *Jiǎgǔxué fāzhǎn 120 nián* 甲骨學發展 120 年.[12]

2.3.3.2 Western academic studies

Western academic study of oracle-bone inscriptions emerged and developed parallel to Chinese studies from the very beginning. Once oracle-bone inscriptions were first discovered in 1899 in Ānyáng 安陽, they caught the attention of missionaries and diplomats, such as Frank H. Chalfant (Fāng Fǎliǎn 方法斂, AD 1862-1914), Samuel Couling (Kù Shòulíng 库寿龄, AD 1859-1922), James Mellon Menzies (Míng Yìshì 明义士, AD 1885-1957) and Lionel Charles Hopkins (Jīn Zhāng 金璋, AD 1854–1952). Although these people were less professional than later scholars, they were the backbone in this research field until the end of World War II.[13]

[1] Zhū Qíxiáng 朱歧祥 1996.
[2] Yáo Xuān 姚萱 2006.
[3] Sūn Yàbīng 孫亞冰 2014.
[4] Xú Xītái 徐錫臺 1987.
[5] Zhū Qíxiáng 朱歧祥 1997.
[6] Cáo Wěi 曹瑋 2002.
[7] Yán Yīpíng 嚴一萍 1978.
[8] Chén Wěizhàn 陳煒湛 1987.
[9] Wáng Yǔxìn 王宇信 1999.
[10] Sòng Zhènháo 宋鎮豪 and Cháng Yàohuá 常耀華 1999.
[11] Wáng Yǔxìn 王宇信 and Yáng Shēngnán 楊昇南 1999.
[12] Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019.
[13] Shaughnessy 2018: 85.

Chalfant and Couling began to collect oracle-bones from 1903 (or 1904) onwards and had collected about 5,000 pieces.[1] In 1906, Chalfant published *Early Chinese Writing*, in which the newly-discovered oracle-bone inscriptions from Ānyáng 安陽 were introduced to western readers for the first time.[2] Menzies started to collect oracle-bones in 1914 and proceeded to collect more than 30,000 pieces. In 1917, he published *Oracle Records from the Waste of Yin Yīnxū bǔcí* 殷墟卜辭, which recorded 2369 pieces of oracle-bones.[3] In the 1930s, American scholar Roswell S. Britton published the oracle-bone inscriptions collected by Chalfant and Couling in Shānghai (Britton 1935; Chalfant 1935, a total of 1687 pieces; Chalfant 1938, 527 pieces; Chalfant 1939, 484 pieces) and the early collecting activities of western scholars then came to an end.[4]

Apart from collecting these oracle bones, several early scholars, such as Harry E. Gibson (Jí Bǔshēng 吉卜生) and Henri Maspero (Mǎ Bólè 馬伯樂, AD 1882-1945), also made contributions to the study of oracle-bone inscriptions. Of these, Hopkins was the most important. He began to work on oracle-bone inscriptions in 1908 and went on to publish more than 40 articles. The most prominent one was *Pictographic Reconnaissances: Being Discoveries, Recoveries, and Conjectural Raids in Archaic Chinese Writing*, which consisted of 9 parts (published 1917-1928) and discussed 160 signs from oracle-bone inscriptions in detail, laying the emphasis on the pictographic nature of Chinese signs.[5]

Western oracle-bone study remained quiescent for a while after World War II. Although professional scholars began to replace amateur ones, the only scholar worth mentioning in this period was Homer H. Dubs (Dé Xiàoqiān 德效騫, AD 1892-1969).[6] As a representative of this period, his studies focused on the date of oracle-bone inscriptions and paid great attention to the lunar eclipse, such as, “A canon of lunar eclipses for Anyang and China, -1400 to -1000” (1947); “The date of the Shāng period” (1951); and “The Date of the Shāng Period—A Postscript” (1953).

The thirty years from 1970 on witnessed the golden age of western oracle-bone studies, during which time about 200 works were published, covering all aspects of oracle-bone research.[7] The oracle-bone collections published in this period are as follows (**Table 2.3-4**):[8]

[1] Wáng Yǔxìn 王宇信 1999: 74-76; Shaughnessy 2018: 87-88.
[2] Wáng Yǔxìn 王宇信 and Yáng Shēngnán 楊昇南 1999: 337; Shaughnessy 2018: 86. For details see also Jīn Yáng 金洋 2014b.
[3] Wáng Yǔxìn 王宇信 1999: 74-76; Shaughnessy 2018: 88, 123; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 299-300.
[4] Shaughnessy 2018: 88; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 297.
[5] Shaughnessy 2018: 89-90.
[6] Shaughnessy 2018: 92.
[7] Shaughnessy 2018: 85-86.
[8] Shaughnessy 2018: 105-107; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 375-376, 447-456.

Author	**Year**	**Name**	**Number** (pieces)
Hsü, Chin-hsiung Xǔ Jìnxióng 許進雄	1972	*The Menzies Collection of Shāng Dynasty Oracle Bones, Volume I: A Catalogue*	4359
Hsü, Chin-hsiung Xǔ Jìnxióng 許進雄	1972	*Yīnxū bǔcí hòubiān* 《殷虛卜辭后編》	2805
Chou, Hung-hsiang Zhōu Hóngxiáng 周鸿翔	1976	*Oracle Bone Collections in the United States*	700
Hsü, Chin-hsiung Xǔ Jìnxióng 許進雄	1977	*The Menzies Collection of Shāng Dynasty Oracle Bones, Volume II: The Text*	/
Hsü, Chin-hsiung Xǔ Jìnxióng 許進雄	1979	*Oracle Bones in the White and Other Collections*	1915
Lefeuvre, Jean A. Léihuànzhāng 雷煥章	1985	*Fǎguó suǒcáng jiǎgǔlù* 《法國所藏甲骨錄》 *Collections of Oracular Inscriptions in France*	59
Shaughnessy, Edward L. Xiàhányí 夏含夷	1989	"Shāng Oracle-Bone Inscriptions". In *Ritual and Reverence: Chinese Art at the University of Chicago*	40
Lefeuvre, Jean A. Léihuànzhāng 雷煥章		*Dé Ruì Hé Bǐ suǒcáng yīxiē jiǎgǔlù* 《德瑞荷比所藏一些甲骨錄》 *Several Collections of Oracular Inscriptions in Germany, Switzerland, the Netherlands, Belgium*	225

Table 2.3-4 Western oracle-bone collections (1970s-2000)

In 1970s and 1980s, an increasing number of scholars engaged in oracle-bone studies, and Paul L-M Serruys (Sī Lǐyì 司禮義, AD 1912-1999), Ken-ichi Takashima (高岛谦一), and David N. Keightley (Jí Déwěi 吉德煒) were the leading scholars in this period.[1] In 1974, Serruys published "Studies in the Language of the Shāng Oracle Inscriptions", and proposed two important ideas in this article. The first one was that oracle-bone inscriptions were not

[1] For Keightley's studies on oracle-bone inscriptions see also Jīn Yáng 金洋 2015, 2014a; Jīn Yáng 金洋 and Sūn Tiānhé 孫天和 2014c; Shaughnessy 2018: 101-104, 128-130.

interrogative but declarative sentence, because the word **pʕok* 丨 (*bǔ* 卜) and **treŋ* 𠂤 (*zhēn* 貞)[1] did not mean "to ask, to question".[2] The second was that the particle **gə* 𠀤 (*qí* 其) worked as an adverbial word in some inscriptions,[3] and he argued that

> "the presence or absence of ch'i [*qí* 其] is a sign of very clear contrasts between two different kinds of oracular propositions: presence of ch'i [*qí* 其] marks the proposition or the alternative among possible courses of action, which is considered less desirable, less preferred, often positively feared and resorted to only if really unavoidable. This rule applies regardless of whether the proposition is expressed in negative or affirmative sentences."[4]

Takashima, the student of Serruys, was deeply influenced by his teacher. From 1977, Takashima published more than twenty articles and works on the grammar of oracle-bone inscriptions and ancient Chinese, in which he paid great attention to interrogative words and the usage of *qí* 其 in oracle-bone inscriptions. All concepts from his thirty-year studies on the grammar of oracle-bone inscriptions are well reflected in *Yīnxū wénzì bǐngbiān yánjiū* 殷虛文字丙編研究 *Studies of Fascicle Three of Inscriptions from the Yin Ruins*,[5] an English translation of *Xiǎotún dìèrběn: yīnxū wénzì bǐngbiān* 小屯第二本: 殷虛文字丙編.[6]

Keightley proposed independently of Serruys, and around the same time, that charges in oracle-bone inscriptions were not interrogative but declarative sentences.[7] *Sources of Shāng History: The Oracle-Bone Inscriptions of Bronze Age China,* published in 1978, was his most important work, in which Keightley comprehensively laid out the academic methods of oracle-bone studies, including divination methods in the Shāng period, interpretation of oracle-bone inscriptions and periodization. From the end of the 1970s, he published about twenty articles on Shāng divination, religion, chronology and so forth, such as, "The Religious Commitment: Shāng Theology and the Genesis of Chinese Political Culture" (1978b); "Late Shāng Divination: The Magico-

[1] For more details about *zhēn* 貞 and the nature of charge see discussions in **1.1.2**.
[2] Serruys 1974: 21-23.
[3] Serruys 1974: 25-59. For more details on *qí* 其 see discussions in **5.2.1.3**.
[4] Serruys 1974: 25.
[5] Takashima and Serruys 2010.
[6] Zhāng Bǐngquán 張秉權 1957-72. For more details see discussions in Shaughnessy 2018: 99-101, 131-134.
[7] Shaughnessy 2018: 102.

Religious Legacy" (1984); and "The Diviners' Notebooks: Shāng Oracle-Bone Inscriptions as Secondary Sources" (2001). Moreover, he has written three holistic works: (1) "The Shāng: China's First Historical Dynasty" (1999), (2) *The ancestral landscape: time, space, and community in late Shāng China, ca. 1200-1045 BC* (2000), and (3) *Working for His Majesty: Research Notes on Labor Mobilization in Late Shāng China (ca. 1200-1045 BC), as Seen in the Oracle-bone Inscriptions, with Particular Attention to Handicraft Industries, Agriculture, Warfare, Hunting, Construction, and the Shāng's Legacies* (2012). These works touched on all aspects of Shāng society, like climate, history, chronology, calendar, religion, polity, royal family, military, agriculture and cosmology.

Apart from these three scholars, many other scholars, such as Chang Tsung-tung (Zhāng Cōngdōng 張聰東, AD 1931-2000), Shaughnessy, Chang Kwang-chih (Zhāng Guāngzhí 張光直, AD 1931-2001) and Mikhail V. Kryukov (Liú Kèfǔ 劉克甫), also made contributions to oracle-bone studies during this period. In addition, two academic conferences were held in America, and three forums were organized by the journal *Early China* during the 1980s. In these conferences and forums, scholars discussed various aspects of Shāng civilization, such as social structure, political administration, periodization of bronze vessels and oracle-bone inscriptions.[1]

In the 1990s, French scholars, such as, Redouane Djamouri (Luó Duān 羅端), Shun-chiu Yau (Yóu Shùnzhāo 遊順釗), Françoise Bottéro (Pú Fāngshā 蒲芳莎), Olivier Venture (Fèng Yíchéng 鳳儀誠), and Leon Vandermeersch (Wāng Démài 汪德邁), became the main force of oracle-bone studies, and two important collections of essays were:

(1) *Écritures archaïques, systèmes et déchiffrement* (Yau and Maréchal 1995)
(2) *Collected essays in ancient Chinese grammar* (Djamouri 2001a).

In December 1999, a large academic conference commemorating the centennial of the discovery of oracle-bone inscriptions was held in Paris. The collection of conference papers, *Actes du Colloqueinternational commémorant le centenaire de la découverte des inscriptions sur os et carapaces*,[2] was considered to be a milestone at the centennial of western studies[3] and important articles are as follows:

- The Structure of OBI Characters (Boltz, pp. 169-177)
- Variantes graphiques dans les inscriptions sur os et écailles (Françoise,

[1] Shaughnessy 2018: 93-115; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 563-564, 616-617.
[2] Yau and Maréchal 2001.
[3] Shaughnessy 2018: 117-119; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 618.

pp. 179-193)
- Études grammaticales des inscriptions Shāng: Résultats acquis (Djamouri, pp. 119-134)
- The Diviners' Notebooks: Shāng Oracle-Bone Inscriptions as Secondary Sources (Keightley, pp. 11-25)
- La graphie 賓 et ses variants dans les inscriptions oraculaires et son évolution dans les inscriptions sur bronze (Lefeuvre, pp. 225-228)
- A Cosmography of Shāng Oracle-Bone Graphs (Takashima, pp. 37-62)
- La filiation chéloniomantique de l'achilléomancie (Vandermeersch, pp. 63-70)
- Quelques observations au sujet de la mise en page des textes de divination sur plastron (Venture, pp. 71-90)
- Oracle Bones and Western Sinology (Wang Tao, pp. 91-116)

Apart from French scholars' contributions, there were some other achievements in oracle-bone studies, such as *The shape of the turtle: Myth, art, and cosmos in early China* (Allan 1991), "Micro-Periodization and the Calendar of a Shāng Military Campaign" (Shaughnessy 1996), and "Shamanism, death, and the ancestors: Religious mediation in neolithic and Shāng China (ca. 5000-1000 BC)" (Keightley 1998).

Even though scholars, such as Keightley and Takashima,[1] continued to publish some important works on oracle-bone studies, western studies after 2000 have been less frequent, as a result of the retirement of professors of the earlier generation as well as the influence of bamboo-inscription studies in China, which has shifted western scholars' research to the Warring States and the Qín and Hàn Dynasties.[2] Haicheng Wang (Wáng Hǎichéng 王海城), Adam D. Smith (Shíyàdāng 石亞當), and Adam Schwartz have played an important role in studies of the oracle-bone inscriptions in this period. In the dissertation *Writing and the State in Early China in Comparative Perspective* (2007, published in 2014), Wang compared the evidence of early writing in Mesopotamia, Egypt, China and America (the Maya Lowlands, Central Mexico and the Andes), and proposed that in these civilizations, writing was invented and developed hand in hand with the process of urbanization and administration. This view was reiterated in "Writing and the City in Early China"[3] and "Writing and record-keeping in early cities".[4] On the basis of oracle-bone inscriptions excavated from Huāyuánzhuāng Dōngdì 花園莊東地, Smith's dissertation *Writing at Anyang: The Role of the Divination Record in the Emergence of Chinese Literacy* (2008) discussed the scribal training at

[1] Keightley 2000, 2012; Takashima 2010.
[2] Shaughnessy 2018: 86.
[3] Haicheng Wang 2015
[4] Law et al. 2015.

Ānyáng 安陽. His views can also be seen in "The evidence for scribal training at Anyang" (2011a); "The Chinese Sexagenary Cycle and the Ritual Foundations of the Calendar" (2011b); and "Are Writing Systems Intelligently Designed?" (2013). Schwartz's dissertation *Huayuan Zhuang East I: A Study And Annotated Translation Of The Oracle Bone Inscriptions* (2013) was a translation of oracle-bone inscriptions excavated from Huāyuánzhuāng Dōngdì 花園莊東地 with detail annotations.

Oracle-bone inscription studies also made progress in other areas: some focused on Shāng rituals, such as "Shāng Ritual Animals: Colour and Meaning" (Wang Tao 2007); "Sacrificial Rites for Ancestors during the Shāng and Zhōu Dynasties" (Liu Yuan 2009); and "Female Human Sacrifice in Shāng-Dynasty Oracle-Bone Inscriptions" (Schwermann and Wang 2015). Some concentrated on Shāng calendar, such as, "The First Known Chinese Calendar: A Reconstruction by the Synchronic Evidential Approach" (Liu Xueshun 2005) and "The Total Lunar Eclipse of June 16, 2011: A Key to Dating Yin Lunar Eclipse in *Yingcang* 885/886" (Liu Xueshun 2014). Some worked on oracle-bone signs, such as "Writing on shell and bone in Shāng China" (Françoise 2004); "An Investigation of Orthographic Variance in Shāng Writing" (Matthew 2011); and "Study of Grammar in Temporal and Spatial Perspectives: You 𠂤 in the OBI, Ancient Documents and the Dialects" (Yue 2011). For further information on the development of Chinese and western oracle-bone studies, consult the excellent works by Wáng Yǔxìn 王宇信 (1999, 2009, 2019), Wáng Yǔxìn 王宇信 and Yáng Shēngnán 楊昇南 (AD 1938-2019) (1999), Wang Tao (2001), Shaughnessy (2018), and Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 (2019).

2.3.3.3 The date of origin

Scholars' views on the date of oracle-bone script vary a little, such as, ca. 14th to 11th centuries BC,[1] ca. 1300-1046 BC,[2] ca. 13th century BC,[3] and ca. 1200 BC.[4] As Late Shāng inscriptions represent a fully developed writing system, scholars argue that the origin of Chinese writing should be dated earlier.[5] For example, Bagley and Keightley claim that oracle-bone inscriptions are assumed to have appeared around the middle of the second millennium BC.[6]

[1] Qiú Xīguī 裘錫圭 2000: 29.
[2] Chén Guāngyǔ 陳光宇 2008: 26, 2017a: 324.
[3] Bottéro 2004: 250.
[4] Boltz 1994: 31, 2000: 1, 2011: 65; Bagley 2004: 190, 2018: 61; Luo 2018: 221.
[5] Qiú Xīguī 裘錫圭 1988, 2000, 2013; Boltz 2000, 2011; Bottéro 2004; Keightley 2006; Chén Guāngyǔ 陳光宇 2008, 2009, 2017a, 2017b, 2018; Bagley 2018; Luo 2018.
[6] Bagley 2018: 16 and Keightley 2006: 182.

In Qiú Xīguī 裘錫圭's view, on the one hand, the period that Chinese writing developed from a primitive stage into a fully integrated writing system seems to be rather distant from Late Shāng. This is due to the fact that Chinese writing of the Late Shāng was able to fully record language, writing was widely used in the political and social life of the upper class, and writing techniques had already reached a high level. On the other hand, the Late Shāng script might not be too distant from the period when a full writing system was formed because of primitive survivals in the Late Shāng inscriptions, such as the graphic forms of certain semantographs, and because of the lack of the conformity between the order of graphs and the actual word order of the underlying language. On the basis of materials preceding the oracle-bone inscriptions, Late Shāng inscriptions, and traditional Chinese literature, Qiú Xīguī 裘錫圭 comes to the conclusion that "primitive writing probably did not precede the third millennium B.C. At the end of the third millennium B.C. after the establishment of the Xià Dynasty, China formally entered the stage of class society. The ruling classes felt a pressing need for a complete writing system in order to rule more effectively; therefore, the pace at which primitive writing advanced greatly accelerated."[1] Therefore, a fully integrated system of writing came into being at the junction of the Xià and Shāng periods, ca. 1600 BC.[2]

Boltz argues that the earliest form of the Chinese writing system is already glottographic writing, which is more likely to have derived from a preexisting non-glottographic notational system. In other words, a {+**S**} sign takes on a fixed phonetic value and becomes {+**P, +S**}.[3] In phonetically-based practice, the phonetic value of graph **G** remains stable and the semantic value varies (that is, {+**P**, +**S1**} or {+**P**, +**S2**}).[4] In polyphonic use, the semantic value of graph **G** stays constant and the phonetic value is allowed to vary (that is, {+**P1**, +**S**} or {+**P2**, +**S**}).[5] From his perspective, phonetically-based practice can be found at every stage of the written language, but "polyphonic usage, requiring a stable semantic identity, depends on the original iconicity of the graph to maintain the **S** value when the **P** value is allowed to vary".[6] That is to say, the polyphonic use is limited to the formative period of the writing system when the original iconicity of **G** was still identifiable. Therefore, polyphony develops earlier and is more fundamental to the formation of a writing system. On this basis, Boltz argues that any writing system that shows evidence of operative polyphony indicated by identifiable indexical usage of graphs, is very likely to be not far from its initial stage of development. Only in very early excavated

[1] Qiú Xīguī 裘錫圭 1988, 2000: 43; Qiu 2013: 34.
[2] Qiú Xīguī 裘錫圭 1988, 2000: 44; 2013: 34.
[3] Boltz 2000:6, 2011: 69-74.
[4] G = graph, S = semantic element, P = phonetic element.
[5] Boltz 2011: 75-76.
[6] Boltz 2011: 82.

materials, chiefly the Late Shāng inscriptions, has the textual evidence of polyphony been found.[1] Therefore, the script of the Shāng inscription texts, we have a basis for regarding that Shāng script is still in its formative stage.

Bottéro argues that in understanding the earliest Chinese writing system, allographs are extremely useful,[2] since they can help determine its stage of development within script development. In oracle-bone inscriptions, different graphs can stand for the same morpheme, while on the other hand, one graph can stand for different morphemes. Bottéro proposes nine different types of synchronic graphic variants in oracle-bone inscriptions, that is, graphic variants (1) written in opposite directions, (2) representing the same thing from different angles, (3) combining the same elements in a different order, (4) combining different quantities of elements, (5) using different components from the same semantic category, (6) using different phonetic elements, (7) with or without a phonetic element, (8) with or without a semantic element, and (9) represented by completely different characters.[3] On the basis of these allographs, Bottéro argues that there was no fixed or standardized writing system in the Late Shāng period. In the later development of the Chinese writing system, combining a semantic element and a phonetic element is the most popular and productive way to create new signs. But in the Late Shāng period, this method was still in its initial stage and not applied systematically, which can be seen from the absence of a phonetic element in some signs. Therefore, Shāng writing was not far from its time of origin. From her perspective, if Chinese writing were invented earlier than oracle-bone inscriptions, it could not have been very much earlier. This is due to the following reasons: Firstly, there was no social requirement for the invention of writing before Shāng. Secondly, the pictographic style of the Shāng script as well as the numerous graphic variants indicates that the system is still in its initial stage of development. In addition, literature, epistolary and private writing appear in China only several centuries later.[4]

2.3.4 Bronze Inscriptions

2.3.4.1 Chinese academic studies

According to the traditional Chinese literature, the earliest record of the discovery of a bronze inscription was in 116 BC, in the reign of Emperor Wǔ 武

[1] Boltz 2000: 7-9, 2011: 76-83.
[2] For more examples of oracle-bone allographs see discussions in **5.1**.
[3] Bottéro 2004: 255-258.
[4] Bottéro 2004: 258-259.

(140-87 BC) of the Hàn Dynasty.[1] Then, from the Hàn Dynasty (202 BC-AD 220) down to the Táng Dynasty (AD 618-907), about 1200 years in total, there are less than twenty references to the discovery of bronze vessels with inscriptions.[2] Few attempts appear to have been made to decipher any inscription.[3] During this period, these discoveries were regarded as auspicious portents.[4]

Although there are records about bronze inscriptions in the Hàn Dynasty, scholars generally argue that Chinese epigraphy (known as *Jīnshíxué* 金石學 in Chinese, the study of bronze and stone inscriptions), started in the Sòng Dynasty (AD 960-1279). In the Sòng Dynasty, especially from the Xuānhé 宣和 period (AD 1119-1125)[5] to the Southern Sòng Dynasty (AD 1127-1279), people were keen to collect and record bronze inscriptions, which may be due to the following two factors. Firstly, inscribed stone drums (known as *Shígǔwén* 石鼓文 in Chinese), discovered at the beginning of the Táng Dynasty (AD 618-907), inspired an interest in the study of the ancient script, which was later extended to the study of bronze inscriptions.[6] More importantly, the emperors, especially Huīzōng 徽宗 (AD 1082-1135) of Sòng, were interested in collecting bronze vessels, and many people, such as dignitaries and scholars, followed suit and bought them. Because of the huge demand, the burglary of tombs increased, and a large number of bronzes were unearthed at this time. Some of these bronzes were bought as ornamental objects, while others were studied as materials for ancient scripts.[7]

During this period, bronze inscriptions were collected in more than thirty publications. The first collection *Xiānqín gǔqì jì* 先秦古器記, published by Liú Chǎng 劉敞 (AD 1019-1068), comprises drawings of eleven bronzes and their inscriptions, such as the Jìnjiāng *dǐng* 晉姜鼎 (also known as the Hánchéng *dǐng* 韓城鼎) (WJC 2491/ JC 2826).[8] Among these collections, the most

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[1] For details see *Shǐjì 12* • *Xiàowǔ běnjì* 史記 12 • 孝武本紀 (Sīmǎ Qiān 司馬遷: 575-620), *Shǐjì* 28 • *Fēngshàn shū* 史記 28 • 封禪書 (Sīmǎ Qiān 司馬遷: 1631-1694) or *Hànshū* 25 • *Jiāosì zhì shàng* 漢書 25 • 郊祀志上 (Bān Gù 班固 1964: 1189-1240).

[2] Zhào Chéng 趙誠 2003: 1; Bái Bīng 白冰 2009: 2.

[3] The exception was the discovery of a *dǐng* 鼎 in the reign of Emperor Xuān 宣 (73-49 BC). The inscription was interpreted by paleographer Zhāng Chǎng 張敞. For details see *Hànshū* 25 • *Jiāosì zhì xià* 漢書 25 • 郊祀志下 (Bān Gù 班固 1964: 1240-1272), and see also Shaughnessy 1992: 5-7; Jiǎng Shūhóng 蔣書紅 2011: 50.

[4] Shaughnessy 1992: 5; Gāo Míng 高明 1996: 346; Zhào Chéng 趙誠 2003: 1; Bái Bīng 白冰 2009: 1; Féng Shí 馮時 2016: 421.

[5] Xuānhé 宣和 (1119-1125 AD) was the sixth and last regnal year of Emperor Huīzōng 徽宗 of the Sòng Dynasty.

[6] Shaughnessy 1992: 7-8.

[7] Gāo Míng 高明 1996: 346; Zhào Chéng 趙誠 2003: 3-4; Bái Bīng 白冰 2009: 2; Jiǎng Shūhóng 蔣書紅 2011: 50; Féng Shí 馮時 2016: 421.

[8] The Jìnjiāng *dǐng* 晉姜鼎, with 121 signs, dates to the Early Spring and Autumn Period. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 1318; Mǎ Chéngyuán 馬承源 1987: 629, 1990: 585, Zhōngguó shèhuì

influential ones are *Kǎogǔ tú* 考古圖 (AD 1092) by Lǚ Dàlín 呂大臨 (ca. 1042-1090)[1] and *Xuānhé bógǔ tú* 宣和博古圖 (AD 1123) by Wáng Fǔ 王黼 (AD 1079-1126). The former collects 234 bronzes, while the latter comprises 839 bronzes.[2] Although the collections in this period have only transcriptions and no interpretations,[3] the collections by Lǚ Dàlín 呂大臨 and Wáng Fǔ 王黼 provide the format and layout of vessel rubbing, inscription trans- and description which continues to be used in most bronze inscription publications to this day.

During the Yuán (AD 1271-1368) and Míng (AD 1368-1644) Dynasties, no great advance was made in bronze studies, and there was no collection or monograph on bronze inscriptions.[4] In the Qīng Dynasty (AD 1644-1911), under the sponsorship of Emperor Qiánlóng 乾隆 (AD 1736-1795), four collections (also known as the *Xīqīng sìjiàn* 西清四鑒) were compiled: (1) *Xīqīng gǔjiàn* 西清古鑒 (AD 1751), comprising 1529 bronzes, 586 of which with inscriptions, (2) *Níngshòu jiàngǔ* 寧壽鑒古 (ca. AD 1779), comprising 701 bronzes, 144 of which with inscriptions, (3) *Xīqīng xùjiàn jiǎbiān* 西清續鑒甲編 (AD 1793), comprising 944 bronzes, 257 of which with inscriptions, and (4) *Xīqīng xùjiàn yǐbiān* 西清續鑒乙編 (ca. AD 1793), comprising 900 bronzes, 192 of which with inscriptions. There were also numerous private collections during this period, and among them, the most influential one is *Jīgǔzhāi zhōngdǐng yíqì kuǎnzhì* 積古齋鐘鼎彝器款識 (AD 1804) by Ruǎn Yuán 阮元 (AD 1764-1849), comprising 550 inscriptions with transcriptions and notes. In the Qīng Dynasty, the study of the *Shuōwénjiězì* 說文解字 reached its peak, which, on the one hand, promoted bronze studies,[5] and bronze inscriptions were used as proof materials for the signs in the *Shuōwénjiězì* 說文解字.[6] On the other hand, bronze inscriptions could also help correct some errors in graphic forms in the *Shuōwénjiězì* 說文解字. Based on this, scholars have not only paid more attention to bronze inscriptions, but also clearly recognized that the *Shuōwénjiězì* 說文解字 is by no means infallible.[7]

kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 2826, 2007: 1496; Wú Zhènfēng 吳鎮烽 2012 (5): 371. For a transcription see also Mǎ Chéngyuán 馬承源 1990: 585 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (2): 392, 2007: 1496; Zhāng Guìguāng 張桂光 2010: 434; Wú Zhènfēng 吳鎮烽 2012 (5): 371. For discussions see Wú Yìqiáng 吳毅强 2009:79-83; Zhāng Chénghào 張程昊 2019: 104-109.

[1] For details, see the photocopy edition published by Zhōnghuá shūjú 中華書局 in 1987, which is attached to *Xù kǎogǔ tú* 續考古圖 and *Kǎogǔ tú shìwén* 考古圖釋文.

[2] Shaughnessy 1992: 8-10; Zhào Chéng 趙誠 2003: 4-6; Jiǎng Shūhóng 蔣書紅 2011: 50.

[3] Zhào Chéng 趙誠 2003: 26.

[4] Shaughnessy 1992: 10; Zhào Chéng 趙誠 2003: 30; Féng Shí 馮時 2016: 422.

[5] Shaughnessy 1992: 11.

[6] Zhào Chéng 趙誠 2003: 30.

[7] Zhào Chéng 趙誠 2003: 30-31; Jiǎng Shūhóng 蔣書紅 2011: 52.

From the fall of the Qīng Dynasty to around the 1930s, about 25 collections of bronze inscriptions were published.[1] The most influential one among them is *Sāndài jíjīn wéncún* 三代吉金文存 (1937) edited by Luó Zhènyù 羅振玉.[2] This collection is large in quantity (4831 inscriptions), and at the same time of excellent quality. In the following decades, it has become a must-have book in bronze studies. Moreover, the *Liǎngzhōu jīnwéncí dàxì túlù* 兩周金文辭大系圖錄 (1934) and *Liǎngzhōu jīnwéncí dàx*ì 兩周金文辭大系 (1935) by Guō Mòruò 郭沫若 brought a systematic historical analysis to the study of bronze inscriptions for the first time, periodizing 162 Western Zhōu bronzes and 161 Eastern Zhōu bronzes on the basis of three primary criteria: (1) personal names mentioned in the inscription, (2) the calligraphy and style of the text, and (3) the shape and decoration of the vessel.[3]

Furthermore, Wáng Guówéi 王國維 attempted for the first time to use palaeographic materials as a new basis for the history of Shāng and Zhōu. The method *Èrzhòng zhèngjùfǎ* 二重證據法 that he proposed for bronze study had a profound impact on later scholars.[4] This method advocates making full use of unearthed materials, such as, oracle-bone inscriptions, bronze inscriptions, bamboo manuscripts, and stone carvings to verify and supplement the records of handed-down documents. In addition, *Jīnwén biān* 金文編 compiled by Róng Gēng 容庚 (AD 1894-1983) in 1925 and revised in 1939，a concordance of graphic forms of bronze inscriptions, served as a practical research aid. This concordance consists of 1804 entries, which is roughly the number of signs that could be read by this period.

In the 1940s and 1950s, due to the Second Sino-Japanese War (1937-1945) and the Chinese Communist Revolution (1946-1950), there was not much research on bronze inscriptions. In the *Shāngzhōu yíqì tōngkǎo* 商周彝器通考 (1941), Róng Gēng 容庚 named different types of bronze vessels. Fifty-seven kinds of bronze vessels were divided into four categories and introduced one by one with drawings. Despite many criticisms and attempted revisions over the years, this heavily illustrated work established the vessel typology still dominant today. The most cited bronze collection in this period is *Shāng Zhōu jīnwén lùyí* 商周金文錄遺 (1957) edited by Yú Xǐngwú 于省吾, comprising 616 bronze inscriptions. In *Xīzhōu jīnwén duàndài* 西周金文斷代 (1959, 1956),[5] Chén

[1] Zhào Chéng 趙誠 2003: 89-90.
[2] For details, see the photocopy edition published by Zhōnghuá shūjú 中華書局 in 1983.
[3] Shaughnessy 1992: 15; Zhào Chéng 趙誠 2003: 91-97; Jiǎng Shūhóng 蔣書紅 2011: 53, Féng Shí 馮時 2016: 426.
[4] For details see Zhào Chéng 趙誠 2003: 97-99.
[5] The *Xīzhōu jīnwén duàndài* 西周金文斷代 was originally a series of six consecutive articles, the first two of which were published in the 9th and 10th issues of the 1955 volume of the *Kǎogǔ xuébào* 考古學報. The rest appeared in the 1st, 2nd, 3rd, and 4th issues of the 1956 volume. The entire series was later published by Zhōnghuá shūjú 中華書局 in 2004.

Mèngjiā 陳夢家 developed and supplemented the methodology proposed by Guō Mòruò 郭沫若 in *Liǎngzhōu jīnwéncí dàx*ì 兩周金文辭大系 (1935), which further improved the periodization of Western Zhōu bronzes.

From the 1960s to the 1970s, new inscribed bronzes were unearthed every year,[1] such as, the Hé *zūn* 何尊 (WJC 11819/ JC 6014),[2] the Yǒng *yú* 永盂 (WJC 6230/ JC 10322),[3] the Lì *guǐ* 利簋 (WJC 5111/ JC 4131; **Fig. 5.3.1-7**),[4] the Qiáng *pán* 牆盤 (also known as the Shǐqiáng *pán* 史牆盤) (WJC 14541/ JC

[1] For the basic information on the newly unearthed inscribed bronzes see Shèkēyuàn kǎogǔsuǒ 社科院考古所 1983 and Zhào Chéng 趙誠 2003: 202-216.

[2] The Hé *zūn* 何尊, with 122 signs, unearthed in Bǎojī 寶鸡, Shǎnxī 陕西 province in 1963, dates to the Early Western Zhōu period. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 4891; Mǎ Chéngyuán 馬承源 1986: 21, 1988: 20; Rawson 1990: 16-2; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 6014, 2007: 3703; Gāo Míng 高明 1996: 376; Wú Zhènfēng 吳鎮烽 2012 (21): 311; Féng Shí 馮時 2016: 560; Liú Xiáng 劉翔 et al. 2017: 62. For a transcription see also Mǎ Chéngyuán 馬承源 1988: 20 (also includes word commentaries); Gāo Míng 高明 1996: 375-377 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (4): 275, 2007: 3703; Běnshū biānxiězǔ 本書編寫組 2003: 616; Zhāng Guìguāng 張桂光 2010: 996; Wú Zhènfēng 吳鎮烽 2012 (21): 311 (with details on excavations and other collections); Féng Shí 馮時 2016: 559-564 (with word commentaries); Liú Xiáng 劉翔 et al. 2017: 61-64 (also includes word commentaries). For discussions see Zhāng Zhènglǎng 張政烺 1976: 66, Mǎ Chéngyuán 馬承源 1976: 64-65; Lǐ Xuéqín 李學勤 1981; Lǐ Mín 李民 1982: 116-121; Yáng Kuān 楊寬 1983: 53-57; Hé Yòuqí 何幼琦 1983: 59-61; Sūn Bīnlái 孫斌來 1984: 45-49; Chén Fúlín 陳福林 1991: 45-48; Wáng Jiànxīn 王建欣: 2018: 228-232; Luó Xīnhuì 羅新慧: 150-153.

[3] The Yǒng *yú* 永盂, with 123 signs, unearthed in Lántián 藍田, Shǎnxī 陕西 province in 1969, dates to the Middle Western Zhōu period. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 6910; Mǎ Chéngyuán 馬承源 1986: 104, 1988: 141; Rawson 1990: 21-9; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 10322, 2007: 5564; Wú Zhènfēng 吳鎮烽 2012 (13): 460. For a transcription see also Mǎ Chéngyuán 馬承源 1988: 141 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (6): 187, 2007: 5564; Běnshū biānxiězǔ 本書編寫組 2003: 677; Zhāng Guìguāng 張桂光 2010: 1585; Wú Zhènfēng 吳鎮烽 2012 (13): 459 (with details on excavations and other collections). For discussions see Bái Yúlán 白于藍 2010: 29-34; Zhào Chéng 趙誠 2003: 245-248; Qī Guìyàn 戚桂宴 1981: 448; Chén Bānghuái 陳邦懷 1972: 57-59; Táng Lán 唐蘭 1972: 58-62.

[4] The Lì *guǐ* 利簋, with 32 signs, unearthed in Lín Tóng 臨潼, Shǎnxī 陕西 province in 1976, dates to the Early Western Zhōu period. For a rubbing and transcription as well as discussion of the text see **5.3.2**. For more discussions see Yú Xǐngwú 于省吾 1977: 10-12; Táng Lán 唐蘭 1977: 8-9; Chuí Fèngnián 錘鳳年 et al. 1978: 77-84; Shāng Chéngzuò 商承祚 1978; Zhāng Zhènglǎng 張政烺 1978 58-59; Zhào Chéng 趙誠 2003: 216-226, 2014: 134-139; Xú Zhōngshū 徐中舒 1980: 109-110; Wú Mèngfù 吳孟複 1980: 67-68; Sūn Bīnlái 孫斌來 1993: 47-49; Wú Sūnquán 吳孫權 1995; Bái Guāngqí 白光琦 1996: 45-53; Narike Tetsuro 成家徹郎 and Lǚ Jìng 呂靜 1997: 25-27; Huáng Huáixìn 黃懷信 1998; Zhōu Yán 周言 2000: 121-122; Zhāng Yǒngshān 張永山 2001: 42-44; Luó Kūn 羅琨 2006: 55-60; Dài Wéntāo 戴文濤 2008: 57-60; Wú Wěi 吳偉 2009: 30-32; Zhāng Fùxiáng 張富祥 2010: 132-137; Zhāng Niànzhēng 張念征 2017: 111-115; Shí Yǔruò 時雨若 2019: 208-209; Lǐ Xiùliàng 李秀亮 2019: 33-43; Wáng Pèijī 王沛姬 2020: 124-128.

10175),[1] the Zhōngshānwáng *dǐng* 中山王鼎 (WJC 2517/ JC 2840)[2] and the Zhōngshānwáng *hú* 中山王壺 (also known as the Zhōngshānwáng *fānghú* 中山王方壺) (WJC 12455/ JC 9735),[3] the Zēnghóuyǐ *zhōng* 曾侯乙鐘 (also known as the Zēnghóuyǐ *biānzhōng* 曾侯乙編鐘) (WJC 15431-15494/ JC 286-349),[4]

[1] The Qiáng *pán* 牆盤, with 284 signs, unearthed in Fúfēng 扶風, Shǎnxī 陝西 province in 1976, dates to the Middle Western Zhōu period. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 6792; Mǎ Chéngyuán 馬承源 1986: 118, 1988: 158; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 10175, 2007: 5484; Gāo Míng 高明 1996: 386; Wú Zhènfēng 吳鎮烽 2012 (25): 601; Féng Shí 馮時 2016: 580. For a transcription see also Mǎ Chéngyuán 馬承源 1988: 158 (also includes word commentaries); Gāo Míng 高明 1996: 385-389 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (6): 132, 2007: 5564; Běnshū biānxiězǔ 本書編寫組 2003: 685; Zhāng Guìguāng 張桂光 2010: 1563; Wú Zhènfēng 吳鎮烽 2012 (25): 599; Féng Shí 馮時 2016: 579-593 (also includes word commentaries). For discussions see Lǐ Zhòngcāo 李仲操 1978: 33-34; Qiú Xīguī 裘錫圭 1978: 25-32; Lǐ Xuéqín 李學勤 1978: 149-158; Xú Zhōngshū 徐中舒 1978: 139-148; Chén Shìhuī 陳世輝 1980: 433-435; Liú Chǔtáng 劉楚堂 1985: 20-23; Lián Shàomíng 連劭名 1997: 20-24; Má Àimín 麻愛民 2002, 2003a: 71-74, 2003b: 80-83; Zhào Chéng 趙誠 2003: 259-268; Gāo Míng 高明 2013: 54-61; Chén Sīpéng 陳斯鵬 2013: 69-72; Fù Qiáng 付强 2017: 10-11; Dǒng Liánchí 董蓮池 2018: 14-18; Liú Míng 劉銘 2018: 73-74; Cháo Fúlín 晁福林 1989: 78-81, 2019: 150-157, 2020: 5-22.

[2] The Zhōngshānwáng *dǐng* 中山王鼎, with 469 signs, unearthed in Píngshān 平山, Héběi province in 1977, dates to the Middle of the Warring States period. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 1331; Mǎ Chéngyuán 馬承源 1987: 607, 1990: 567; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 2840, 2007: 1525; Gāo Míng 高明 1996: 414-415; Wú Zhènfēng 吳鎮烽 2012 (5): 456. For a transcription see also Mǎ Chéngyuán 馬承源 1990: 567 (also includes word commentaries); Gāo Míng 高明 1996: 412-417 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (2): 418, 2007: 1525; Zhāng Guìguāng 張桂光 2010: 446; Wú Zhènfēng 吳鎮烽 2012 (5): 456 (with details on excavations and other collections).

[3] The Zhōngshānwáng *hú* 中山王壺, with 450 signs, was unearthed in Píngshān 平山, Héběi province in 1977, dating to the middle of the Warring States period. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 5805; Mǎ Chéngyuán 馬承源 1987: 615, 1990: 573; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 9735, 2007: 5138; Wú Zhènfēng 吳鎮烽 2012 (22): 451-458; Féng Shí 馮時 2016: 630-633; Liú Xiáng 劉翔 et al. 2017: 170-173. For a transcription see also Mǎ Chéngyuán 馬承源 1990: 567 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (2): 418, 2007: 1525; Zhāng Guìguāng 張桂光 2010: 446; Wú Zhènfēng 吳鎮烽 2012 (22): 449-450 (with details on excavations and other collections); Féng Shí 馮時 2016: 629-641 (with word commentaries); Liú Xiáng 劉翔 et al. 2017: 168-182 (also includes word commentaries). For discussions of Zhōngshānwáng 中山王 bronze vessels see Zhū Déxī 朱德熙 and Qiú Xīguī 裘錫圭 1979: 42-52; Zhāng Kèzhōng 张克忠 1979: 39-50, 98-99; Luó Fúyí 罗福頤 1979: 81-85; Dù Nǎisōng 杜乃松 1980: 152-156; Shāng Chéngzuò 商承祚 1982 62-74; Zhū Déxī 朱德熙 1987: 56; Jiāng Yǔnyù 姜允玉 2005: 17-23; Chén Guāngtián 陳光田 and Xú Yǒngjūn 徐永軍 2005: 72-74; Zhāng Sùfèng 張素鳳 2005: 111-125; Yán Hán 閆函 2015; Zhōu Bō 周波 2019: 147-168; Sū Róngyù 蘇榮譽 and Lǐ Yàoguāng 李耀光 2021 154-169; Huáng Yìfēi 黃益飛 2021: 531-537.

[4] The Zēnghóuyǐ *zhōng* 曾侯乙鐘, 64 pieces, was unearthed in Suíxiàn 隨縣, Húběi province in 1978, dating to the early Warring States period. For a rubbing see also Mǎ Chéngyuán 馬承源 1987: 448-527, 1990: 456-495; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 286-349, 2007: 347-485; Wú Zhènfēng 吳鎮烽 2012 (28): 29-382. For a transcription see also Mǎ Chéngyuán 馬承源 1990: 456-495 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (1): 254-429, 2007: 347-485; Zhāng Guìguāng 張桂光 2010: 71-98; Wú Zhènfēng 吳鎮烽 2012 (28): 29-382 (with details on excavations and other collections). For discussions

and the Duōyǒu *dǐng* 多友鼎 (WJC 2500/ JC 2835).[1] These newly discovered bronze inscriptions were the focus of research in this period. Moreover, a thesaurus of glosses on the bronze inscriptions *Jīnwén gǔlín* 金文詁林, edited by Zhōu Fǎgāo 周法高 (AD 1915-1994), was published in 1975. It includes 1894 entries, copying comments (i.e. the analysis of graphs) from some 290 books and articles.

In the last two decades of the 20th century, great progress was made in the study of bronzes, especially in the development of research aids. With regard to the collection of bronze inscriptions, the eighteen-volume collection *Yīnzhōu jīnwén jíchéng* 殷周金文集成 published in 1984-1995, comprises 11983 bronze inscriptions from the Shāng and Zhōu period. Another important collection is *Shāng Zhōu qīngtóngqì míngwén xuǎn* 商周青銅器銘文選, consisting of 925 bronze inscriptions with word commentaries (21 from Shāng, 512 from Western Zhōu, and 392 from Eastern Zhōu).[2]

Moreover, an expanded edition of *Jīnwén biān* 金文編 edited by Zhāng Zhènlín 張振林 and Mǎ Guóquán 馬國權, consisting of 2480 entries, was published in 1985. Since then, several works have made supplements to it, such as, *Jīnwén biān dìngbǔ*《金文編》訂補,[3] *Jīnwén biān jiàobǔ*《金文編》校補,[4] and *Sìbǎn jīnwén biān jiàobǔ* 四版《金文編》校補.[5] In addition, several dictionaries, such as, *Jīnwén chángyòng zìdiǎ*n 金文常用字典 (1000 entries),[6] *Jīnwén dàzìdiǎn*

see Lǐ Chúnyī 李純一 1981, Féng Shí 馮時 1986: 632-638; Chén Lìxīn 陳麗新 2005: 72; Zhāng Shuò 張碩 2017: 126-128.

[1] The Duōyǒu *dǐng* 多友鼎, with 277 signs, was unearthed in Xī'ān 西安, Shǎnxī 陝西 province in 1980, dating to the Late Western Zhōu period. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 1326; Mǎ Chéngyuán 馬承源 1986: 252, 1988:283; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 2835, 2007: 1512; Wú Zhènfēng 吳鎮烽 2012 (5): 393-394; Liú Xiáng 劉翔 et al. 2017: 114-115. For a transcription see also Mǎ Chéngyuán 馬承源 1988: 283 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (2): 406, 2007: 1512; Zhāng Guìguāng 張桂光 2010: 440; Wú Zhènfēng 吳鎮烽 2012 (5): 392 (with details on excavations and other collections); Liú Xiáng 劉翔 et al. 2017: 113-119 (also includes word commentaries). For discussions see Shaughnessy 1983-1985; Lǐ Xuéqín 李學勤 1981: 87-92; Lǐ Zhòngcāo 李仲操 1982: 95-99; Liú Yǔ 劉雨 1983: 152-157; Liú Xiáng 劉翔 1983: 82-85; Liú Huán 劉桓 1984: 125-126; Lǐ Yìhǎi 李義海 2004: 32-33; Cáo Hàngāng 曹漢剛 2014: 55-63; Lǐ Ruì 李銳 2018: 33-40; Céng Fányí 曾繁宜 2019.

[2] Mǎ Chéngyuán 馬承源 1986, 1987, 1988, 1990.

[3] Chén Hànpíng 陳漢平 1993.

[4] Dǒng Liánchí 董蓮池 1995.

[5] Yán Zhìbīn 嚴志斌 2001.

[6] Chén Chūshēng 陳初生 1987.

金文大字典,[1] and *Jiǎnmíng jīnwén cídiǎn* 簡明金文詞典 (1975 entries);[2] and indexes, such as, *Qīngtóngqì míngwén jiǎnsuǒ* 青銅器銘文檢索 (3910 entries),[3] *Yīnzhōu jīnwén jíchéng yǐndé* 殷周金文集成引得 (4972 entries),[4] *Jīnwén yǐndé (yīnshāng xīzhōu juàn)* 金文引得 (殷商西周卷),[5] and *Jīnwén yǐndé (Chūnqiū Zhànguó juàn)* 金文引得 (春秋戰國卷),[6] of bronze inscriptions were published successively. There are also other kinds of research aids, such as, *Jīnwén zhùlù jiǎnmù* 金文著錄簡目 (7312 bronzes),[7] *Xīnchū jīnwén fēnyù mùlù* 新出金文分域目錄,[8] and *Sòngdài zhùlù shāngzhōu qīngtóngqì míngwén jiānzhèn*g 宋代著錄商周青銅器銘文箋證,[9] which briefly introduce the information of excavations and collections.

Besides, many monographs on bronze inscriptions also emerged during this period. For example, *Xīzhōu jīnwén guānzhì yánjiū* 西周金文官制研究,[10] dealing with official system of the Western Zhōu and *Xīzhōu jīnwén yǔfǎ* 西周金文語法,[11] dealing with grammar of bronze inscriptions of the Western Zhōu. As one of the results of the project "The Dating Project of the Xià, Shāng and Zhōu Period" (*Xià Shāng Zhōu duàndài gōngchéng* 夏商周斷代工程), different views on the periodization of bronze inscriptions of the Western Zhōu as well as on the chronology of the kings of the Western Zhōu can be found in *Xīzhōu zhūwáng niándài yánjiū* 西周諸王年代研究.[12]

In the first two decades of the 21st century, many conclusive achievements have been made in the study of bronzes.[13] With regard to the collection of bronze inscriptions, *Yīnzhōu jīnwén jíchéng* 殷周金文集成 was revised in 2007, with transcriptions added next to the rubbings. *Jìnchū yīnzhōu jīnwén jílù* 近出殷周金文集錄[14] and the *Jìnchū yīnzhōu jīnwén jílù èrbiān* 近出殷周金文集錄二編[15] supplemented about a thousand inscriptions that *Yīnzhōu jīnwén jíchéng* 殷周金文集成 did not include. Wú Zhènfēng 吳鎮烽 published a series of collections of bronze inscriptions, that is, *Shāngzhōu qīngtóngqì míngwén jì túxiàng jíchéng* 商周青銅器銘文暨圖像集成 (2012, 16704 pieces), *Shāng Zhōu*

[1] Dài Jiāxiáng 戴家祥 1995.
[2] Wáng Wényào 王文耀 1998.
[3] Zhōu Hé 周何 1995.
[4] Zhāng Yàchū 張亞初 2001.
[5] Jiàoyùbù rénwén shèhuì kēxué zhòngdiǎn yánjiūjīdì 教育部人文社會科學重點研究基地 et al. 2001.
[6] Jiàoyùbù rénwén shèhuì kēxué zhòngdiǎn yánjiūjīdì 教育部人文社會科學重點研究基地 et al. 2002.
[7] Sūn Zhìchú 孫稚雛 1981.
[8] Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1983.
[9] Liú Zhāoruì 劉昭瑞 2000.
[10] Zhāng Yàchū 張亞初 and Liú Yǔ 劉雨 1986.
[11] Guǎn Xièchū 管燮初 1981.
[12] Zhū Fènghàn 朱鳳瀚 and Zhāng Róngmíng 張榮明 1998.
[13] For Chinese studies of bronze inscriptions from 1949 see Luó Wèidōng 羅衛東 2016.
[14] Liú Yǔ 劉雨 and Lú Yán 盧岩 2002.
[15] Liú Yǔ 劉雨 and Yán Zhìbīn 嚴志斌 2010.

qīngtóngqì míngwén jì túxiàng jíchéng xùbiān 商周青銅器銘文暨圖像集成續編 (2016, 1511 pieces) and *Shāng Zhōu qīngtóngqì míngwén jì túxiàng jíchéng sānbiān* 商周青銅器銘文暨圖像集成三編 (2020, ca.1500 pieces), which are the most comprehensive collections of bronze inscriptions at present, comprising about 20,000 pieces of bronze rubbings from the Shāng and Zhōu periods.

Moreover, there are also digital databases of bronze inscriptions, such as, *Shùzìhuà jīnwén zīliào jiǎnsuǒ xìtǒng* 數字化金文資料檢索系統 made by Zhōngguó wénzì yánjiū yǔ yìngyòng zhōngxīn 中國文字研究與應用中心 of Huádōng University, *Shāng Zhōu jīnwén zīliào tōngjiàn* 商周金文資料通鑒 made by Wú Zhènfēng 吳鎮烽, and *Hàndá wénkù* 漢達文庫 (CHANT Database) made by Liú Diànjué zhōngguó gǔjí yánjiū zhōngxīn 劉殿爵中國古籍研究中心 of Hong Kong University.

Furthermore, monographs on the history of bronze research in China was published, such as, *Èrshíshìjì jīnwén yánjiū shùyào* 二十世紀金文研究述要[1] and *Zhōngguó jīnwénxué shǐ* 中國金文學史,[2] introducing the history of Chinese bronze studies since the Sòng Dynasty. Besides, new concordances of bronze inscriptions have also appeared, such as *Xīn jīnwén biān* 新金文編 (2011) by Dǒng Liánchí 董蓮池, *Xīnjiàn jīnwén zìbiān* 新見金文字編 (2012) by Chén Sīpéng 陳斯鵬 et al., and *Shāng jīnwén biān* 商金文編 by Yán Zhìbīn 嚴志斌 (2016).

In addition, there are many monographs on different aspects of bronze inscriptions. For instance, *Xīzhōu qīngtóngqì niándài zōnghé yánjiū* 西周青銅器年代綜合研究[3] and *Shāngdài qīngtóngqì míngwén yánjiū* 商代青銅器銘文研究[4] deal with the periodization of bronze inscriptions. *Qínxì wénzì yánjiū: cóng hànzìshǐ de jiǎodù kǎochá* 秦系文字研究: 從漢字史的角度考察,[5] *Qín Sānjìn jìnián bīngqì yánjiū* 秦三晋紀年兵器研究[6] and *Wú Yuè tímíng yánjiū* 吳越題銘研究[7] deal with the bronze inscriptions from different states of the Warring States period. *Chūnqiū jīnwén gòuxíng xìtǒng yánjiū* 春秋金文構形系統研究,[8] *Chūnqiū Zhànguó jīnwén zìtǐ yǎnbiàn yánjiū* 春秋戰國金文字體演變研究[9] and *Shāng Zhōu jīnwén xíngtǐ jiégòu yánjiū* 商周金文形體結構研究[10] deal with the graphic forms of bronze signs. *Xīzhōu jīnwén yǔxù yánjiū* 西周金

[1] Zhào Chéng 趙誠 2003.
[2] Bái Bīng 白冰 2009.
[3] Péng Yùshāng 彭裕商 2003.
[4] Yán Zhìbīn 嚴志斌 2017.
[5] Chén Zhāoróng 陳昭容 2003.
[6] Sū Huī 蘇輝 2013.
[7] Dǒng Shān 董珊 2014.
[8] Luó Wèidōng 羅衛東 2005.
[9] Zhāng Xiǎomíng 張曉明 2006.
[10] Wáng Lán 王蘭 2013.

文語序研究[1] and *Liǎngzhōu jīnwén xūcí yánjiū* 兩周金文虛詞研究[2] deal with the grammar of bronze inscriptions.

2.3.4.2 Western academic studies

Western studies of bronze inscriptions began with the discussion of the Jìn hóu *pán* 晉侯盤 at the beginning of the 20th century.[3] Jìn hóu *pán* 晉侯盤,[4] with 538 inscribed signs, was first published by Stephen Wootton Bushell (Bǔ Shìlǐ 卜士禮, AD 1844-1908) in the second volume of *Chinese Art* in 1906. In the twenty years following the publication of the Jìn hóu *pán* 晉侯盤, many Sinologists joined the discussion of its authenticity. With the exception of Edward H. Parker (Zhuāng Yánlíng 莊延齡, AD 1849-1926) and Lionel Charles Hopkins (Jīn Zhāng 金璋), scholars, such as Edouard Chavannes (Shā Wǎn 沙畹, AD 1865-1918), Paul Pelliot (Bó Xīhé 伯希和, AD 1878-1945), Herbert Allen Giles (Zhái Lǐsī 翟理思, AD 1845-1935), John Calvin Ferguson (Fú Kāisēn 福開森, AD 1866-1945) and W. Percival Yetts (Yè Zī 葉茲, AD 1878-1957), all argued that the Jìn hóu *pán* 晉侯盤 was a forgery.[5]

The "International Exhibition of Chinese Art" held in Burlington House at London (1935-1936) exhibited about 250 bronze vessels. The center piece of the exhibition was the Kānghóu *guǐ* 康侯簋 (WJC 5020/ JC 4059; **Fig. 2.3-4**),[6] which attracted the attention of Western scholars, such as Yetts (1937), who made a translation of the text and explored its historical background.

[1] Pān Yùkūn 潘玉坤 2005.
[2] Wǔ Zhènyù 武振玉 2010.
[3] Shaughnessy 2018: 201.
[4] The Jìn hóu *pán* 晉侯盤 is also called Bǔ shì *pán* 卜氏盤 since it was bought by Bǔ shì lǐ 卜士禮 (Stephen Wootton Bushell) in 1870 at Běijīng.
[5] For details on the discussions of the authenticity of Jìn hóu *pán* 晉侯盤 see Shaughnessy 2018: 201-206.
[6] The Kānghóu *guǐ* 康侯簋, with 34 signs, was unearthed in Hénán province in 1931, and dates to the Early Western Zhōu period. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 2611; Mǎ Chéngyuán 馬承源 1986: 20, 1988: 19; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 4059, 2007: 3703; Wú Zhènfēng 吳鎮烽 2012 (10): 385. For a transcription see also Mǎ Chéngyuán 馬承源 1988: 19 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (3): 257, 2007: 2231; Běnshū biānxiězǔ 本書編寫組 2003: 25-26; Zhāng Guìguāng 張桂光 2010: 611; Wú Zhènfēng 吳鎮烽 2012 (10): 384 (with details on excavations and other collections).

Fig. 2.3-4
The Kānghóu *guǐ* 康侯簋 (above) and its text (right)[1]

Swedish Sinologist Bernhard Karlgren (Gāo Běnhàn 高本漢, AD 1889-1978) delivered an academic speech in the academic activities related to the exhibition, and published the "Yin and Chou in Chinese Bronzes" in 1936, which has had a great influence on Western research on bronze vessels. However, scholars such as Max Loehr (Luó Yuè 羅越, AD 1903-1988) (1936) and Herrlee Glessner Creel (Gù Lìyǎ 顧立雅, AD 1805-1994) (1936a and b) criticized his academic views.[2] Creel pointed out that Karlgren had grossly underestimated the historical value of bronze inscriptions.[3] "Some Weapons and Tools of the Yin Dynasty" by Karlgren, published in 1945, also had a far-reaching influence on Western studies of ancient Chinese civilization. He argued that the so-called "northern" bronze vessels unearthed in Ānyáng 安陽 were originally produced in China and later spread to Siberia. Moreover, he postulated that King Wu conquered the Shāng in 1027 BC.

From the 1950s to 1970s, Noel Barnard (Bā Nà 巴納, AD 1922-2016) was the primary scholar engaged in the study of bronze vessels, mainly focusing on the authenticity and casting of bronze vessels.[4] His most representative views on the authenticity of bronze vessels are found in "Chou China: A review of the third volume of Cheng Te-k'un's *Archaeology in China*" (1965) and "The incidence of forgery amongst Archaic Chinese bronzes: Some preliminary notes" (1968). He argued that a lot of bronze vessels were fakes, even including many

[1] Wú Zhènfēng 吳鎮烽 2012 (10): 384-385.
[2] For a brief history of Creel's research see Shaughnessy 2018: 247-249.
[3] Creel 1936a.
[4] For a brief history of Barnard's research see Shaughnessy 2018: 249-252.

important bronze vessels of the Western Zhōu Period, such as the Máogōng *dǐng* 毛公鼎 (WJC 2518/ JC 2841)[1] and the Sǎnshì *pán* 散氏盤 (also known as the Sǎn *pán* 散盤) (WJC 14542/ JC 10176).[2] His views on the authenticity of bronze vessels had a negative impact on Western academic circles at that time. Worried about the authenticity of the inscriptions, few scholars were now willing to use bronze inscriptions for research.[3] In addition, research on bronze inscriptions by other scholars, such as Keightley (1969), Virginia C. Kane (1970), and Creel (1970), failed to lead to a breakthrough.

The exhibition "The Great Bronze Age of China: An Exhibition from the People's Republic of China" held in Los Angeles in 1980, once again stimulated Western scholars' interest in the study of Chinese bronzes.[4] During the exhibition, an academic conference was held. The published collection of conference papers, *The Great Bronze Age of China: A Symposium* (edited by George Kuwayama, 1983), contains ten articles from authoritative scholars in the research of bronze vessels from the United States and Canada at that time, such as, "Western Chou history reconstructed from bronze inscriptions" by David S. Nivison (Ní Déwèi 倪德衛), and "*Hu* vessels from Xinzheng: Toward a definition of Chu style" by Jenny F. So (Sū Fāngshū 蘇芳淑). During this period, more scholars, such as Darrel Paul Doty (Dù Délún 杜德倫) (1982), Edward L. Shaughnessy (Xià Hányí 夏含夷) (1983), Robert w. Bagley (Bèi Gélì 貝格立) (1987), and Lothar von Falkenhausen (Luó Tài 羅泰) (1988), joined in the study of bronze inscriptions.

In the 1990s, due to the project "The Dating Project of the Xià, Shāng and Zhōu Period" (*Xià Shāng Zhōu duàndài gōngchéng* 夏商周斷代工程) in China, the Western study of bronzes has made great progress. Primary scholars of bronze

[1] The Máogōng *dǐng* 毛公鼎, with 497 signs, unearthed in Qíshān 岐山, Shǎnxī 陝西 province in the Late Qing Dynasty, dates to the Late Western Zhōu period. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 1332; Mǎ Chéngyuán 馬承源 1986: 288, 1988: 316; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 2841, 2007: 1534-1543; Wú Zhènfēng 吳鎮烽 2012 (5): 473-480. For a transcription see also Mǎ Chéngyuán 馬承源 1988: 316-319 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (2): 426-433, 2007: 1541-1543; Běnshū biānxiězǔ 本書編寫組 2003: 463-469; Zhāng Guìguāng 張桂光 2010: 448-450; Wú Zhènfēng 吳鎮烽 2012 (5): 471-472 (with details on excavations and other collections).

[2] The Sǎnshì *pán* 散氏盤, with 350 signs, said to have been unearthed in Fèngxiáng 鳳翔, Shǎnxī 陝西 province in the Qīng Dynasty, dates to the Late Western Zhōu period. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 6793; Mǎ Chéngyuán 馬承源 1986: 268, 1988: 297; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 10176, 2007: 5486; Wú Zhènfēng 吳鎮烽 2012 (25): 604. For a transcription see also Mǎ Chéngyuán 馬承源 1988: 297-299 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (6): 134-135, 2007: 5487; Běnshū biānxiězǔ 本書編寫組 2003: 691-695; Zhāng Guìguāng 張桂光 2010: 564; Wú Zhènfēng 吳鎮烽 2012 (25): 602-603 (with details on excavations and other collections).

[3] Shaughnessy 2018: 220, 240.

[4] Shaughnessy 2018: 225.

inscriptions in this period are, such as, Constance Anne Cook (Kē Hèlì 柯鶴立), Jessica Rawson (Luó Sēn 羅森), Shaughnessy, Jenny F. So, and Wolfgang Behr (Bì È 畢鶚). For instance, Shaughnessy's *Sources of Western Zhou History: Inscribed Bronze Vessels* (1991) systematically studies the bronze inscriptions of the Western Zhōu Dynasty. Behr's "Reimende Bronzeinschriften und die Entstehung der chinesichen Endreimdichtung" (1996) uses phonology to conduct a comprehensive study of bronze inscriptions.[1] Musicological analysis of more than two hundred Zhōu Dynasty bronze inscriptions, and translation of many important inscriptions, such as the Hé *zūn* 何尊 (WJC 11819/ JC 6014)[2] and the Dà yú *dǐng* 大盂鼎 (WJC 2514/ JC 2837).[3] In *New Sources of Early Chinese History: An Introduction to the Reading of Inscriptions and Manuscripts* (edited by Shaughnessy, 1997),[4] bronze inscriptions of Western Zhōu and Eastern Zhōu are introduced in detail by Shaughnessy and Gilbert L. Mattos (Mǎ Jǐdào 馬幾道, AD 1939-2002) in chapters 2 and 3. Cook's research primarily focuses on the Chǔ 楚 culture, as in "The Ideology of the Chu ruling class: Ritual rhetoric and bronze inscriptions" (1999). It has been said that the *Eastern Zhou Ritual Bronzes from the Arthur M. Sackler Collections* by So, published in 1995, together with other two works about the Arthur M. Sackler Collections, that is, *Shāng Ritual Bronzes in the Arthur M. Sackler Collections* (Bagley 1987) and *Western Zhou Ritual Bronzes from the Arthur M. Sackler Collections* (Rawson 1990), represent the highest level of research on ancient Chinese bronzes by Western scholars in the 20th century.[5]

Since the year 2000, as the result of an unending series of discoveries in archaeology in China, new research has emerged continuously, and Western research on bronzes has become quite developed. For the period 2000 to 2010, newly discovered inscribed bronze vessels can be found in "Newest sources of Western Zhou history: Inscribed bronze vessels, 2000–2010" (Shaughnessy 2017a) with details, such as discovery information, pictures, rubbings, transliterations and English translations. The primary scholars of this period

[1] The dissertation was published in 2009 as *Reimende Bronzeinschriften und die Entstehung der chinesichen Endreimdichtung*.

[2] For details of Hé *zūn* 何尊 see **2.3.4.1**.

[3] The Dà yú *dǐng* 大盂鼎, with 291 signs, dates to the Early Western Zhōu period. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 1328; Mǎ Chéngyuán 馬承源 1986: 32, 1988: 37; Rawson 1990: 294-21.1; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 2837, 2007: 1516-1518; Gāo Míng 高明 1996: 378; Wú Zhènfēng 吳鎮烽 2012 (5): 444; Féng Shí 馮時 2016: 565; Liú Xiáng 劉翔 et al. 2017: 65. For a transcription see also Mǎ Chéngyuán 馬承源 1988: 37 (also includes word commentaries); Gāo Míng 高明 1996: 377-380 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (2): 410-411, 2007: 1516-1518; Běnshū biānxiězǔ 本書編寫組 2003: 616; Zhāng Guìguāng 張桂光 2010: 458-462; Wú Zhènfēng 吳鎮烽 2012 (5): 443 (with details on excavations and other collections); Féng Shí 馮時 2016: 564-574 (also includes word commentaries); Liú Xiáng 劉翔 et al. 2017: 65-72 (also includes word commentaries).

[4] The Chinese version of this book *Zhōngguó gǔwénzìxué dǎolùn* 中國古文字學導論 was published in 2013.

[5] Shaughnessy 2018: 233.

are Li Feng (李峰), Von Falkenhausen, Behr, Olivier Venture (Fèng Yíchéng 鳳儀誠), Maria Khayutina (Xià Yùtíng 夏玉婷), and Cook. Their research touches on many aspects of the bronzes and their inscriptions. For example, some research focuses on the geography and politics of the Western Zhōu Period, such as Li Feng (2001, 2006, 2008) and Lothar (2006). Some research provide a comprehensive study of oracle-bone and bronze inscriptions (such as, Venture 2002, 2004; Kern 2007; and Behr 2017), while other studies focus on Western Zhōu history and archaeology (such as Khayutina 2002, 2010, 2014). Nivison began his study of the chronology of the Western Zhōu around the 1980s,[1] and the culmination of his 30 years of research was published in 2009.[2] In addition, *Xīguānhànjì —— Xīfāng hànxué chūtǔ wénxiàn yánjiū gàiyào* 西觀漢記 —— 西方漢學出土文獻研究概要 by Shaughnessy was published in 2018, which introduces the history of Western studies on ancient Chinese materials, including oracle-bone inscriptions, bronze inscriptions, stone inscriptions and bamboo manuscripts.

[1] For a brief history of Nivison's research see Shaughnessy 2018: 257-258.

[2] The Chinese translated version *»Zhúshū jìnián« jiěmí*《竹書紀年》解謎 was published in 2013.

2.4 Mesoamerica

With regard to the origins of Mesoamerican writing, discussions mainly focus on four early graphic recording systems in Mesoamerica, that is, Olmec, Zapotec, epi-Olmec and Maya. The current status of research concerning the origin of these early systems is introduced in this section.

2.4.1 Olmec

There is still considerable debate on the presence of a writing system in the Olmec culture. Scholars have paid a great attention to the so-called Olmec texts, such as the Cascajal Block, the San Andrés seal and La Venta Monument 13. Proponents of an Olmec writing argue that the 62 engraved graphs ("signs") on the Cascajal Block (**Fig. 4.1-1**), discovered in the Olmec heartland of Veracruz, are the oldest writing in Mesoamerica, dating to the transition between the Early and Middle Preclassic periods (ca. 1000-800 BC).[1] Likewise, two graphs on cylinder seal excavated at San Andrés (**Fig. 4.1-6**),[2] northeast of the Olmec center of La Venta, dating to ca. 650 BC, and four sculpted graphs on La Venta Monument 13 (**Fig. 4.1-8 and 9**),[3] discovered in La Venta, are also treated as Olmec writing. However, in the absence of phonetic spellings and a linguistic context, it cannot be proven that these so-called Olmec texts represent language, so there is no solid evidence for Olmec writing.[4] For details about the views of these scholars see discussion in **4.1**.

2.4.2 Zapotec

The Zapotec script began to draw scholars' attention from the early 19th century when Guillermo Dupaix (AD 1746-1818) traveled through Oaxaca and documented several stones incised with hieroglyphs. From then on, several scholars started to work on this script. Some researchers, including Leopoldo Batres (AD 1852-1926) (1889), Manuel Martínez Gracida (AD 1847-1924) (1910) and Constantine Rickards (1910, 1918, 1922), paid their attention to compiling the inscriptions, while other scholars, such as Nicolas León (AD 1859-1929) (1901), Eduard Seler (AD 1849-1922) (1904), concentrated on calendrical matters in the texts. Scholars also made attempts to determine the nature and content of the script. They argued that the script was the combination of

[1] Rodríguez Martínez et al. 2006: 1611; Skidmore 2006: 1; Ortiz Ceballos et al. 2007: 15-18; Magni 2008, 2012: 2; Mora-Marín 2009: 397, 2020: 1; Carrasco and Englehardt 2015: 1; Fuls and Wells 2015: 183; Englehardt et al. 2019: 1.
[2] Pohl et al. 2002: 1984-1987; Lacadena 2008: 617; Mora-Marín 2009: 406.
[3] Drucker 1952: 181-182; Coe 1968:148; Marcus 1976: 43, 47, 1992: 42; Lacadena 2008: 610; Justeson 2012.
[4] For details see discussions in **4.1**.

symbolic, ideographic, and phonetic signs (Leopoldo Batres 1902) and its content was mainly about local history (Constantine Rickards 1922).[1]

Alfonso Caso (AD 1896-1970) published two important works on the Zapotec script: *Las Estelas Zapotecas* (1928) and *Calendario y Escritura de las Antiguas Culturas de Monte Albán* (1947). The former is the first systematic work on this topic, mainly focused on the Zapotec calendar and the nature of the script. Zapotec hieroglyphs were divided into two categories in this work: (1) glyphs with numerical notations, and (2) glyphs without numbers. He argued that the glyphs with numerals were Zapotec day names, because the coefficients in his corpus were all under 13, which reminded him of known Mesoamerican calendrical systems. On this basis, he made an effort to reconstruct the day-name list of the Zapotec calendar and interpret the year glyphs and year bearers. The glyphs without numerals were used to discuss the nature of Zapotec hieroglyphs. From his perspective, those glyphs were either ideograms or phonetic, and interpretations of those non-calendrical glyphs were also conducted. In his 1947 study, Caso focused on the inscriptions of Monte Albán I and II, in which more instances of year glyph, day glyphs and noncalendrical glyphs were identified. There are two views worth mentioning: (1) For the period I inscriptions, some glyphs without numbers may function as day names, because they were similar in form to glyphs from Monte Albán II which were accompanied by numbers. (2) For the period II corpus, the main content of the texts might refer to the names of towns conquered by Monte Albán. Caso's excavations and hieroglyphic studies laid the basis for our understanding of the Zapotec script.[2]

After Caso, scholars, such as Marcus, Whittaker and Urcid have also made contributions to the study of the Zapotec script. Marcus, who has published several works on Zapotec writing, argued that "the four major Mesoamerican writing systems (Zapotec, Maya, Mixtec, and Aztec) were all heterogeneous systems—partly pictographic, ideographic and phonetic."[3] Her studies has paid great attention to the societal uses of Zapotec writing and argued that there are some functional links between political evolution and early writing. Her emphasis on the political use of writing was maximized in her comparative study of Mesoamerican writing systems in 1992. By comparing Mesoamerica's four best-known Prehispanic writing systems (that is, Aztec, Mixtec, Zapotec and Maya), she discussed the calendars, the establishment of political territories, the naming of nobles, royal marriages, royal ancestors and other aspects of early Mesoamerica, and came to the conclusion that writing was used

[1] The introduction of these early works is based on Urcid 2001: 29-35.
[2] For more about Caso's studies on Zapotec script see also Urcid 2001: 35-47.
[3] Marcus 1976: 38.

as a political tool in Mesoamerica societies and "writing was used to make public and permanent a whole series of messages that the hereditary leaders of society deemed important".[1]

Whittaker argued that the Zapotec system appeared with the rising power of Monte Albán in the Oaxaca Valley, and that by the Middle Classic, Zapotec writing had largely given way to an iconographic system, and then went out of use in the Late Classic period. The language of the inscriptions of Monte Albán was Zapotec from the very beginning. Zapotec signs were probably logographic and represented lexemes or word-bases minus affixes. On the basis of the so-called "hill glyph", he identified several place names in the inscriptions of Mound J at Monte Albán.[2] The glyphic format in the Period II conquest tablets was as follows: (place sign of the subjugated town)—verb (conquer/ destroy)—subject (glyph for Monte Albán)—object (downturned head).[3] In addition, a classified catalogue of the Preclassic hieroglyphs of Monte Albán can be found in his work of 1980.[4]

Urcid started his work on Zapotec script in the 1990s. From his perspective, Zapotec script is logosyllabic in nature, a mixed system with a combination of narrative pictography and logosyllabic glyphs. His works on Zapotec script (2001, 2005) were mainly about Zapotec calendar, and the two main topics were reconstructing the glyphic day list and translating the sixteen-century Zapotec day names recorded by Friar Juan de Córdova.[5]

Scholars have reached a consensus on the Zapotec calendar, arguing that Zapotec time reckoning was done in terms of elapsed time, and the calendrical system in Zapotec inscriptions conforms to what is known of the Mesoamerican calendar. In other words, from the earliest inscriptions on, the Zapotecs reckoned a 260-day sacred calendar consisting of 20 days names and 13 numerals, a 365-day solar calendar, divided into 18 months of 20 days plus 5 days, and a Calendar Round of 52 years.[6] The sign identified as the year sign is the iconic representation of a royal headband, usually with a cartouched cross at the front, and Zapotec year bearers occupied either positions 2, 7, 12, 17 in the 20 day-name list,[7] or 3, 8, 13 and 18 of the day-name series.[8] Apart from this, the meaning of "calendrical glyphs", signs accompanied by numerals, depends on their calendrical or naming functions. The former function suggests

[1] Marcus 1992: 4. For details about Marcus's studies see discussions in **4.2**.
[2] Whittaker 1992: 10-12. For details see discussions in **4.2**.
[3] Whittaker 1992: 12-13. For details see discussions in **4.2**.
[4] For details about Whittaker's studies see discussions in **4.2**.
[5] For details about Urcid's studies see discussions in **4.2**.
[6] Whittaker 1983, 1992: 9-10; Urcid 2001; Kaufman and Justeson 2008: 230; Marcus 2020: 25-29.
[7] Caso 1928: 45-47; Urcid 2001: 113-126; Marcus 2020: 29.
[8] Whittaker 1983, 1992: 16-19.

that the signs indicate a calendrical reckoning directly. Since it is also the Mesoamerican practice that people take their names from the ritual calendar, "calendrical glyphs" occurring alone beside an individual are often recognized as personal names.[1]

2.4.3 Epi-Olmec

The epi-Olmec script was first introduced to academia in 1907, when William Henry Holmes (AD 1846-1933) published a greenstone effigy (now known as the Tuxtla Statuette, **Fig. 5.3.2-7**) with a hieroglyphic script that was distinct from the Maya and Zapotec scripts. In the following decades, several other texts, such as Tres Zapotes Stela C, Cerro de las Mesas stela, and the O'Boyle Mask, were unearthed. But until the 1980s, the Tuxtla Statuette script was still regarded as an early form of the Maya hieroglyphic system.[2] This situation came to an end in 1986, when La Mojarra Stela 1 (**Fig. 4.3-1**) was discovered at the Acula River, Veracruz, Mexico, and published in 1988.[3] A recent object added to the Epi-Olmec corpus is an inscribed Teotihuacan-style greenstone mask (**Fig. 5.3.2-8**).[4] Currently, there are about thirteen epi-Olmec texts known to scholarship.[5]

The interpretation of the epi-Olmec inscriptions depends to a large extent on the research and hypothesis proposed by Justeson and Kaufman.[6] In March 1991, John Justeson and Terrence Kaufman began to work together to interpret epi-Olmec texts. Their interpretation was mainly based on the texts on La Mojarra Stela 1 and the Tuxtla Statuette. In their most important work "A Decipherment of Epi-Olmec Hieroglyphic Writing" (1993), Justeson and Kaufman claimed to have fully deciphered the epi-Olmec script.[7] Then their decipherment, as they alleged, gained support when applied to the newly discovered column of text on La Mojarra Stela 1.[8] Their proposed decipherment and the transcript of the Isthmian texts were summarized in "Epi-Olmec" in *The Cambridge Encyclopedia of the World's Ancient Languages*[9] and *Epi-Olmec Hieroglyphic Writing and Texts*.[10]

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[1] Whittaker 1992: 9-10; Urcid 2001: 428; Kaufman and Justeson 2008: 230-231; Marcus 2020: 387.
[2] Coe 1976.
[3] Capitaine 1988: 7.
[4] Houston and Coe 2003: 155-159.
[5] Kaufman and Justeson 2001: 2.2, 2004: 1074, 2008: 196; Houston 2004: 296; Justeson 2012; Davletshin 2014: 76-77; Strauss 2018: 132-231. For details see discussions in **4.3**.
[6] Justeson and Kaufman 1993, 1997; Kaufman and Justeson 2001: 2.2, 2004: 1074, 2008: 196; Justeson 2012, 2018.
[7] For details see discussions in **4.3** and **5.3.2**.
[8] Justeson and Kaufman 1997.
[9] Woodard 2004.
[10] Justeson and Kaufman 2001.

However, Justeson and Kaufman's decipherment was disputed by some scholars, such as Houston and Coe, who argued that the decipherment was proposed "with only a handful of texts available, no bilingual, only one real picture, and a poorly understood cultural context — and without definitively ruling out that Isthmian may have encoded a language other than Mixe-Zoquean, for instance, Huastec or Totonac".[1] From their perspective, Justeson and Kaufman's decipherment has not met five criteria of a successful decipherment:

> "1. A large and well-published database: there should be many texts, and most of these should encode complete sentences.
> 2. A correct and provable identification of a known language which is encoded by the script, preferably reconstructed in phonology, grammar, and syntax to the period in which the script was in use.
> 3. One or more bilingual texts, one member of which is in an already deciphered or otherwise readable script.
> 4. A well-understood cultural context to aid in the understanding and reading of the texts. Any proposed reading of an ancient text should "make sense" within this context to be accepted as plausible.
> 5. If the script is logo-syllabic or heavily logographic, there should be accompanying pictorial references (as there are in Egyptian and Classic Maya) to apply to the texts".[2]

Moreover, technical difficulties and conceptual problems have also undermined the proposed decipherment. For instance, as a linguist, Kaufman is used to working with living languages and seems to anticipate a relatively complete representation of language in ancient inscriptions.[3] In addition, Houston and Coe were unable to successfully apply Justeson and Kaufman's decipherment to the Teotihuacan-style mask, which became known to Mesoamerican scholarship in 2002.[4] However, Mora-Marín has claimed that Houston and Coe failed to address the central methodological and theoretical precepts of the Justeson and Kaufman proposal, so there has been only a limited response to their rebuttal.[5]

On the other hand, scholars, such as Davletshin and Justeson, have reached a basic consensus on the epi-Olmec calendar, arguing that epi-Olmec Long Count dates have the same calibration to the divinatory calendar as Maya.[6] In both the epi-Olmec and Mayan Long Count, the position of the 365-day year is

[1] Houston and Coe 2003: 152.
[2] Houston and Coe 2003: 151.
[3] Houston and Coe 2003: 154.
[4] Houston and Coe 2003: 155-158.
[5] Mora-Marín 2010: 13.
[6] Davletshin 2000; Justeson 2018: 64-73.

recorded using the "Long Count Introductory Glyph", which are referred to "month patron" by epigraphers. The month patrons point to a base date of the 365-day year counts for 20 days (1 month) earlier than in the Mayan count, and the correlation constant for the epi-Olmec Long Count is 584 265.[1]

2.4.4 Maya

Serious Maya research began with two publications,[2] *Incidents of Travel in Central America, Chiapas and Yucatán* (1841) and *Incidents of Travel in Yucatán* (1843), written by John Lloyd Stephens (AD 1805-1852) and Frederick Catherwood (AD 1799-1854) after their travel through the Maya areas of Mexico and Central America.[3]

In 1862, Charles Étienne Brasseur de Bourbourg (AD 1814-1874) discovered by accident a copy of the manuscript *Relación de las Cosas de Yucatán* by bishop Diego de Landa (AD 1524-1579) in the library of the Royal Academy of History in Madrid. With the help of this manuscript, scholars were able to decipher the Maya hieroglyphic date and bar-and-dot numerical system. What Landa believed to be Maya alphabetic characters in the manuscript has become known as the so-called "Landa alphabet" (**Fig. 2.4-1**), which was treated as the true key to the decipherment for about one hundred years.[4]

Most research before the 1930s concentrated on the calendar and its structure, such as Goodman (1905), Thomas (1882).[5] During this time, most of the scholars failed to recognize the nature of the Maya script and argued that Maya glyphs could not be phonetic characters.[6] J. Eric S. Thompson (AD 1898-1975) was the leading scholar among them. Owing to his dominating influence on modern Maya studies, a number of important discussions of phoneticism in the Maya script, such as Hill (1952) and Whorf (1933), were unfortunately ignored.[7]

From the 1950s to 1960s, there were two great breakthroughs in Maya decipherment. In the first place, Yuri Valentinovich Knorosov (AD 1922-1999), a Russian scholar from Leningrad's Institute of Ethnology, published the article "Drevnaja pismennost' central'noj Ameriki" (Ancient Writing of Central America) in 1952, in which he compared several deciphered writing systems.

[1] Davletshin 2002; Justeson 2018: 65-70. For the Long Count dates in these epi-Olmec texts see Justeson 2018: 64, table 1.
[2] For a complete decipherment history of Maya script see Coe 1992.
[3] Coe 1992: 84, 2012: Chapter 3; Johnson 2013: 9.
[4] Coe 1992: 92-97, 2012: Chapter 3; Houston 2001: 29-34; Johnson 2013: 9; Hoston and Martin 2016: 451; Law and Stuart 2017: 128.
[5] Law and Stuart 2017: 128.
[6] Coe 1992: 115-136, 2012: Chapter 5; Houston 2001: 118-126; Johnson 2013: 10.
[7] These works can refer to Coe 1992: 73-123.

On the basis of their similarities and the number of signs used by different writing systems, Knorosov came to the conclusion that the Maya writing system consisted of both logograms and phonetic signs.[1] The second breakthrough was made by Tatiana Proskouriakoff (AD 1909-1985) in 1960, when she claimed that texts on Maya monuments recorded historical information. This revolutionized the entire field of Maya research.[2]

Fig. 2.4-1
The "Landa alphabet"[3]

By the second half of the 20th century, most scholars agreed that the Maya hieroglyphic writing included phonetic features for recording spoken language. Decipherment of both phonetic and logographic hieroglyphs boomed from the 1980s to the early 21st century.[4] Among them, the decipherment of the *ajaw* glyph was of great importance. In October 1989, Nikolai Grube and Steve Houston independently read the glyph as *wa-y(a)*, interpreting *wa* as an affix and taking *ya* to be a phonetic complement to the logographic sign. They regarded *wa-ya* as spelling *way,* the "co-essence" of both humans and supernaturals. Coe pointed out that the discovery of *way* by these new-generation epigraphers was a great step forward in the initial phase of Maya decipherment.[5] Without doubt, considerable breakthroughs have already been achieved in the decipherment of the Classic Mayan script,[6] and about 80 percent of the signs have been deciphered.[7] Today, approximately 75 percent of Maya texts can now be understood.[8]

Archaeology continues to yield new inscriptions. Among these new discoveries, the most prominent ones are the excavation of an 8th-century hieroglyphic

[1] Coe 1992: 137-143, 2012: Chapter 6; Johnson 2013: 10; Hoston and Martin 2016: 445-446; Law and Stuart 2017: 29.
[2] Coe 1992: 163-166, 2012: Chapter 6; Houston 2001: 312-357; Hoston and Martin 2016: 445; Law and Stuart 2017: 129.
[3] Coe 1992: 97; Houston 2001: 33.
[4] Matsumoto and Carter 2020: 600.
[5] Coe 1992: 242, 2012: Chapter 11.
[6] Houston and Martin 2016.
[7] Coe and Houston 2015: Chapter 9.
[8] Grube 2012: 845.

stairway at El Palmar, Campeche, with a long text dealing with a sub-royal *lakam* official who served the Sako'k dynasty;[1] and the inscribed blocks unearthed at Ixtutz comprising part of a hieroglyphic bench panel, other blocks from which were identified in museum and private collections.[2] With regard to known materials, the *Códice Maya de México* (also known as *Grolier Codex*), whose authenticity was long disputed, has now been authenticated by iconographic, physical, and chemical studies.[3]

From the 21st century, digital technologies have played an increasing important role in Maya studies, and have been primarily used for three purposes: imaging, the most common motive; data aggregation, usually in large and increasingly openly accessible databases; and text editing.[4] Currently, the most notable project is the Text Database and Dictionary of Classic Maya established at the University of Bonn from 2014. The expected outcomes of this project are inventories of relevant sites and museums, a sign catalog, a comprehensive bibliography, an image database, and a dictionary, which are being made freely accessible through ongoing updates.[5]

Last but not the least, similar to Zapotec and epi-Olmec studies, scholars have achieved a consensus on the Maya calendar, which consists of the Calendar Round and the Long Count.[6] The Calendar Round is an ever-repeating cycle of 52 years of 365 days each, which consists of the "*tzolk'in*" and "*haab*". The first part of a Calendar Round is the ritual cycle of 260 days, the so-called "*tzolk'in*", consisting of a dual cycle of 20 named days and of the numbers from 1 to 13, which serve as coefficients of the days. Mayans employ a vigesimal (base 20) system of numerals: a dot stands for "one" and a bar stands for "five". The *haab* is a vague year of 365 days, consisting of a cycle of 18 named months of 20 days, and a five-day "month" (the *wayeb*) is added to the end of the final full month.

The base of the Long Count is a period of 360 days called the *tun*. The *tun* can be divided into 18 smaller periods known as *winals*, each containing 20 days (*k'ins*). Twenty *tuns* are grouped into a larger time unit called a *k'atun*, and 20 *k'atuns* formed a *bak'tun (or pik)*. The complete cycle consisted of 13 *bak'tuns* (or *piks*). Normally, the very first Long Count date is called the Initial Series, and placed just above it is a large glyph extending over two columns, called the Introductory Glyph.

[1] Tsukamoto and Esparza Olguín 2015: 45; Matsumoto and Carter 2020: 604-605.
[2] Matsumoto and Carter 2020: 605.
[3] Coe et al. 2015; Matsumoto and Carter 2020: 606.
[4] Bodel 2012: 285–292; Matsumoto and Carter 2020: 609.
[5] Diederichs 2015; Prager et al. 2014; Wagner et al. 2014; Matsumoto and Carter 2020: 610-611.
[6] Coe and Van Stone 2005: 38-47; Bricker 2008: 166-168; Palka 2010: 227; Grube 2012: Chapter 64; Stuart 2012; Coe and Houston 2015: Chapter 3.

2.5 Contexts of writing and the driving force behind it

For what purpose was writing originally developed? According to the evidence now available, only Mesopotamia has direct data to support a reasonably complete sequence of the development that led to writing. To generate hypotheses about the purpose of the initial invention of writing in other areas, such as Egypt, China, and Mesoamerica, detailed inferences can only be made from Mesopotamia, and from surviving materials in these areas. With regard to Mesopotamia, economic administration, control and monitoring of flows of goods and services throughout a city may be the central motivation for, and function of, writing. It is perhaps plausible, as some scholars have claimed, to extend inferences about writing in Mesopotamia to its innovation and purpose in other areas of the world, but the situation in these areas does not seem to fully support this.

2.5.1 Mesopotamia

With regard to the contexts of writing and the driving force behind its invention in Mesopotamia, facilitating the administration and economy as well as coping with the social and political complexity of the state have long been the most widely proposed factors. For instance, Ignace J. Gelb (AD 1907-1985) argues that Sumerians created writing to meet the increasing needs of the public economy and administration. With the rising productivity of the country, Sumerians found it necessary to keep accounts of goods that were transported to the cities, and of the manufactured products that left the cities.[1] Recent studies on the origin of Mesopotamian writing still focus on this administrative purpose, but each of them varies to some extent.

Michalowski claims that the invention of writing in Mesopotamia at the end of the fourth millennium BC is part of the sudden expansion (that is, rapid urbanization, population growth, and dramatic increase in the division of labor and political development) of Mesopotamian civilization. Although the invention of writing in Mesopotamia cannot be ascribed to any single cause, the primary context for the earliest writing was administrative necessity.[2]

Like Michalowski, Cooper sees increasing social and political complexity in such areas as administration, income-tracking, disbursements, and transfers within large organizations in ancient Babylonia as crucial factors leading to the invention of writing.[3] Similarly, Robson argues that an increasing strain was

[1] Gelb 1963: 62.
[2] Michalowski 1996: 33.
[3] Cooper 2004: 72.

placed on trust and memory because of the growth in the size and complexity of society and the economy, resulting in a rising numerical sophistication, as well as in the invention of writing in the late fourth millennium BC in Mesopotamia.[1]

Nissen argues that the appearance of Mesopotamian writing developed on the basis of a long development of accounting and communication devices and also had a close relationship with the development of a stratified social system and highly differentiated economy.[2] The Early Uruk period (ca. 4100[?] BC – 3800 BC) is characterized by a new division of labor, increased social stratification, and early forms of economic accountability. During this period, settlement sizes rarely surpassed 20 hectares, and simple counters and stamp seals were considered adequate for the limited size of economic and political organization at that time.[3] In the following period, Late Uruk (ca. 3800 – 3300 BC), the population and the number of settlements increased dramatically, and the city of Uruk grew to a size of at least 250 hectares.[4] From Nissen's perspective, due to this enormous scale of growth, new organizational means of economic administration and new information storage system were needed. Although the development of rules of economic and political life stimulated the development of communication technologies, writing was not an immediate outcome of the demands for more efficient administrative devices, because attempts were first made to enhance traditional technologies. Writing was not invented until the very end of the first round of urbanization.[5]

In his 2010 study, Woods stresses the close connection between the invention of writing in Mesopotamia and the dramatic increase in sociocultural complexity in the context of the sudden expansion of Mesopotamian civilization. From his perspective, this is clearly due to the fact that most archaic texts are administrative documents dealing with economic transactions. Writing was most likely invented to solve the bureaucratic problems caused by an increasingly complex economy.[6] In a more recent study, Woods further proposes that one of the principal driving pressures behind the development of writing, or perhaps even the invention of writing itself, in Mesopotamia between the Uruk IV and III periods was not simply bookkeeping, but bookkeeping for the purpose of economic planning.[7] Some texts of Uruk III, such as MSVO 1: 185, MSVO 4: 43 and 45, and CUSAS 1: 198, as Woods argued, correspond to the contingency tables of modern statistical analysis, so any

[1] Robson 2007: 37.
[2] Law et al. 2015: 212-213; Nissen 2015: 123.
[3] Nissen 2015: 124-127.
[4] Nissen 2015: 128.
[5] Nissen 2015: 129-130.
[6] Woods 2010a: 17, 2010b: 34.
[7] Woods 2015: 121, 140.

suggestion that the sole purpose of these texts was merely for accountability is unconvincing.[1] From his perspective, "the ancients collected and structured data in this way for the very same reasons that motivate the modern contingency table——namely, that it facilitates data analysis and the understanding of the relationships between categorical variables".[2] On this basis, trends of the past can be properly understood, and planning can be made for economic activities in the future. Moreover, Woods has pointed out that this proposal is consistent with the argument put forth by both Selz (1999) and Steinkeller (2004) that economic forecasting was the main motivation behind administrative record-keeping in the third millennium.[3]

In contrast, Glassner rejects the opinion that economics alone drove people to write.[4] That is, Sumerian writing should not be reduced to a tool for accounting. The early cuneiform texts, as Glassner argued, can be divided into three categories: private documents, archives of institutions, and school texts. The private texts only document a minimal use of writing, and the graphic marks are almost exclusively numerical.[5] The archives of institutions consist of various subjects, including the administration of fields, food rations, the accounting of labor, and so forth.[6] Before the invention of writing, administrative practice had already reached a high level of sophistication through the application and manipulation of sealings.[7] But the method of accounting reached limits that could only be overcome by writing.[8] In terms of school texts, thematic lists had already appeared in the Late Uruk period, and these lists include titles, ceramic objects, foodstuffs, textiles, animals and place names. The lists expanded and increased in scope from the Uruk III period until they reached a considerable size in the first millennium. These lists constitute a study of the writing system and Its signs, and, at the same time, they provide a type of analysis that seeks to put the world in order.[9] Therefore, it is important to distinguish, as Glassner argued, between the invention of a device and its social uses, so Sumerian writing should not be reduced to a mere tool for accounting.[10]

[1] Woods 2015: 123-138.
[2] Woods 2015: 138.
[3] Woods 2015: 139.
[4] McGeough 2005: 135.
[5] Glassner 2003: 183.
[6] Glassner 2003: 184.
[7] Glassner 2003: 189.
[8] Glassner 2003: 192-193.
[9] Glassner 2003: 193.
[10] Glassner 2003: 198.

2.5.2 Egypt

Early writing in Egypt has been long connected with ceremonial display. For example, Gelb believed that Egyptian hieroglyphic writing was used mainly for sacred purposes.[1] Some scholars, such as Wengrow, still hold this opinion. The latter points out that, like Mesopotamia, Egypt in the fourth millennium BC also experienced the emergence of "complex societies", but the processes resulting in the invention of writing are not the same. Some of the inscriptions were used for ceremonial display, which is due to the following reasons: (1) the scarcity of writing; (2) the density of high-statusimagery on the labels; (3) the demanded skills and intensive labor involved in making the year-labels, including the addition of colored pigment to miniature signs; (4) the process of marking and labeling grave goods in a manner associating them with the performance of royal ritual, rather than the human labor and exchange.[2] However, the finds at Abydos in Upper Egypt, west of the Nile, consisting of tablets bearing numerical notations, personal names and so forth, provide evidence for closer associations between early Egyptian writing and bureaucratic matters. Discussions concentrating on the contexts of these tablets are as follows.

Dreyer claims that it is quite possible that writing in Egypt was originally invented for administrative and economic purposes, and was used exclusively for these purposes for a long time.[3] This is due to the fact that inscriptions on seal impressions, pots and small labels are short notations about the origin and quantity of deliveries.[4] The driving force for the development of writing was very likely, according to Dreyer, the increasing problems concerning the expansion of the administration, and the ensuing difficulties of controlling the increased production and distribution of economic goods.[5] At first, there seem to have been sufficient symbols for delivery records. But with the increasing need for quality control or allocation of responsibility, a universal system became necessary, with which more names, locations, economic estates and administrative units could be expressed. The rebus principle was applied very soon in this situation to express signs with similar sound, forming the basis for the writing system.[6]

Kahl, like Dreyer, argues that the invention of writing in Egypt has a close relationship to the identification and administration of the grave goods of the elites at that time. But only a small number of written documents from early

[1] Gelb 1963: 72.
[2] Wengrow 2011: 99-103.
[3] Dreyer 1998: 89, 145, 2008: 18.
[4] Dreyer 2008: 18.
[5] Dreyer 2003: 124.
[6] Dreyer 2000: 15, 2003: 124-126.

Egypt have come down to us, and it is quite possible that numerous documents written on perishable materials, such as papyrus or fabric, have not survived. Therefore, Kahl believes that in addition to the administration of grave goods, economic interests in the political world at that time may also have been a driving force behind the invention of writing. This is due to the expansion of the Naqada culture to Central and Lower Egypt and to Nubia, not long before the construction of Tomb U-j (dating from the end of Naqada IIb to Naqada IId). In the southern expansion to Nubia, trade interest and the extraction of raw materials played an important role, and in the northern expansion, the sea and land trade routes to the Middle East also needed to be controlled. As a result, the administration of these economic interests in the expansion could be treated as a stimulus for the origin of writing. Besides, the driving force behind the invention of writing may also have come from religion, as the written documents of Tomb U-j are all associated with funerary rites.[1]

Similarly, in Jiménez-Serrano's opinion, fulfilling the necessities of the new-born state at Abydos was very likely to be one of the reasons for the invention of writing in Egypt. The young state required a more capable system of communication to keep information understandable in the future. The message conveyed by predynastic iconic representation cannot be properly understood if the reader was not informed about the specific information represented. In this context, at the end of Naqada II or the beginning of Naqada III, phonetic values were added to the icons, and the earliest writing in Egypt appeared.[2]

In contrast with the above studies, Macarthur elaborates that inscriptions from the late Predynastic period and the Early Dynastic period (ca. 3150-2868 BC) often make references to economic matters, and ceremonial objects express the power of the rulers. Therefore, "the use of the script in this period was intricately tied to the burgeoning state, functioning in administrative and ideological capacities (e.g., royal and elite status marking)".[3]

Likewise, Baines attaches equal importance to both administrative and non-administrative uses of early writing in Egypt. In his opinion, although writing served administrative purposes in early dynastic Egypt, its non-administrative uses, especially its high-cultural use (including display), were no less crucial.[4] The written materials of Tomb U-j seem to be administrative, because they attached information to deliveries. But writing in that early period could only support a quite restricted range of administration. And the display purposes of inscriptions are also conceivable. Because of this, the functions of the earliest

[1] Kahl 2002: 66-67.
[2] Jiménez-Serrano 2007: 63.
[3] Macarthur 2010: 121.
[4] Baines 2007: 3-4, 117, 122, 144-145.

writing can be summarized as communication and display and the "polar spread from communication to display is prominent in discussions of what stimulated the invention of writing".[1] Therefore, almost from the very beginning, writing had already served these two purposes.[2] It is a distinctive feature of Egyptian writing that it makes use in all periods of both a hieroglyphic and a hieratic form.[3] This division indicates that neither the invention of writing nor the motivation for its further development can be reduced to a single factor or related to a single sphere of use on high-cultural or practical matters. And in statistical terms, hieratic might always be overwhelmingly dominant. Moreover, "[f]or the elite of early Egypt, the system was effective, was differentiated into display and administration—attested only indirectly—and carried enormous prestige".[4] In addition, in contrast to Mesopotamia, in which writing developed together with the complex society and the state, the latter formed much faster in Egypt, and writing appeared only after state formation.[5] From the invention of writing until the recording of continuous language, the relationship between writing and the state was passive or interactive: "it aided centralization and was expanded, through central decision rather than evolution, to contribute more to the same process and perhaps to help in specific aspects of administration".[6]

Regulski argues that, due to the northward expansion of the Naqada culture, the end of the Naqada II period is characterized by internal changes in Egypt.[7] The ink inscriptions of Tomb U-j and the sealings used for administrative purposes of the Naqada IId1 are part of a complex (inter) national network of exchange of goods. By the beginning of the Naqada IIIa period, the process of state formation was well underway. So Regulski claims that the invention of writing should be related to these political and administrative events.[8] Therefore, the driving force for the invention of writing should be correlated to a growing complexity of interactions between different regional polities and the establishment of a centralized state in the vicinity of Abydos at the end of Naqada II, and the development of the writing system was a long process and probably not yet finished by the beginning of the Third Dynasty.[9]

Moreover, Regulski, like Baines, believes that early writing served not only as an administrative tool but also as a means for cultural and elite display. In other words, early writing was created for both utilitarian and ceremonial purposes.

[1] Baines 2004: 152.
[2] Baines 2007: 37.
[3] Baines 2007: 118.
[4] Baines 2007: 145.
[5] Baines 2007: 36.
[6] Baines 2007: 115.
[7] Regulski 2008: 997.
[8] Regulski 2008: 997, 2016: 6.
[9] Regulski 2008: 1000-1001.

This is due to the fact that only ca. 1% of the entire population could write in the later Old Kingdom, and the percentage was probably even lower in the Early Dynastic period. In addition, much early writing is incorporated into many representational works such as ceremonial palettes. In his opinion, "[f]rom its earliest use, writing fulfilled the dual roles of ordering and directing the flow of material goods, while redefining the social context of the commodities to which it was attached".[1]

Stauder agrees in rejecting an original administrative function of writing in Egypt, in contrast to the situation in southern Mesopotamia.[2] Instances of writing in late 4th millennium BC Mesopotamia and Egypt were, as argued by Stauder, significantly different in several aspects, such as contexts, materials used, and types of signs. For example, in Mesopotamia, the earliest written graphs appeared as part of the already highly complex information technologies on clay, in which sealings also play an important role; while in Egypt, the earliest graphs are often associated with the king's name and recorded on ivory or bone plaques ("labels", "tags") attached to valuable goods. So the possibility of transferring an "Uruk model" to Egypt is, therefore, not given for writing.[3]

Moreover, Stauder argues that inscriptions in Tomb U-j at Abydos (ca. 3250 BC) were not writing, since they did not yet represent language.[4] The earliest Egyptian writing, as Stauder alleged, was attested in the late 0th Dynasty (ca. 3150 BC),[5] with a limited repertoire of signs.[6] The earliest examples of writing are royal names and a few place names relating to royal actions.[7] Early phonetic signs are found especially in place names embedded in complex visual compositions on hard-to-work prestige objects, alongside emblematic signs. Since the time of Iri-Hor, phonetic spellings are found in the so-called "delivery notations", that is, words for "deliveries" of various types, such as "taxation," "what is brought in," and "provisions". These words were initially on vessels, later also on labels and sealings. In the word **nNḤB** (Stauder: LOTUS.BUD-*n*) 'tax, taxation', the sign **n** functions as a phonetic marker indicating that the main sign **NḤB** (Stauder: LOTUS.BUD) stands for 'tax, taxation' per rebus (**Fig. 2.5-1**).[8] These products, as Stauder argued, were marked and distinguished through the combination of a logogram and an alphabetic sign, an innovative and restricted visual language tightly associated with kingship.[9]

[1] Regulski 2016: 5.
[2] Stauder 2010, 2021, 2022a, 2022b.
[3] Stauder 2021: 36-39.
[4] Stauder 2021: 44-47, 2022a: 35-37, 2022b: 229-230. For details see discussion in **2.2**.
[5] Stauder 2021: 31, 2022a: 37, 2022b: 217.
[6] Stauder 2021: 43, 2022a: 37.
[7] Stauder 2022b: 253.
[8] For more details see Stauder 2022a: 36, 2022b: 255-256.
[9] Stauder 2022b: 217.

By marking prestigious products, this writing became part of a visual display of power.[1]

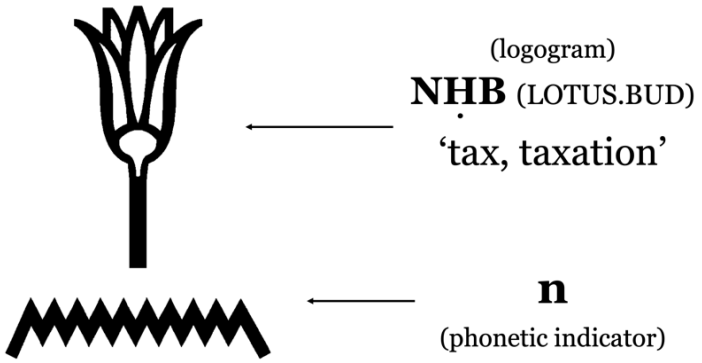


Fig. 2.5-1
An early Egyptian combination of a logogram and an alphabetic sign

From Stauder's perspective, this early Egyptian writing had a strong onomastic focus and co-evolved with visual culture.[2] The Bull Palette (**Fig. 2.2-9,** ca. 3200-3100 BC) is a good case in point. The framing WALLED_ENCLOSURE (Stauder: WALLED.ENCLOSURE) indicates that the two signs (LION and POT) inside stand for a place name, and at the same time, sets these two signs apart in the field of pictorial representation (**Fig. 2.5-2**). The place LION$^{n(w)}$ (Stauder: LION-*nw*) is under the large representation of a charging bull standing for the ruler. The POT sign, which has no lexical function in the graphic system, is instead, according to Stauder, "a phonetic indicator of the word ending */-n ˘/ or */-n ˘w/,"[3] that is, for the final section of the toponym in question.

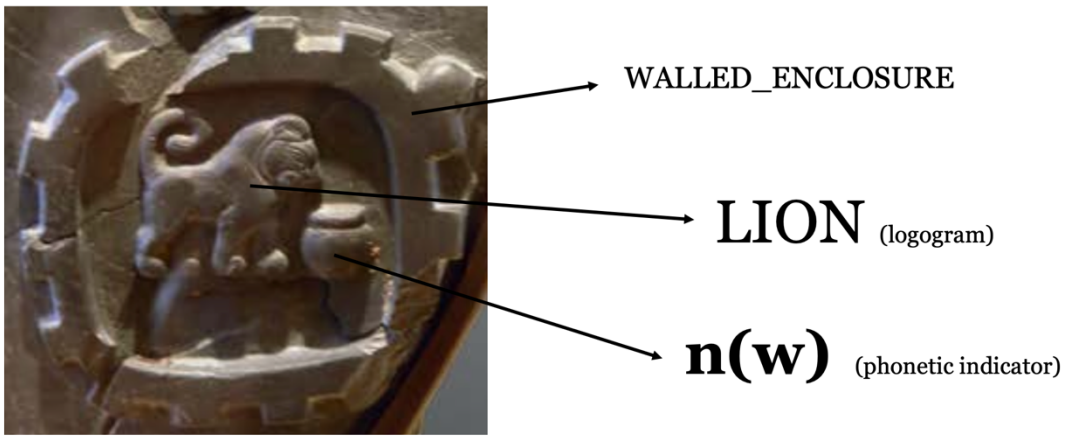


Fig. 2.5-2 The place name on the Bull Palette

[1] Stauder 2022a: 37-39.
[2] Stauder Stauder 2021: 44, 2022b: 233, 2022b: 243.
[3] Stauder 2022a: 36. For more discussions see also Stauder 2022b: 243.

Because of its integration with visual culture, Stauder claims that early Egyptian writing is a mode of visual communication in which the visual integrity of the signs matters profoundly. To preserve this visual integrity of the signs, phonetic strategies played an important role while the system was being developed.[1] This is due to the fact that phoneticism permitted expansion of the scope of writing to new words without harming the visual integrity of signs.[2] Therefore, Stauder argues that the invention of writing in Egypt could have come from the fact that the scribes were busy intensifying exclusive forms of visual communication that pointed to royalty.[3]

With regard to the invention of writing and the driving force behind it in Egypt, sholars have a variety of views. Some, such as Dreyer, Kahl and Jiménez-Serrano, argue that early writing in Egypt was invented for an administrative purpose. Some scholars, such as Macarthur, Baines and Regulski, attach equal importance to both administrative and non-administrative uses, such as display, in the earliest period. Stauder, by contrast, argues for a close relationship between the earliest writing in Egypt and visual culture. Clearly, the views of the above scholars all bear some truth to a certain extent. On the basis of current research, it is not yet possible to decide in favor of one thesis, and more in-depth research, especially on the nature of the inscriptions in Tomb U-j at Abytos, is needed.

2.5.3 China

With regard to the contexts of writing and the driving force behind its invention in China, it is generally believed by most Chinese scholars that writing is the product of a certain stage of the society's development, one in which it became necessary to record large bodies of information by means of a graphic system that reproduced language.[4] This stage is described as referring to "civilized society" (*wénmíng shèhuì* 文明社會), one of the main features of which is the emergence of the state.[5] On this basis, some Chinese scholars have recently claimed that the invention of Chinese writing was due to the exchanges and contacts between different social and cultural groups in ancient China, resulting in the rise of kingship, which in turn led to the invention of writing. Specifically, the Èrlǐtóu 二裏頭 Culture eventually replaced the Táosì 陶寺, Wángchénggǎng 王城崗, and Liángzhǔ 良渚 Cultures as the greatest empires in the Zhèngzhōu 鄭州 area by ca. 2000 BC. The establishment of kingship

[1] Stauder 2022b: 253.
[2] Stauder 2022b: 270.
[3] Stauder 2021: 66.
[4] Qiú Xīguī 裘錫圭 1988: 2, 2013: 1; Gǒng Yùshū 拱玉書 et al. 2009: 33.
[5] Gǒng Yùshū 拱玉書 et al. 2009: 33.

required writing to, for example, record royal orders and edicts, transmit information, and supervise slavery. In other words, the operation of the state allegedly cannot be realized without writing.[1]

However, the situation of the Inka empire in the Andes region contradicts these views. The Inkas administered their entire state with the help of the khipu rather than writing. Khipus are the knotted-cord devices used for record-keeping in the Inka empire. Specialists on the khipu, such as Urton, argue that some khipus ("narrative khipus", as Urton calls them) contain coded units of signification which can be consulted by khipu-keepers for narrative performances, such as recounting origin stories and accounts of the deeds of the Inkas,[2] but the interpretation of these "narrative" khipus is controversial and hypothetical, and even if they can convey information, there is no evidence that they represent language, so it is better to class them with the other two graphic recording systems rather than with writing. Some scholars, such as Boone, prefer a broad definition of writing, classifying khipus as "semasiographic writing".[3] However, as discussed in Chapter 1, there is a general agreement on the nature of graphic recording systems (that is, notation, iconography and writing) in the western tradition. It is not necessary to broaden the definition of writing, causing confusion between writing and other graphic recording systems. Therefore, the khipu is not writing and the relationship between the early state and writing claimed by these Chinese scholars is untenable.

In recent studies, Haicheng Wang, who was educated in both the Chinese and Western traditions, supports an administrative stimulus for the invention of writing in China. From his perspective, writing could not have come into being without the state.[4] As we known, oracle-bone inscriptions found at Ānyáng 安陽 are the first substantial corpus of Chinese writing, but they are divination texts (or "display inscriptions", as Wang calls them) and no everyday texts have been found so far. Following Bagley's opinion, Wang claims that everyday administrative documents contemporary to oracle-bone inscriptions were written on perishable materials like wood and bamboo strips that did not survive.[5] This possibility undoubtedly cannot be ruled out. For example, graphic forms of certain oracle-bone or bronze signs indicate that the basic tool and material of early Chinese writing might have been a brush and bamboo strips, and there are a small number of oracle-bone texts written with a brush, and even the pottery patterns of the Neolithic period were written with a brush

[1] Lǐ Fā 李发 and Páng Miáo 庞苗 2021: 86.
[2] Urton 2002; Urton and Brezine 2011: 325.
[3] Boone 1994: 15-17, 2000: 30.
[4] Haicheng Wang 2007, 2014, 2015.
[5] Haicheng Wang 2015: 133.

or similar tool.[1] However, even if there were Shāng texts written on wood and bamboo strips, the content was not necessarily administrative. As some scholars, such as Keightley, have pointed out, the recording of inscriptions and divination activities were not carried out at the same time. Inscriptions were recorded after the divination events were fulfilled. There was a time gap between the initiation of the divination activity and its completion, so the diviner would probably have had a notebook, most likely made of bamboo strips, in which inscriptions were first recorded.[2]

Wang argues that the quantity of various things, such as human sacrifices and captured animals, in the inscriptions, are indications of book-keeping, and the Shāng would have paid great attention to the accounting of the flow of people and materials. From his perspective,

> "Communication with the spirits is the content of the first inscriptions that survive from ancient China, but communicating with the spirits was not the motive that inspired the invention of Chinese writing. The motive for invention was undoubtedly in the administrative sphere, where the overriding concern was to exert control, and the means of control was to make inventories and create accountability. "[3]

Firstly, if oracle-bone inscriptions were used for administrative purposes, the book-keeping of, for example, human sacrifices or captured animals, could have been done in a simpler form, as in Mesopotamia and Egypt, instead of in the format of the king's questioning of his ancestors. Moreover, Shāng administration was clearly conducted in a heavy ritual and display framework. In other words, Shāng administration could not have been carried out without divination. This is due to the fact that Shāng divinations involved all aspects of the royal family, such as sacrifices to ancestors, agriculture, military campaigns, sickness, hunting, child bearing and childbirth, weather, excursions, distress or trouble and the outlook for the night and the next ten-day week (*xún* 旬). It seems likely that the Shāng king carried out divination for almost everything. On the surface, it seems that the Shāng king inquiring about the opinions of his ancestors, but in fact the purpose is more likely to legitimize his kingship and administration by questioning his ancestors. In other words, the divination indicates that the kingship and administrative measures of the Shāng kings have obtained the ancestors' approval and followed their guidance. The paired inscriptions on the front of H 6482 discussed in Chapter 1 are a good case in

[1] For details see discussion in **3.5**.
[2] Keightley 2001.
[3] Haicheng Wang 2015: 146.

point. From all appearances, the two inscriptions are asking if the king should ally himself with the state of *Wàngchén* 望乘 to attack the state of *Xiàwēi* 下危, but it seems that the king is inclined to attack, so he inquires in two different forms (affirmative and negative) with the same intention:

> (affirmative) [If] the king allies himself with *Wàngchéng* 望乘 to attack *Xiàwēi* 下危 this spring; (will we) receive blessings?
> (negative) [If] the king does not ally himself with *Wàngchéng* 望乘 to attack *Xiàwēi* 下危 this spring; (will we) not receive blessings?

The king intends to ally himself with *Wàngchén* 望乘 to attack *Xiàwēi* 下危. The above way of questioning obviously increases the probability of achieving his purpose, and the divination also legitimizes his military actions.

From Wang's perspective, writing was not essential to communication with the spirits, because the vast majority of bones cracked for divination found at Ānyáng 安陽 are uninscribed, and the bones with inscriptions were inscribed after communication was finished.[1] However, a better explanation for this seems to be that the king used divination to achieve his own purpose, that is, to legitimize his administrative conduct. If the result of the divination cannot achieve his purpose, then there is obviously no need to record it. It should be very common for divination results to be unsatisfactory, so the vast majority of bones cracked for divination is not inscribed. If the divination result meet the king's expectations, it must be written on the oracle-bone, which is the proof of the legitimacy of his administrative conduct. If these inscriptions are only used for administrative purposes, like book-keeping, there is no need to inscribe them on oracle-bones. As mentioned above, it is very likely that the inscriptions on oracle-bones were first written on bamboo strips, and then inscribed on oracle-bones. Compared with oracle-bones, bamboo strips as a writing material are obviously easier to obtain and inscribe.

Moreover, the earliest Chinese texts, oracle-bone and bronze inscriptions, are small in size, visible only at close range. These texts were stored in the ritual center. The audience for this display must have been very small, consisting of the elite around the royal family and the diviners. Moreover, in the Shāng and Zhōu periods, inscriptions on ceremonial bronze inscriptions, were placed on the interior surfaces of vessels, such as the Xiǎochén Yú *zūn* 小臣艅尊 (WJC 11785/ JC 5990; **Fig. 5.3.1-4**) and the Lì *guǐ* 利簋 (WJC 5111/ JC 4131; **Fig. 5.3.1-7**),[2] which also indicates the intimate and sacred feature of early texts.

[1] Haicheng Wang 2015: 144.
[2] For details see discussion in Chapter 5.

This ritual and display content and purpose is in evidence from the very beginning. The periodization of oracle-bone inscriptions began in the early 20th century. Wáng Guówéi 王國維 (1923) was the first to study the periodization of oracle-bone inscriptions, based on the titles that appeared in inscriptions.[1] Later scholars, such as Dǒng Zuòbīn 董作賓 (1932),[2] Chén Mèngjiā 陳夢家 (1956),[3] Lǐ Xuéqín 李學勤 (1981, 1992, 1996),[4] Péng Yùshāng 彭裕商 (1994, 1996)[5] and Huáng Tiānshù 黃天樹 (2007),[6] continued to improve the periodization.[7] Now usually oracle-bone inscriptions that are classified according to the graphic form of the oracle-bone graphs are called *lèi* 類 'class; category', while inscriptions classified according to the diviners are called *zǔ* 組 'group'. Most oracle-bone scholars now agree that inscriptions of the Shī 師 group are the earliest inscriptions, including inscriptions ranging from the early Wǔ Dīng 武丁 period to the late Wǔ Dīng 武丁 period.

Inscriptions of the Shī 師 group can be further divided into three categories: *féi bǐ* 肥筆, *xiǎo zì* 小字 and *yòu* 㞢, of which the *féi bǐ* 肥筆 category is the earliest.[8] Different opinions on the quantity of inscriptions of the Shī 師 group have been voiced by scholars such as Huáng Tiānshù 黃天樹 (ca. 800),[9] Zhāng Shìchāo 張世超 (ca. 900),[10] Jiǎng Yùbīn 蔣玉斌 (ca. 2000)[11] and Yáng Yùyàn 楊鬱彥 (ca. 1800)[12] (counting the number of oracle-bones rather than of inscriptions on them). Based on the views of these scholars and the CHANT Database, the *féi bǐ* 肥筆 category should have about 400 inscriptions. The theme most involved in these inscriptions is the king's sacrifices to the ancestors. For example,

[1] Wáng Guówéi 王國維 1959: 409-437. For discussions see also Gāo Míng 高明 1996: 256; Wáng Yǔxìn 王宇信 and Yáng Shēngnán 楊昇南 1999: 124-193; Huáng Dékuān 黃德寬 2019: 133; Wáng Yǔxìn 王宇信 and Jù Lónghuì 具隆會 2019: 283-493.

[2] Dǒng Zuòbīn 董作賓 1996.

[3] Chén Mèngjiā 陳夢家 1956: 197-202.

[4] Lǐ Xuéqín 李學勤 1981, 1992: 26-30; Lǐ Xuéqín 李學勤 and Péng Yùshāng 彭裕商 1996.

[5] Péng Yùshāng 彭裕商 1994; Lǐ Xuéqín 李學勤 and Péng Yùshāng 彭裕商 1996.

[6] Huáng Tiānshù 黃天樹 2007.

[7] For details see discussions in Gāo Míng 高明 1996: 257-267; Féng Shí 馮時 2016: 256-287; Huáng Dékuān 黃德寬 2019: 132-139.

[8] Some scholars disagree with this point of view, for details see Liú Kèfǔ 劉克甫 2001; Liú Yīmàn 劉一曼 2020: 9.

[9] Huáng Tiānshù 黃天樹 2007.

[10] Zhāng Shìchāo 張世超 2002: 316.

[11] Jiǎng Yùbīn 蔣玉斌 2003: 1.

[12] Yáng Yùyàn 楊鬱彥 2005.

09. 癸卯卜，王：屮示癸一牛。(H 19812 back, Early Period I)

Guǐmǎo bǔ, wáng: Yòu Shì Guǐ yī niú?

Crack-making on the day *Guǐmǎo* 癸卯 (the 40th in the 60-day *gānzhī* 干支 cycle), the king [divined]: Should [the king] offer *yòu* 屮 sacrifices to the ancestor Shì Guǐ 示癸 with one head of cattle?

10. 丁未卜，王：唯祼父乙。(H 19929, Early Period I)

Dīngwèi bǔ, wáng: wéi guàn Fù Yǐ?

Crack-making on the day *Dīngwèi* 丁未 (the 44th in the 60-day *gānzhī* 干支 cycle), the king [divined]: Should [the king] offer *guàn* 祼 sacrifices to the ancestor Fù Yǐ 父乙?

Clearly, divination and royal ancestors are of great importance in Shāng kingship and administration, and writing figured prominently in the rituals to the ancestors. Shāng kings inquired the opinions of their ancestors through divination to legitimize the kingship and administration. In other words, Shāng administration cannot be carried out without divination. Therefore, the invention of writing in China should be attributed to the combination of divination and administration.

2.5.4 Mesoamerica

With regard to the invention of writing in Mesoamerica, most scholars are in favor of a ritual motivation,[1] since the earliest writing in Mesoamerica that is, the Zapotec and Epi-Olmec scripts and the first Maya writing, consists of considerable religious components. However, some scholars prefer an administrative purpose than a ritual purpose.[2] For example, Law argues that the principal motivation behind the development of Maya writing is the emerging administrative complexity of large city-states, since writing appears to burst at the same time as large urban centers with large-scale monumental architecture and the institution of kingship.[3] From his perspective, "it was the emerging control offered by a powerful social and political structure, its program of 'legibility,' that provided the kind of structured standardization that made writing possible".[4]

[1] Houston 2004: 302-303.
[2] Marcus 1992; Palka 2010; Haicheng Wang 2014; Law 2015; Law et al. 2015.
[3] Law 2015; Law et al. 2015.
[4] Law 2015: 178.

As we all known, there are no administrative themes in Mesoamerican texts. In other words, there are no records of accounting, monitoring of production or tribute, and other related matters in Mesoamerican texts. Proponents of an administrative purpose argue that the lack of administrative records in Mesoamerican texts due more to problems of preservation than actual ancient practices. They take Maya codices as an example. There is ample evidence that bark paper books were frequently used for writing and notations in ancient Maya, at least during the Classic period. And due to the humid tropical climate, all these bark paper books have long since decayed and disappeared.[1]

The possibility that these bark paper books recorded administrative information cannot be ruled out. However, judging from the content of the surviving codices (that is, the *Codex Dresden*, *Codex Madrid*, *Codex Paris*, and *Códice Maya de México*), this possibility may not be great. As discussed in Chapter 4, these Postclassic codices record (1) ritual and divinatory almanacs used to schedule rituals as part of the 52-year calendar that guided civic and religious life; and (2) astronomical tables which document important astronomical events. It cannot be denied that the content of these codices might have changed over time. It is possible that they were first used to record administrative information in the Preclassic and Classic periods, but the theme changed to ritual information in the Postclass period. However, it is obviously very far-fetched to assert that these codices must have been used for administrative purposes in this case.

Another evidence proposed by proponents of an administrative purpose is painted scenes on poly ceramics of the Classic period,[2] some of which depict of a royal figure receiving bundles of tribute, and these bundles are labeled with quantities. For example, on ceramic vessel K5453 (or MS0071; **Fig. 2.5-3**), dating to AD 600-700, two messengers or emissaries kneeled in front of a lord on his throne. Next to the lord is a bundle of folded cloth or plain square mantles and a bunch of feathers (quetzal plumes). At the foot of the throne is a bag of perhaps cacao beans marked with the quantity of *ux pik* "3 pik". A pik is a unit of 8,000, and this quantity is apparently 24,000.[3] Although these depict the tribute scenes with the quantity of tribute items, it cannot be treated as evidence for administrative purpose of Maya texts. Firstly, these scenes account for only a small part of the total Maya corpus and cannot be regarded as the main purpose, let alone the principal motivation behind the development of Maya writing.

[1] Law 2015: 176; Law et al. 2015: 216.
[2] Law 2015: 177; Law et al. 2015: 214.
[3] For more details on K5453 see discussion in Tokovinine and Beliaev 2013: 175-177; Law 2015: 177.

Fig. 2.5-3 Polychrome ceramic vessel K5453[1]

Moreover, as discussed in Chapter 4, the content of the texts on the ceramic vessels are descriptions of different types of ceramic vessels and their uses, as well as the names and titles of their owners and sometimes the names of the scribes. Based on the iconographic evidence and the titles of the patrons or owners of the vessels, these vessels were used by the high elite during festive events, so they most likely serve for ceremonial or ritual purpose. Similar examples can be found in oracle-bone texts. The quantity of sacrifices used in ritual ceremonies are record in the texts, for example, H 300, a charge for inquiry of sacrifice to the ancestors, including the type and quantity of the sacrifice: one hundred Qiāng 羌 (captives from the hostile state Qiāng 羌) and one hundred *láo* 牢 (a group of animals).[2] In some other cases (the so-called *jìshì kècí* 記事刻辭), the quantity of tribute of oracle-bones are also recorded.[3] For instance:

11. 雀入二百五十。(H 722 back, Period I)

    Què rù èrbǎi wǔshí.

    Què 雀 paid a tribute of two hundred and fifty pieces [of turtle shells].

12. 婦好入五十。(H 10133 back, Period I)

    Fù Hǎo rù wǔshí.

    Lady Hǎo 好 paid a tribute of fifty pieces [of turtle shells].

[1] http://research.mayavase.com/kerrmaya_hires.php?vase=5453
[2] For details see discussion in **5.2**.
[3] For discussions of *jìshì kècí* 記事刻辭 see Hú Hòuxuān 胡厚宣 1944, 1947; Gāo Míng 高明 1996: 239-242; Féng Shí 馮時 2016: 256; Huáng Dékuān 黃德寬 2019: 132.

As discussed in the last section, the Shang king legitimize his kingship and administrative conducts through divinations, a single administrative purpose is not a sufficient and convincing explanation for the invention of writing in early China, since the heavy ritual and divinatory context should not be ignored. Likewise, the heavy ritual context in Mesoamerica also should not be ignored.

In addition, the depictions of tribute scenes are found in materials of the Classic period which cannot be treated as the initial purpose or function of Maya writing. Most Preclassic Maya texts are found on wall paintings and small portable objects made of precious stone. These portable objects have been found with no archaeological context, while wall paintings appear to have been found mainly in temple buildings or pyramids, often as part of larger Maya ritual architectural complexes. Wall paintings of Late Preclassic period (ca. 400 BC-AD 200) found at Maya site of San Bartolo, Guatemala is a good case in point. These wall paintings come from a single architectural complex known as Las Pinturas, comprising a pyramid with seven construction phases and several auxiliary structures. The third earliest phase of Las Pinturas is called Sub-V (ca. 300-200 BC). There are 249 fragments of lime plaster with evidence for painted or incised design are found in Sub-V complex. These mural paintings depict imagery associated with religious beliefs, such as the maize god, combined with texts.[1] Therefore, the earliest Maya texts serve more likely for ritual purpose.

Furthermore, although Preclassic glyphs are very different from that of the Classic periods, the glyph referring to kings and rulers, *ajaw*, is recognizable in Preclassic texts, such as Las Pinturas Sub-I paintings and the masonry block (#6366; **Fig. 4.4-2**) of Las Pinturas Sub-V at San Bartolo,[2] and Dumbarton Oaks quartzite pectoral (**Fig. 4.4-6**).[3] Proponents of an administrative purpose treated it as a recurrent theme of kingship in Preclassic texts. This indicates that, from their perspective, these texts are related to "government and social complexity".[4] However, this viewpoint is untenable. This is due to the fact that the sign referring to king (*wáng* 王), also frequently appear in oracle-bone inscriptions, such as, H 456, H 787, H 1748, H 6442, H 6626, H 9650, H 23786, H 28440, H 33036, B 1152 and B 11299,[5] and bronze inscriptions, such as, the Zuòcè bān *yǎn* 作冊般甗 (WJC 3347/ JC 944; **Fig. 5.3.1-5**) and the Yú *jué* 盂爵 (WJC 8585/ JC 9104; **Fig. 5.3.1-8**),[6] but this does not interfere with the ritual function, as discussed in **2.5.3** and Chapter 5, of early writing in China.

[1] Stuart et al. 2022.
[2] For details see discussion in Chapter 4; see also Saturno et al. 2006; Stuart et al. 2022.
[3] For details see discussion in Chapter 4.
[4] Law 2015: 176; Law et al. 2015: 217.
[5] For discussions of these oracle-bone inscriptions see **5.2** and **5.3**.
[6] For discussions of these bronze inscriptions see **5.3**.

On the top of that, all these Preclassic texts from portable objects as well as mural painting are small in scale, together with the placement and setting of texts indicating intimate rather than public access. To be more specific, most of the earliest Maya signs are only a centimeter or two in height,[1] visible only at close range. Moreover, the placement of texts on the portable objects suggests that they are not for display. The Dumbarton Oaks quartzite pectoral (ca. 300-100 BC; **Fig. 4.4-6**) is a good case in point. This pectoral is inscribed with a text of 24 signs in four vertical columns and a sitting figure. The text is on the back, so it would have been hidden when the pectoral was actually worn. In the Classic period, the Late Classic in particular, there is an increase in increase in texts that seem to be for public display, since these texts are in large scale and positioned in highly visible areas within a site. Since only a small amount people have access to the texts at the earliest stage, these texts serve more for sacred or religious purpose rather than administrative purpose. By the time of the Classic period, these texts reach out broadly to wider audiences, functions, such as administration or display, may added.

As discussed in **2.5.3** and Chapter 5, similar situations also occur in early texts in China. The earliest texts in China, that is oracle-bone and bronze inscriptions are in small size, visible only at close range. Oracle-bone materials are stored in the ritual center, the audience for this display must have been very small, consisting of the elite around the royalty and the diviners. Moreover, in Shāng and Zhōu periods, bronze inscriptions were placed on interior surfaces of vessels, such as the Xiǎochén Yú *zūn* 小臣艅尊 (WJC 11785, JC 5990; **Fig. 5.3.1-4**) and the Lì *guǐ* 利簋 (WJC 5111, JC 4131; **Fig. 5.3.1-7**).[2] During the late Spring and Autumn period and the Warring States period, inscriptions were more often displayed on the outer surface of bronze vessels, such as the Dù *hǔfú* 杜虎符 (WJC19177, JC 12109; **Fig. 5.3.1-15**),[3] reaching out to wider audiences. In addition, during the Warring States period, writing was also used for practical documents, such as judicial documents and records of funerary objects. Therefore, writing was heavily used in the context of divination and religious ceremonies in Shāng and Zhōu periods. From the Spring and Autumn period on, the purpose of writing became decidedly more secular.

[1] Houston 2011: 25; Law 2015: 175.
[2] For details see discussion in Chapter 5.
[3] For details see discussion in Chapter 5.

3. The nature of materials preceding and leading down to the oracle-bone inscriptions

With regard to materials preceding the oracle-bone inscriptions, scholars' discussions on the origin of Chinese writing have primarily focused on the graphs found in the Jiǎhú 賈湖, the Shuāngdūn 雙墩 and the Lóngqiúzhuāng 龙虯莊 Culture of the Huái River basin; the Yǎngsháo 仰韶, the Táosì 陶寺, the Wángwānsānqī 王灣三期,[1] the Lóngshān 龍山 and the Dàwènkǒu 大汶口 Culture of the Yellow River basin; the Liángzhǔ 良渚 Culture of the Yangtze River basin; and the Xià and Early Shāng Culture (**Table 3.1-1 & 2**).

3.1 The Huái River basin

3.1.1 The Jiǎhú 賈湖 Culture

The Jiǎhú 賈湖 Culture was named after the Jiǎhú 賈湖 site found in Wǔyáng 舞陽 of Hénán province, the upstream of the Huái River basin, dating to ca. 7000-5500 BC.[2] The excavation of Jiǎhú 賈湖 conducted in 1983-1987 unearthed 16 graphs engraved on turtle shells, bone, stone and clay vessels. Whether the graphs on M344:18, M335:15 and M387:4 (**Fig. 3.1-1**) are writing is still under debate.

With regard to the nature of Jiǎhú 賈湖 graphs, there are two main viewpoints: (1) the *hànzì lànshāng shuō* "漢字濫觴說" (the origin of Chinese language), focusing on the relationship between the Jiǎhú 賈湖 graphs and later Chinese writing, Shāng oracle-bone inscriptions in particular (see below), and (2) the *zhǔn Yíwén shuō* "准彝文說" (Quasi-Yi writing), claiming that the Jiǎhú 賈湖 graphs are the Ancient Yí 彝[3] writing (*Gǔyíwén* 古彝文) (see below).[4]

[1] The Wángwānsānqī 王灣三期 periously called Hénán Lóngshān 河南龍山, that is, the Lóngshān 龍山 Culture of Hénán 河南 province (中國社會科學院考古研究所 Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 2010: 529-530).

[2] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 2015: 558.

[3] Yí 彝 is an ethnic group distributed in Yúnnán 雲南, Sìchuān 四川, Guìzhōu 貴州, Guǎngxī 廣西 provinces of China, and *Gǔyíwén* 古彝文 is a monosyllabic script (Féng Shí 馮時 1994: 31, Zhōngguó dàbǎikē quánshū zǒngbiānjí wěiyuánhuì 中國大百科全書總編輯委員會 1998: 498-500).

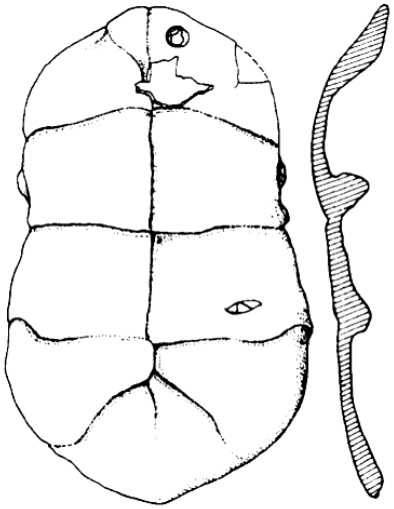
[4] Liú Zhìyī 劉志一 2003: 10.

Geographical Distribution		Archaeological Periodization	Date	Main Sites
Huái River Basin	Upstream	Jiǎhú Culture 賈湖文化	ca. 7000 BC - 5800 BC	HénánWǔyáng Jiǎhú 河南舞阳賈湖
	Midstream	Shuāngdūn Culture 雙墩文化	ca. 5300 BC - 4700 BC	Ānhuī Bèngbù Shuāngdūn 安徽蚌埠雙墩
	Downstream	Nándàng Culture 南蕩文化	ca. 2000 BC	Jiāngsū Gāoyóu Lóngqiúzhuāng 江蘇高郵龙虬莊
Yellow River Basin	Midstream	Yǎngsháo Culture 仰韶文化	ca. 5000 BC - 3000 BC	Shǎnxī Xī'ān Bànpō 陝西西安半坡
		Táosì Culture 陶寺文化	ca. 2600 BC - 2000 BC	Shānxī Xiāngfénxiàn Táosì 山西襄汾縣陶寺
		Wángwān sānqī Culture 王灣三期文化	ca. 2600 BC - 1900 BC	Hénán Dēngfēng Wángchénggǎng 河南登封王城崗
	Downstream	Dàwènkǒu Culture (late) 大汶口文化	ca. 3100 BC - 2600 BC	Shāndōng Jǔxiàn Língyánghé 山東莒縣陵陽河, Dàzhūjiācūn 大朱家村, Méngchéng Yùchísì 蒙城尉遲寺
		Lóngshān Culture 龍山文化	ca. 2600 BC - 2000 BC	Shāndōng Zōupíngxiàn Dīnggōng 山東鄒平縣丁公
Yangtze River Basin	Downstream	Liángzhǔ Culture 良渚文化	ca. 3300 BC - 2000 BC	Jiāngsū Wúxiàn Chénghú 江蘇吳縣澄湖, Zhèjiāng Hángzhōu Yúháng 浙江杭州余杭, Liángzhǔ 良渚

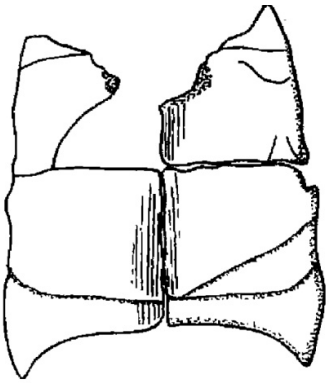
Table 3.1-1 Neolithic sites of Huái, Yellow and Yangtze River basin

Periodization	Date	Main Sites
Xià	ca. 2070-1600 BC	Hénán Luòyáng Yǎnshī Èrlǐtóu 河南洛陽偃師二裏頭
Early Shāng	ca. 1600-1400 BC	Hénán Zhèngzhōu Èrlǐgǎng 河南鄭州二裏崗
	ca. 1400-1250 BC	Hénán Zhèngzhōu Xiǎoshuāngqiáo 河南鄭州小雙橋

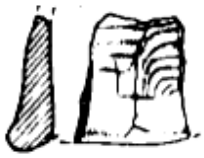
Table 3.1-2 Archaeological sites of the Xià and Early Shāng Cultures



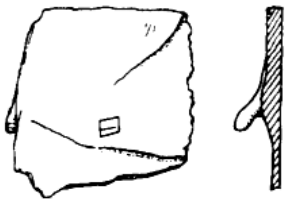
plastron M344:18[1]



plastron M387:4[2]



carapace M387:4[3]



plastron M335:15[4]

Fig. 3.1-1 Engraved turtle shells of Jiǎhú 賈湖

[1] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 1999: 446.
[2] Cài Yùnzhāng 蔡運章 et al. 2003: 18.
[3] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 1999: 446; see also Zhāng Jūzhōng 張居中 2001: 33.
[4] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 1999: 446.

(1) The *hànzì lànshāng shuō* 漢字濫觴說

Most scholars working on this subject support the *hànzì lànshāng shuō* 漢字濫觴說. Scholars, such as Hǎo Běnxìng 郝本性 and Zhāng Jūzhōng 張居中, argue that the Jiǎhú 賈湖 graphs are "proto-writing" (*yuánshǐ wénzì* 原始文字),[1] but the definition of "writing" and "proto-writing" are not given in their works. From their perspective, these graphs are "consciously" engraved and have certain meanings. These graphs may have, as these scholars alleged, similar meanings to the Shāng oracle-bone signs, because of their resemblance to the latter. But unlike writing, these graphs are taken to have no communicational function, so they are not "writing" but "proto-writing". For example,  (M344:18) is the depiction of an eye, and  (M335:15) can be interpreted as *rì* 日 or *hù* 戶.

Scholars, such as Ráo Zōngyí 饒宗頤, Cài Yùnzhāng 蔡運章 et al. and Féng Píng 馮憑 et al., argue that the Jiǎhú 賈湖 graphs are "writing" or at least "precursors of writing" (*qiánwénzì* 前文字/ *wénzìqián shūxiě xìtǒng* 文字前書寫系統), but the definition of "writing" and "precursors of writing" are not given in their works. They also interpret (M344:18) as a depiction of an eye, and (M335:15) as *rì* 日 or *hù* 戶.[2] Some scholars, such as Táng Jiàn 唐建 and Féng Píng 馮憑 et al., even argue that the Jiǎhú 賈湖 graphs have a direct relationship to Shāng oracle-bone signs, that is, the Shāng oracle-bone signs come from the Jiǎhú 賈湖 graphs.[3] Moreover, many turtle shells are positioned in sets of eight in the graves, which can be easily connected to Bagua (*bāguà* 八卦).[4] Therefore, apart from the graphs on turtle shells, Cài Yùnzhāng 蔡運章 et al. make an interpretation of the graphs on bone, stone and pottery vessels, for example, the graph on H 141:1 (**Fig. 3.1-2a**) is interpreted as *yǐ* 乙; the graph on M253:4 (**Fig. 3.1-2b**) as *chǐ* 齒; the graph on T108(3B):12 (**Fig. 3.1-2c**) as *shí* 十.[5] Then they come to the conclusion that the Jiǎhú 賈湖 graphs are "writing" and represent trigrams of Bagua.

[1] Hénánshěng wénwù yánjiūsuǒ 河南省文物研究所 1989; Hǎo Běnxìng 郝本性 et al. 1995; Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 1999: 985-987; Zhāng Jūzhōng 張居中 2001, 2003; Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 et al. 2015: 529-530.

[2] Ráo Zōngyí 饒宗頤 2000: 24-25, 2009: 22-32, 2015: 24-25; Cài Yùnzhāng 蔡運章 et al. 2003; Féng Píng 馮憑 et al. 2009.

[3] Táng Jiàn 唐建 1992; Féng Píng 馮憑 et al. 2009.

[4] For details see footnote in **2.3.1**.

[5] Ráo Zōngyí 饒宗頤 (2009: 25-27) makes a similar interpretation of T108(3B):12 and H141:1.

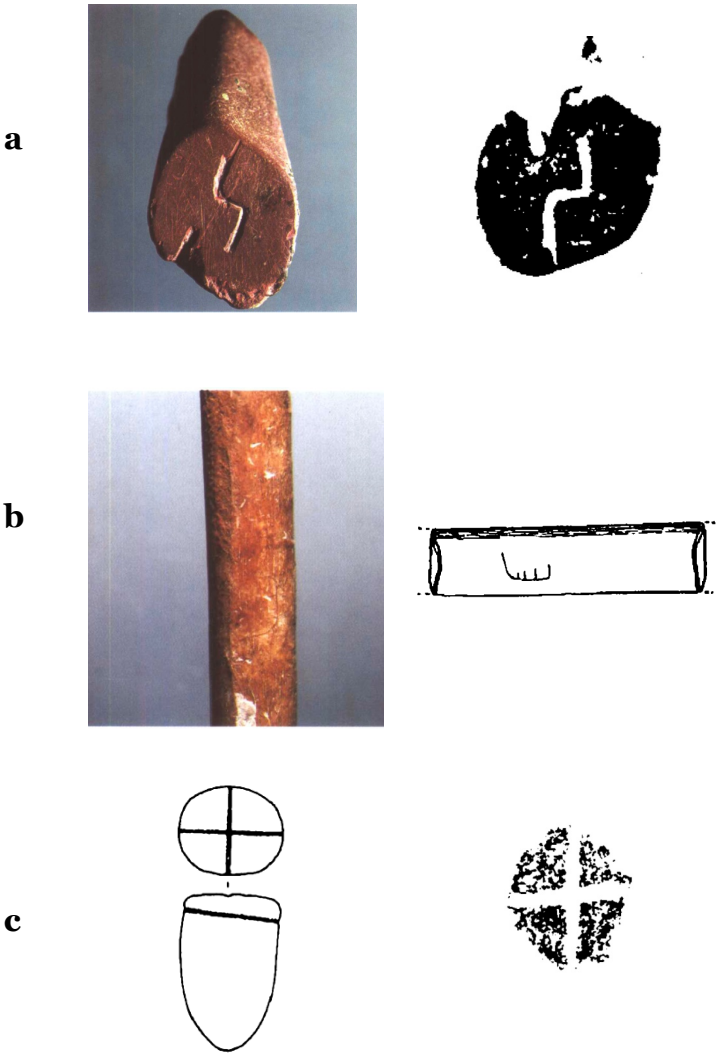


Fig. 3.1-2
The 賈湖 Jiǎhú graphs on bone, stone and pottery vessels
a. Stone vessel H 141:1(left: photo; right: rubbing)[1]
b. Bone flute M253:4, 賈湖 Jiǎhú (left: photo; [2] right: drawing[3])
c. T108(3B):12 (left: drawing; right: rubbing)[4]

Lǐ Xuéqín 李學勤 et al. argue that the Jiǎhú 賈湖 graphs are connected to ritual practice, and presage a long period of graph use which led eventually to a writing system, but the definition of "writing" and "writing system" are not given. In their opinion, some Jiǎhú 賈湖 graphs (such as M344:18, M 387:4 and M355:15) resemble Shāng oracle-bone signs.[5] Moreover, given the careful positioning of the turtle shells, several in sets of eight, and the groups of pebbles associated with shell pairs, Lǐ Xuéqín 李學勤 et al. claim that these incised turtle shells and pebbles are part of an early form of divination, which may draw its power from "writing" and create a path to authority.[6] Furthermore, as flutes are found in the burials, music is also supposed to have been an important adjunct to the rituals. Lǐ Xuéqín 李學勤 et al. come to the

[1] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 1999: color photo 48; pp. 207.
[2] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 1999: color photo 48; pp. 207.
[3] Cài Yùnzhāng 蔡運章 et al. 2003: 19.
[4] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 1999: 340, 207.
[5] Li et al. 2003: 37.
[6] Li et al. 2003: 41.

conclusion that "this early use of incised signs on tortoise shells in Neolithic China may be showing us the beginning of a long intellectual journey which would lead eventually to writing of a more recognizable kind, and with its religious beliefs incorporating ancestral communication and ritual divination".[1]

(2) The *zhǔn yíwén shuō* 准彝文說

The *zhǔn yíwén shuō* 准彝文說 is less popular. Zhū Jūyuán 朱琚元 points out the similarity between some Jiǎhú 賈湖 graphs and Ancient Yí 彝 signs, and observes that the bone and stone vessels of Jiǎhú 賈湖 and Yí 彝 are quite similar, which indicates the relationship between Jiǎhú 賈湖 and Yí 彝 to some extent.[2] On this basis, Liú Zhìyī 劉志一 makes a comparison between Jiǎhú 賈湖 graphs and Ancient Yí 彝 signs, such as the Jiǎhú 賈湖 graph  (M344:18) with the Ancient Yí 彝 sign  *bu²¹* 'mustiness; jar, pot'.[3] From his perspective, the vast majority (95%) of Jiǎhú 賈湖 graphs and Ancient Yí 彝 signs are exactly, or almost, the same and then comes to the conclusion that the Jiǎhú 賈湖 graphs are Ancient Yí 彝 signs.[4]

Since their excavation, the Jiǎhú 賈湖 graphs, the graphs on turtle shells in particular, have drawn scholars' considerable attention. This is due to the fact that these graphs have a great similarity to Shāng oracle-bone inscriptions in their, such as, appearance, scribal method, scribal media and function. That is to say, some Jiǎhú 賈湖 graphs resemble Shāng oracle-bone signs, and like Shāng oracle-bone signs, Jiǎhú 賈湖 graphs are engraved on turtle shells and used for divination. More importantly, if Jiǎhú 賈湖 graphs were writing, the following important questions concerning the origin of Chinese writing as well as writing in general would be solved or better answered:

(1) When was Chinese writing first invented?
(2) Is Chinese writing an independent invention or a result of stimulus diffusion?
(3) Is Chinese writing the product of a lengthy period of development or a sudden invention?

To be more specific, if Jiǎhú 賈湖 graphs were writing, the invention of Chinese writing could date to around the 7th millennium BC, and Chinese writing would become the earliest writing in the world by far. Although the theory of "stimulus diffusion" of the origin of Chinese writing, which first

[1] Lǐ Xuéqín 李學勤 et al. 2003: 42.
[2] Yúnnánshěng shèhuì kēxuéyuàn chǔxióng yízú wénhuà yánjiūsuǒ 雲南省社會科学院楚雄彝族文化研究所 1993, quoted from Liú Zhìyī 劉志一 2003: 10; Zhū Jūyuán 朱琚元 2003.
[3] Liú Zhìyī 劉志一 2003: 11.
[4] Liú Zhìyī 劉志一 2003: 11-13.

appeared around the 13th century, was no longer popular from the middle of the 20th century onwards,[1] it is still worth debating. In other words, the possibility cannot be ruled out that Chinese get the idea of writing from other areas.[2] Should Jiǎhú 賈湖 graphs be writing, the earliest Chinese writing would be about two to three thousand years older than the earliest known writing in Mesopotamia and Egypt, which underlies "stimulus diffusion". At the same time, the "Jiǎhú 賈湖 writing" could be good supporting evidence for the polygenesis of writing. Moreover, unlike western scholars, such as Boltz (1994, 2000), who treats writing as a sudden invention, most Chinese scholars claim that Chinese writing is the product of a lengthy period of development. If the Jiǎhú 賈湖 graphs were writing, the time span between the earliest Chinese writing and Shāng oracle-bone inscriptions would be about 5000 years. In other words, it took the "Jiǎhú 賈湖 writing" five millennia to develop into a full-writing system.

However, the evidence and discussions presented by the above scholars are not sufficient to prove the writing nature of the Jiǎhú 賈湖 graphs or their direct relationship to Shāng oracle-bone inscriptions. Almost all the interpretations are based on the resemblance between Jiǎhú 賈湖 graphs and Shāng oracle-bone signs. Some Jiǎhú 賈湖 graphs resemble Shāng oracle-bone signs to some extent (for examples see **Table 3.1-3**).

Jiǎhú 賈湖 graphs	Shāng oracle-bone signs
 (M344:18)	**C.m(r)[u]k*  'eye' (*mù* 目)
 (M335:15)	**C.nik*  'sun; day' (*rì* 日)
	**m-qˤaʔ*  'door' (*hù* 戶)
 (M253:4)	**t-[k]ʰə(ŋ)ʔ*  'teeth' (*chǐ* 齒)

Table 3.1-3 Resemblance between Jiǎhú 賈湖 graphs and oracle-bone signs

Although the resemblance plays an important role in the decipherment and interpretation of early writings, this method is not reliable, since objects like

[1] Táng Jiàn 唐建 1992; Coulmas 2003.
[2] For more details see discussions in **5.4**.

eyes, the sun or teeth are similar or the same to all people. Because of this, it is quite possible that people from completely different cultural backgrounds may depict some objects in the same way. The *zhǔn Yíwén shuō* 准彝文說 mentioned above is a good case in point. Like proponents of the *hànzì lànshāng shuō* 漢字濫觴說, these Yí 彝 specialists regard the Jiǎhú 賈湖 graphs as Ancient Yí 彝 signs on the basis of the resemblance between Jiǎhú 賈湖 graphs and Ancient Yí 彝 signs.

Furthermore, based on the pebbles positioned together with turtle shells at the site, the tradition of divination with turtle shells in the Huái River basin, as well as the function of Shāng oracle-bone inscriptions, scholars argue that the incised turtle shells of Jiǎhú 賈湖 may have some kind of function in divination, and that the scribes were diviners.[1] Likewise, on the basis of the archaeological environment, which includes the bone remains of pigs, deer and fish at the site (biological environment) and the developed technology of pottery-making (cultural environment), scholars argue that social organization and civilization were mature in the Jiǎhú 賈湖 Culture, preparing for the invention of writing, so the Jiǎhú 賈湖 graphs are not accidental scratches, but conscious engravings of certain objects.[2] Obviously, such speculation does not constitute evidence. In the absence of phonetic spellings and a linguistic context for these Jiǎhú 賈湖 graphs, it is impossible to discern what language they render, so all the so-called interpretations remain hypothetical. Therefore, the nature of the Jiǎhú 賈湖 graphs is still an open question and cannot be decided for sure at the present stage.

3.1.2 The Shuāngdūn 雙墩 Culture

The Shuāngdūn 雙墩 Culture (ca. 5300-4700 BC) was named after the Shuāngdūn 雙墩 site found in Bèngbù 蚌埠 of Ānhuī 安徽 Province, the midstream of the Huái River basin, dating to ca. 5350-5150BC.[3] The excavation of Shuāngdūn 雙墩 conducted in 1986-1992 unearthed more than 600 fragments of clay vessels with engraved graphs. According to the excavators, these graphs can be divided into three groups: (1) pictographic graphs, (2) geometric graphs, and (3) other graphs.[4] Most of the pictographic graphs are depictions of animals and plants, such as fish, pigs and leaves (**Fig. 3.1-3**). Geometric graphis depict, such as, triangles, rectangles and crosses (**Fig. 3.1-4**).

[1] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 1999: 988-989; Zhāng Jūzhōng 張居中 2001, 2003; Li et al. 2003; Féng Píng 馮憑 et al. 2009.
[2] Táng Jiàn 唐建 1992; Zhāng Jūzhōng 張居中 2001, 2003; Lǐ Xuéqín 李學勤 et al. 2003.
[3] Ānhuīshěng wénwù kǎogǔ yánjiūsuǒ 安徽省文物考古研究所 et al. 2008: 414.
[4] Ānhuīshěng wénwù kǎogǔ yánjiūsuǒ 安徽省文物考古研究所 et al. 2008: 183-184.

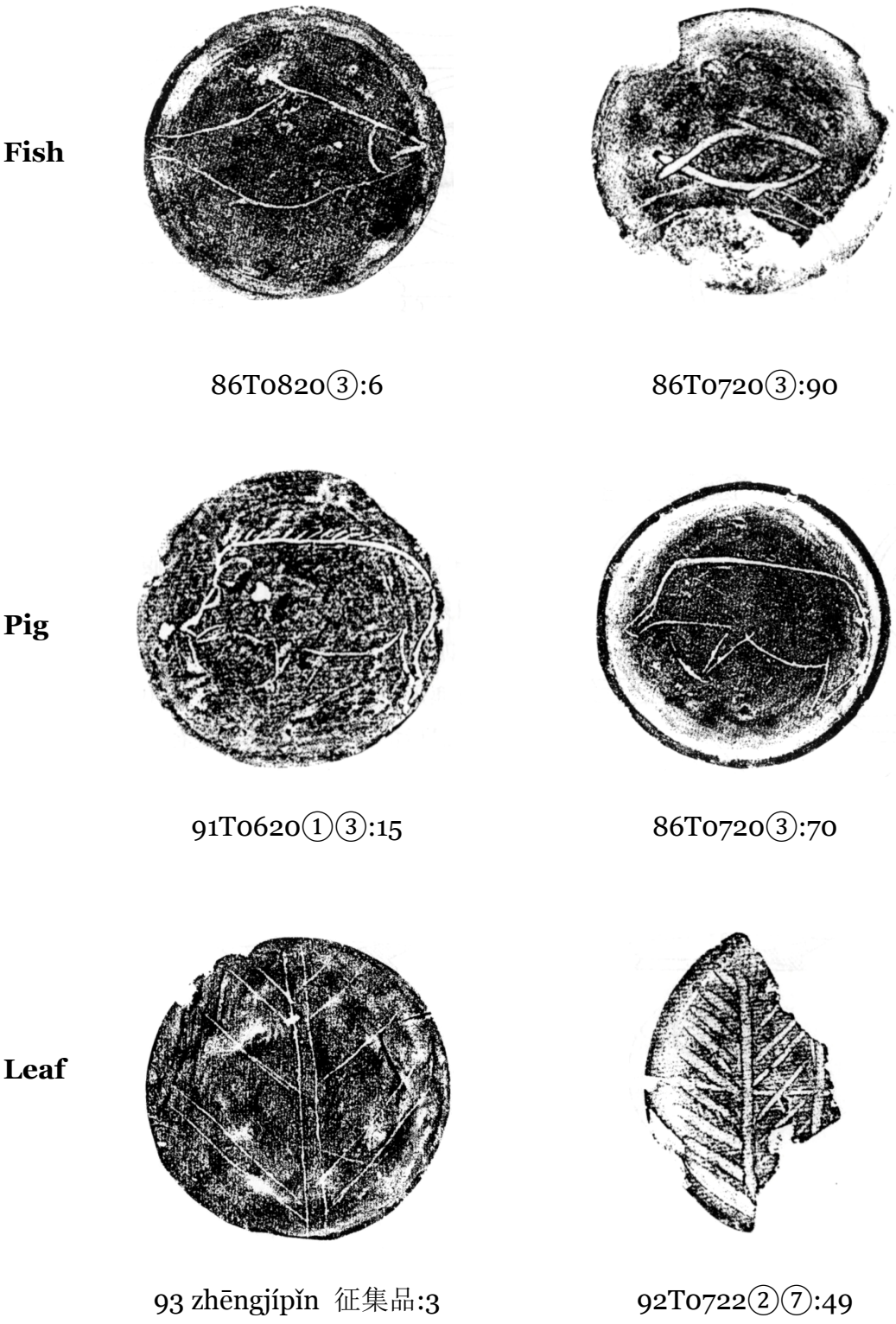
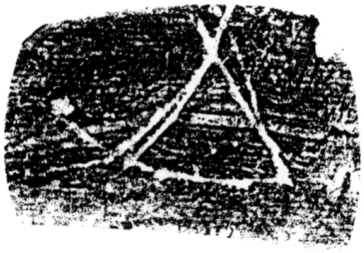


Fig. 3.1-3 Pictographic graphs depicting animals, Shuāngdūn 雙墩[1]

[1] Rubblings: Ānhuīshěng wénwù kǎogǔ yánjiūsuǒ 安徽省文物考古研究所 et al. 2008: 324 (fish); 195, 336 (pig); 341, 201 (leaf).

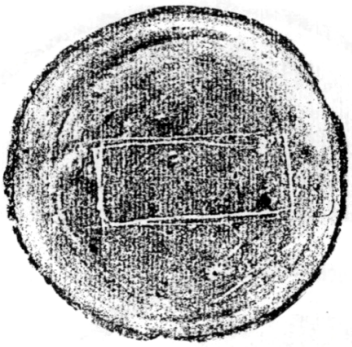
Triangle(s)



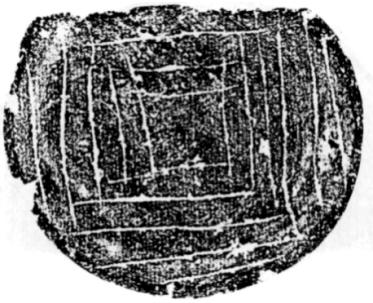
86T0720④:18

86T0720②:102

Rectangle(s)

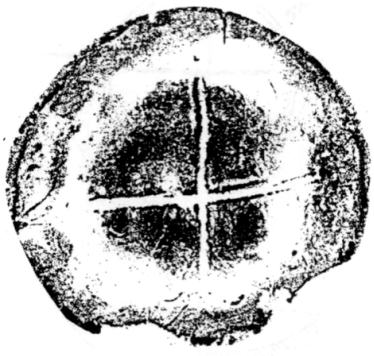


86T0820④:12



86T0820③:23

Cross



92T0722②⑨:51

86T0820③:54

Fig. 3.1-4 Geometric graphs, Shuāngdūn 雙墩[1]

[1] Rubbings: Ānhuīshěng wénwù kǎogǔ yánjiūsuǒ 安徽省文物考古研究所 et al. 2008: 345 (triangles); 349 (rectangles); 216, 358 (cross).

With regard to the nature of these graphs, some scholars argue that the Shuāngdūn 雙墩 graphs have a close relationship with early Chinese writing,[1] but some scholars reject this.[2] As one of the excavators, Xú Dàlì 徐大立 has done several studies on Shuāngdūn 雙墩 graphs.[3] With respect to their nature, he claims that these graphs are "primitive pictographic writing" (*yuánshǐ túxiàng wénzì* 原始圖像文字),[4] which, however, he does not supply a definition. In his viewpoint, it is uncertain whether these graphs represent phonetic elements, but they must depict objects and represent meaning.[5] Xú Dàlì 徐大立 argues that the following functions indicate that the Shuāngdūn 雙墩 graphs function as "proto-writing" (*yuánshǐ wénzì* 原始文字): (1) recording: record people's living and ritual activities; (2) education: remind people of knowledge; (3) broadcasting: the graphs are found in different sites of the Shuāngdūn 雙墩 Culture, which indicates the spread of the graphs; (4) ritual: the graphs are used in ritual activities. Moreover, the development of social structure and labor division in that period required "primitive writing" for communication.[6] However, as discussed in **1.2.1**, writing is the graphic rendition of language, and if the phonetic evidence cannot be found in the Shuāngdūn 雙墩 graphs, no matter what functions they have, they are not writing. Moreover, although Xú Dàlì 徐大立 regards the Shuāngdūn 雙墩 graphs as "primitive writing", these graphs are still called "engraved symbols" (*kèhuá fúhào* 刻劃符號) in his works. It can be seen that his understanding of the nature of these graphs is not clear.

The reading of the Shuāngdūn 雙墩 graphs by Xú Dàlì 徐大立 is mostly based on graphic forms as well as the similarity between the Shuāngdūn 雙墩 graphs and oracle-bone signs. However, without phonetic evidence and a linguistic context, the reading is not reliable, and the relationship with oracle-bone signs cannot be proven either. Moreover, Xú Dàlì 徐大立 believes that the compound graph (**Fig. 3.1-5**) consisting of a tree and a pig represents the warm-up activities before hunting.[7] However, this compound graph has less to do with writing than iconography, which codifies and represents information by means of graphic elements and has no fixed relationship with language.

[1] Xú Dàlì 徐大立, Zhāng Jūzhōng 張居中, Wáng Shùmíng 王樹明, Gě Yīnghuì 葛英會, Wáng Yùnzhì 王蘊智, Huáng Dékuān 黃德寬 and Niú Qīngbō 牛清波.
[2] Wáng Róng 王戎, Gǒng Yùshū 拱玉書.
[3] Xú Dàlì 徐大立 2002, 2003, 2006a, 2006b, 2007, 2008.
[4] Xú Dàlì 徐大立 2002: 280, 2003: 47, 2007: 79.
[5] Xú Dàlì 徐大立 2002: 283, 2003: 49.
[6] Xú Dàlì 徐大立 2008: 78.
[7] Xú Dàlì 徐大立 2006a: 68, 2008: 78-79.

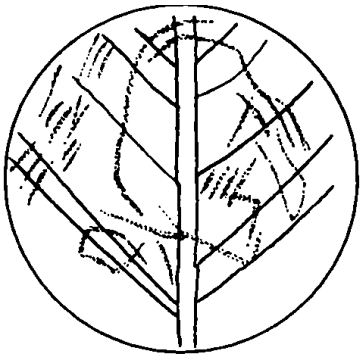


Fig. 3.1-5
Engraved graph of Shuāngdūn 雙墩 (93 zhēngjípǐn 征集品: 3)[1]

Some scholars, such as Gě Yīnghuì 葛英會, Wáng Yùnzhì 王蘊智, Huáng Dékuān 黃德寬 and Niú Qīngbō 牛清波, claim the Shuāngdūn 雙墩 graphs are advanced graphs that represent information, and may have some relationship with early Chinese writing.[2] Wáng Yùnzhì 王蘊智 argue that in the Shuāngdūn 雙墩 Culture, two or more single graphs, such as  and  [3] are combined, to represent information, which is rare in the case of other Neolithic graphs. From his perspective, these graphs are more advanced than Neolithic graphs found in the Yellow River basin and Yangtze River basin in the middle and late Neolithic period. So they should belong to a regional system of graphs representing information in the midstream region of the Huái River basin in the Neolithic period, and this system became prosperous in the Shuāngdūn 雙墩 Culture. In his viewpoint, the Shuāngdūn 雙墩 graphs can be regarded as a kind of regional "proto-writing" (*yuánshǐ wénzì* 原始文字), but a definition of "primitive writing" is not provided.[4] Wáng Yùnzhì 王蘊智's attention to the regional characteristics of the Neolithic graphs provides a basis for our research into the nature of these graphs and their potential relationship with Chinese writing. But defining the Shuāngdūn 雙墩 graphs as "primitive writing" is not advisable, since no evidence proves that the Shuāngdūn 雙墩 graphs represent language.

Some scholars have divergent interpretations. Wáng Róng 王戎 argues that the Shuāngdūn 雙墩 graphs are potters' marks.[5] Gǒng Yùshū 拱玉書 claims that the relationship between the pottery graphs and the origin of early Chinese writing cannot be proven. Pottery graphs are commonly found in

[1] Ānhuīshěng wénwù kǎogǔ yánjiūsuǒ 安徽省文物考古研究所 et al. 2008: 338.
[2] Gǒng Yùshū 拱玉書 et al. 2009: 122; Wáng Yùnzhì 王蘊智 2011: 68; Huáng Dékuān 黃德寬 2010: 5, 2012: 86; Niú Qīngbō 牛清波 2013: 508.
[3] Wáng Yùnzhì 王蘊智 2011: 67.
[4] Wáng Yùnzhì 王蘊智 2011: 68-69.
[5] Huáng Dékuān 黃德寬 2010: 6.

ancient civilizations. But the pottery graphs of these ancient civilizations are not directly related to later writing systems. The systems of pottery graphs do not develop into writing systems because pottery graphs are made by potters, and their functions are to, such as, identify the owners or users and to counting, which is limited information and cannot develop into writing.[1]

As mentioned in the above discussions, scholars' understandings of the nature of the Shuāngdūn 雙墩 graphs are mainly based on their graphic forms as well as the similarity between these graphs and later Chinese writing, which is obviously not reliable, because the relationship between the Shuāngdūn 雙墩 graphs and later Chinese writing cannot be proven on the basis of the current evidence. Like Wáng Róng 王戎 and Gǒng Yùshū 拱玉書, I prefer to regard the Shuāngdūn 雙墩 graphs as potters' marks. This is because most Shuāngdūn 雙墩 graphs are engraved inside the round foot of pottery vessels, which are hidden and cannot easily be seen. Many scholars argue that the Shuāngdūn 雙墩 graphs are not for decoration, but have special meanings or functions.[2] Some of them argue that the Shuāngdūn 雙墩 graphs are used for ritual purposes.[3] But Hé Nú 何駑 refutes them for the following reasons: (1) the engraved pottery of Shuāngdūn 雙墩 was casually discarded, which does not indicate any sacredness associated with ritual activities; (2) the Shuāngdūn 雙墩 site and surrounding environment show no characteristics of a religious center.[4] From my perspective, these graphs are potters' marks that are used for order, marking the producers or other infrequently used functions, so they are engraved on a hidden spot. Moreover, similar graphs are found at the Hóujiāzhài 侯家寨 site of the Shuāngdūn 雙墩 Culture.[5] The engraved pottery graphs of Hóujiāzhài 侯家寨 are all engraved inside the round foot of pottery vessels. It is very likely that engraving inside the round foot was a popular and regional way for potters to make marks in the Huai River basin during the Shuāngdūn 雙墩 Culture period.

3.1.3 The Nándàng 南蕩 Culture

The Nándàng 南蕩 Culture was named after the Nándàng 南蕩 site found in Xīnghuà 興化, Gāoyóu 高郵 of Jiāngsū 江蘇 province, the downstream of

[1] Huáng Dékuān 黃德寬 2010: 3; Gǒng Yùshū 拱玉書 2009.
[2] Xú Dàlì 徐大立 2006a: 69, 2006b: 70; 2008: 76; Wáng Shùmíng 王樹明 2006: 34; Ānhuīshěng wénwù kǎogǔ yánjiūsuǒ 安徽省文物考古研究所 et al. 2008: 419; Huáng Yàpíng 黃亞平 et al. 2011: 56; Wáng Yùnzhì 王蘊智 2011: 68; Hé Nú 何駑 2015: 385; Niú Qīngbō 牛清波 2013: 225-226, 2017: 68.
[3] Ānhuīshěng wénwù kǎogǔ yánjiūsuǒ 安徽省文物考古研究所 et al. 2008: 419; Huáng Yàpíng 黃亞平 et al. 2011: 56; Niú Qīngbō 牛清波 2013: 529-530, 2017: 55.
[4] Hé Nú 何駑 2015: 385-386.
[5] Ānhuīshěng wénwù kǎogǔ yánjiūsuǒ 安徽省文物考古研究所 et al. 2008: 467; Kàn Xùháng 闞緒杭 1989: 157-170 (Quote from Niú Qīngbō 牛清波 2013: 241).

the Huái River basin, dating to ca. 2000 BC.[1] The excavation conducted in 1993 unearthed a black pottery fragment with eight engraved graphs in the remains of the Nándàng 南蕩 Culture at the east of the Lóngqiúzhuāng 龙虬莊 in Gāoyóu 高郵, Yángzhōu 揚州 of Jiāngsū 江蘇 province (**Fig. 3.1-6**).

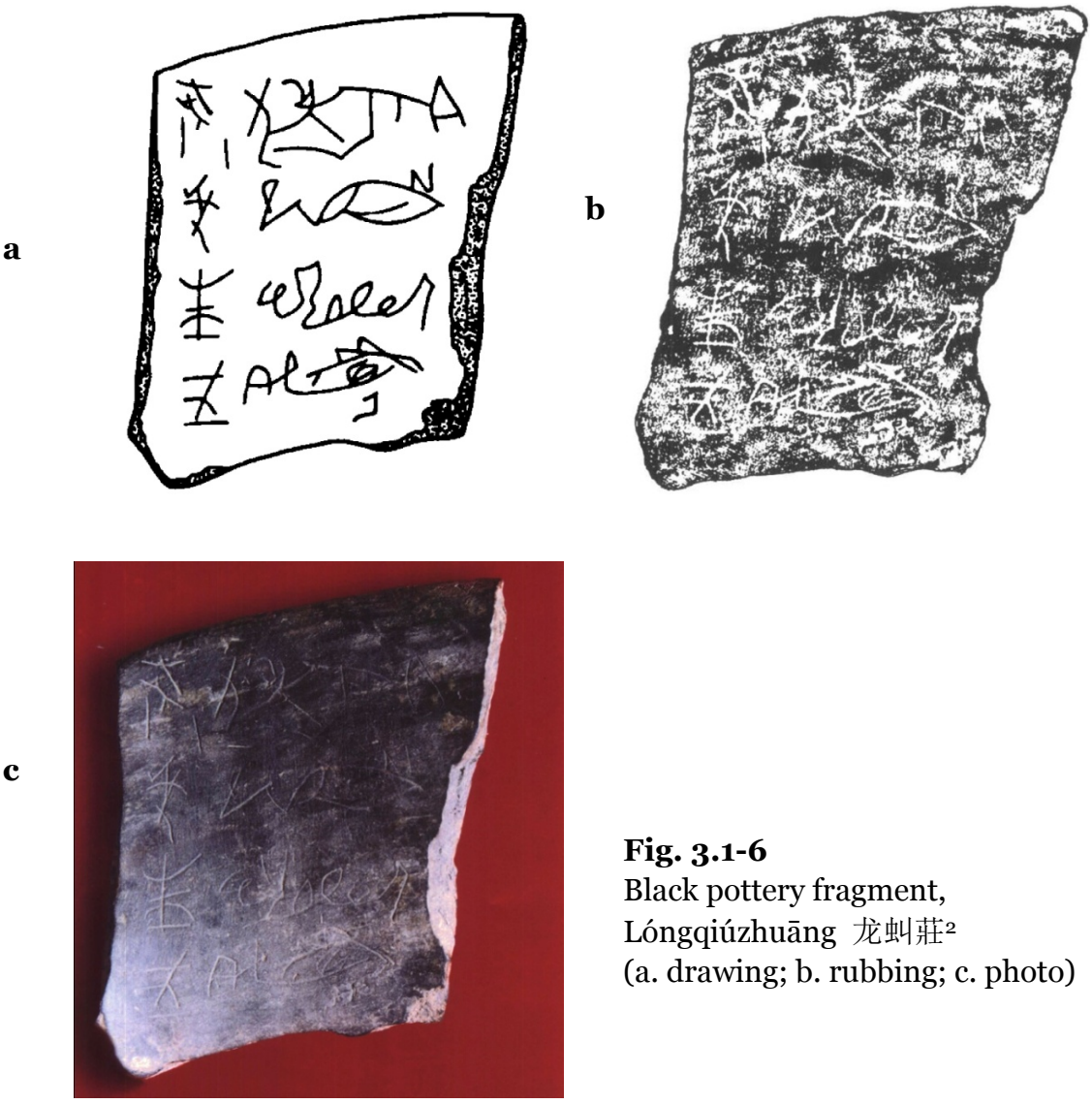


Fig. 3.1-6
Black pottery fragment,
Lóngqiúzhuāng 龙虬莊[2]
(a. drawing; b. rubbing; c. photo)

Scholars, such as Ráo Zōngyí 饒宗頤, Liú Zhìyī 劉志一, Zhōu Xiǎolù 周曉陸, Hé Zhēng 何峥 and Wáng Huī 王暉, argue that these graphs are "writing"[3] or "proto-writing" (*yuánshǐ wénzì* 原始文字),[4] but no definition of "writing" and

[1] Lóngqiúzhuāng yízhǐ kǎogǔduì 龙虬莊遺址考古隊 1999: 204.
[2] Lóngqiúzhuāng yízhǐ kǎogǔduì 龙虬莊遺址考古隊 1999: 205, 206, 573.
[3] Ráo Zōngyí 饒宗頤 1996: 12, 2009: 105; Liú Zhìyī 劉志一 1998: 57; Zhōu Xiǎolù 周曉陸 1998: 54; Hé Zhēng 何峥 2011: 258; Wáng Huī 王暉 2011: 17-18.
[4] Wáng Huī 王暉 2011: 16.

"proto-writing" is provided in their works. Scholars' interpretations are primarily based on their graphic forms as well as their similarity with oracle-bone signs. For example, Ráo Zōngyí 饒宗頤 argues that these graphs could be divided into two columns. The left column is allegedly "writing" and the right is depiction of animals.[1] From his perspective, the graph  depicted a person (*rén* 人) carrying cereal (*hé* 禾), so it is the sign *nián* 年 'harvest; one year',[2] because the oracle-bone sign *nián* 年 consists of *rén* 人 and *hé* 禾. The graphs  and are interpreted by him as zhūyóu 朱尤 with no further explanation. Zhūyóu 朱尤 was, as he alleged, zhùyóu 祝尤 'a witchcraft to exorcise evil', and examples from later literature, such as the *Guǎngyǎ* 廣雅, *Shānhǎijīng* 山海經 and *Wǔshí'èr bìngfāng* 五十二病方, are given by him as supporting evidence.[3] Likewise, Liú Zhìyī 劉志一 argues that the Lóngqiúzhuāng 龙虬莊 graphs are writing, but unlike the above scholars, in his view, these graphs were not early Chinese writing but Ancient Yí 彝 writing (*Gǔyíwén* 古彝文[4]). However, his research, like his discussion that the Jiǎhú 賈湖 graphs are Ancient Yí 彝 signs,[5] also relied on the unreliable similarity of graphs.[6] Therefore, based on the present evidence, the Lóngqiúzhuāng 龙虬莊 graphs are not writing.

Firstly, the Lóngqiúzhuāng 龙虬莊 graphs do not resemble the oracle-bone signs nor Ancient Yí 彝 signs. Moreover, in the absence of phonetic spellings and a linguistic context, the relationship between these graphs and oracle-bone inscriptions or Ancient Yí 彝 writing cannot be proven, so the interpretations based on the similarity between them are not reliable. Furthermore, the engraved pottery fragment of Lóngqiúzhuāng 龙虬莊 is an isolated example. Although some scholars have claimed that the Lóngqiúzhuāng 龙虬莊 graphs belonged to the same writing system as the engraved graphs found at Dīnggōng 丁公,[7] no similar or repeated graphs are shared by these two, and the similar cursive engraving style cannot prove a relationship between these two. In addition, the linear sequence and uniform size of the graphs are not unique characteristics of writing, as iconography also shares these characteristics.

[1] Ráo Zōngyí 饒宗頤 1996: 12, 2009: 105.
[2] Xú Zhōngshū 徐中舒 2014: 782.
[3] Ráo Zōngyí 饒宗頤 1996: 11-12, 2009: 104-106.
[4] For more details see footnote in **3.1.1**.
[5] For more details see discussions in **3.1.1**.
[6] Liú Zhìyī 劉志一 1998: 57-58.
[7] Ráo Zōngyí 饒宗頤 1996: 12, 2009: 105; Hé Zhēng 何崢 2011: 256-257. For more details about the Dīnggōng 丁公 graphs see discussions in **3.2**.

3.2 The Yellow River basin

3.2.1 The Yǎngsháo 仰韶 Culture

The Yǎngsháo 仰韶 Culture (ca. 5000-3000 BC) was named after the Yǎngsháo 仰韶 site found in Miǎnchí 澠池 of Hénán province. Discussions about the earliest Chinese writing have concentrated on the graphs found in the Bànpō 半坡 site (ca. 4700-4100 BC), Xī'ān 西安 of Shǎnxī 陕西 province, the midstream of the Yellow River basin. The excavation of Bànpō 半坡 conducted in 1954-1957 unearthed 113 pottery fragments with engraved graphs (**Fig. 3.2-1**).[1]

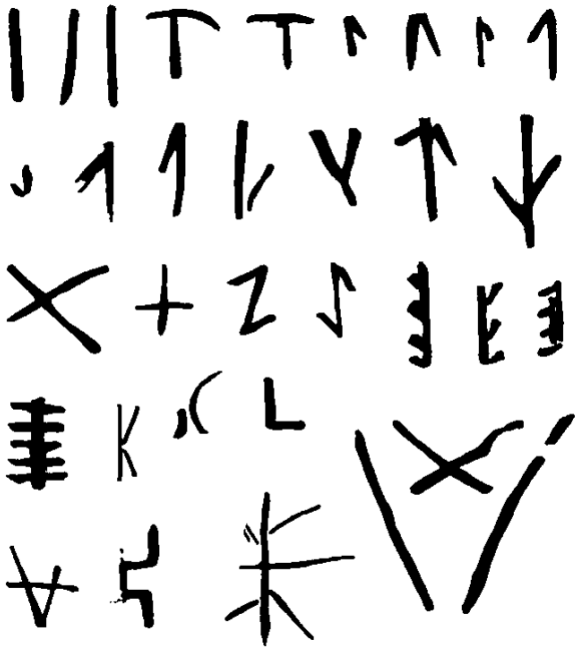


Fig. 3.2-1
Engraved graphs of the Bànpō 半坡[2]

With regard to the nature of the Bànpō 半坡 graphs, some scholars, such as Guō Mòruò 郭沫若, Yú Shěngwú 于省吾, Chén Wěizhàn 陳煒湛, Wáng Zhìjùn 王志俊, Chén Quánfāng 陳全方, Lǐ Xiàodìng 李孝定 and Wáng Yǐngjuān 王穎娟, argue that the Bànpō 半坡 graphs are "writing" at an early stage, and belong to the same system of oracle-bone inscriptions.[3] Guō Mòruò 郭沫若 first argued that the Bànpō 半坡 graphs were the origin of Chinese "writing" in 1972, and many scholars have followed his opinion. Chén Wěizhàn 陳煒湛

[1] Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 et al. 1963: 196.
[2] Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 et al. 1963: 197; Wáng Yǐngjuān 王穎娟 and Wáng Zhìjùn 王志俊 2003: 88.
[3] Guō Mòruò 郭沫若 1972: 3-14, 1992: 59-116; Yú Shěngwú 于省吾 1973: 32-35; Chén Wěizhàn 陳煒湛 1978: 69-76; Wáng Zhìjùn 王志俊 1980: 14-21; Chén Quánfāng 陳全方 1985: 63-75; Lǐ Xiàodìng 李孝定 1986a, 1986b: 43-74; Wáng Yǐngjuān 王穎娟 and Wáng Zhìjùn 王志俊 2003: 84-90.

argued that the Bànpō 半坡 graphs were Chinese "writing" at an early stage. On the basis of the similarities between the Bànpō 半坡 graphs and oracle-bone signs in their graphs, he divided the Bànpō 半坡 graphs into two groups: (1) numbers: graphs, such as  (*wǔ* 五 'five'),  (*qī* 七 'seven'),  (*shí* 十 'ten') and (*èrshí* 二十 'twenty'), indicating the sequence or category of pottery; (2) signs: graph s, such as (*zhú* 竹 'bamboo'), (*yù* 玉 'jade') and (*fù* 阜 'hill'), indicating the title or name of the owner or potter.[1] Wáng Zhìjùn 王志俊 has made a detailed discussion of the engraved graphs of the Yǎngsháo 仰韶 Culture discovered in the Guānzhōng 關中 area of China, which includes the Neolithic sites, such as Bànpō 半坡, Jiānzhài 姜寨, Lǐjiāgōu 李家溝, Língkǒu 零口, Wǔlóu 五樓, Shēnyě 莘野 and Yuántóu 垣頭. Wáng Zhìjùn 王志俊 argued that the graphs from these sites came from the same system. The Bànpō 半坡 graphs has been divided by him into numbers and pictographic signs. His interpretation of the "numbers" was the same as that of Chén Wěizhàn 陳煒湛, but for signs, he interpreted the graph as the prototype of *shǐ* 矢 'arrow' or *máo* 矛 'spear' instead of *zhú* 竹 'bamboo'.

Although most of these scholars have claimed that writing is used to record language and that the Bànpō 半坡 graphs are signs in writing,[2] they provide no convincing evidence in their discussions. They have interpreted the Bànpō 半坡 graphs on the basis of their graphic forms and the similarities between these graphs and oracle-bone inscriptions. However, even if they have similar graphic forms, it has not been demonstrated that the Bànpō 半坡 graphs represent the same things as oracle-bone signs, nor is it clear that they represent language at all.

Other scholars, such as Wāng Níngshēng 汪寧生 (AD 1930-2014), Yán Rǔxián 嚴汝嫻, Gāo Míng 高明 (AD 1926-2018), Qiú Xīguī 裘錫圭, Keightley, Lín Xiǎo'ān 林小安, Yán Wénmíng 嚴文明, Boltz, Liú Míngāng 劉民鋼 and Zhōu Yǒuguāng 周有光 (AD 1906-2017), reject the claim that the Bànpō 半坡 graphs are writing.[3] This viewpoint makes more sense for the following reasons. Firstly, as Zhōu Yǒuguāng 周有光 has argued, the Bànpō 半坡 graphs were all

[1] Chén Wěizhàn 陳煒湛 1978: 72-73.
[2] Yú Shěngwú 于省吾 1973: 32; Chén Wěizhàn 陳煒湛 1978: 70; Wáng Zhìjùn 王志俊 1980: 17; Chén Quánfāng 陳全方 1985: 67.
[3] Wāng Níngshēng 汪寧生 1981: 3-46, 2008: 27-82; Yán Rǔxián 嚴汝嫻 1982: 312-315; Gāo Míng 高明 1984: 47-59, 1994: 73-100, 2001: 1-17, 229-242; Qiú Xīguī 裘錫圭 1988: 22-24; 2000: 30-33, 2013: 22-24; Keightley 1989: 187-188; Lín Xiǎo'ān 林小安 1993: 86-90; Yán Wénmíng 嚴文明 1993: 40-42; Boltz 1994: 35-52; 2000: 1-17; Liú Míngāng 刘民钢 1997: 60-63; Zhōu Yǒuguāng 周有光 1997: 24; 2018: 24)

isolated on single pottery fragments, and we have no idea about the sounds and meanings of these graphs, so the relationship between the Bànpō 半坡 graphs and oracle-bone inscriptions cannot be proven.[1] In other words, in the absence of phonetic spellings and a linguistic context, it cannot be shown that the Bànpō 半坡 graphs represent language.

Moreover, pottery graphs may belong to a system that has no relationship whatsoever to the writing system. This is due to the fact that from the Neolithic period (such as Bànpō 半坡 and Jiāngzhài 姜寨; **Fig. 3.2-2**), through the Shāng period (such as Mǎqiáo 馬橋; **Fig. 3.2-3**), down to the Spring and Autumn period and the Warring States period (such as Hóumǎ Niúcūn 侯馬牛村; **Fig. 3.2-4**), pottery graphs were used constantly but never mixed with signs. By the Spring and Autumn period and the Warring States period, Chinese writing was already fully developed, but pottery graphs were still very primitive.[2] Thus, pottery graphs may have been part of a human marking system[3] and have no direct relationship to Chinese writing system.

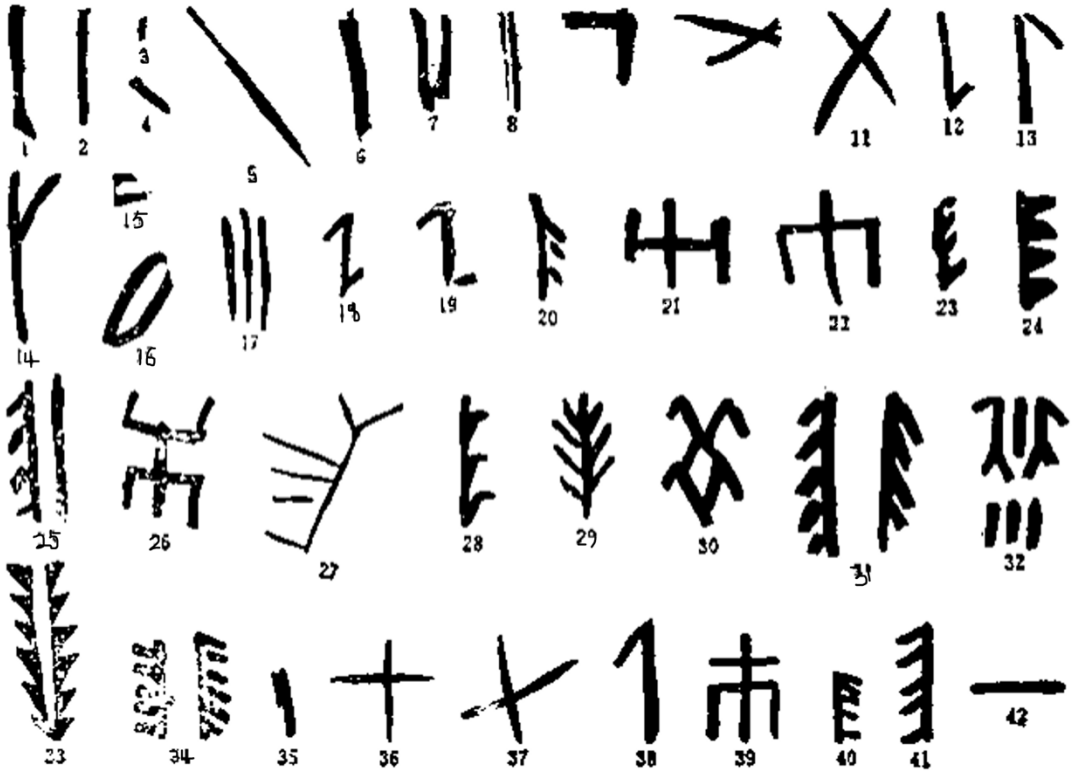


Fig. 3.2-2 Engraved graphs of Jiāngzhài 姜寨[4]

[1] Zhōu Yǒuguāng 周有光 1997: 24; 2018: 24.
[2] Gāo Míng 高明 1984: 47-51, 1994: 75-74; 2001: 1-7, 231.
[3] Keightley 1989: 188.
[4] Bànpō bówùguǎn 半坡博物馆 et al. 1988: 142.

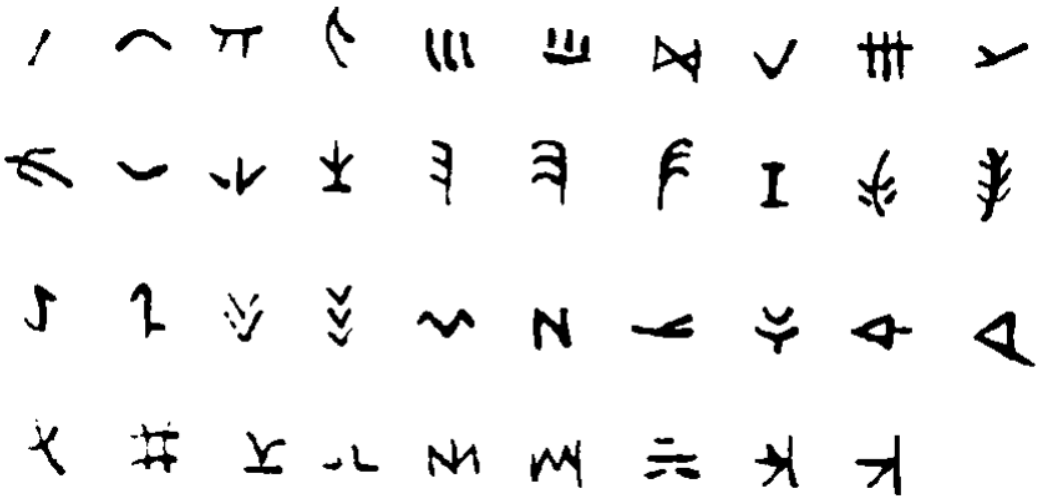


Fig. 3.2-3 Engraved graphs of Măqiáo 馬橋[1]

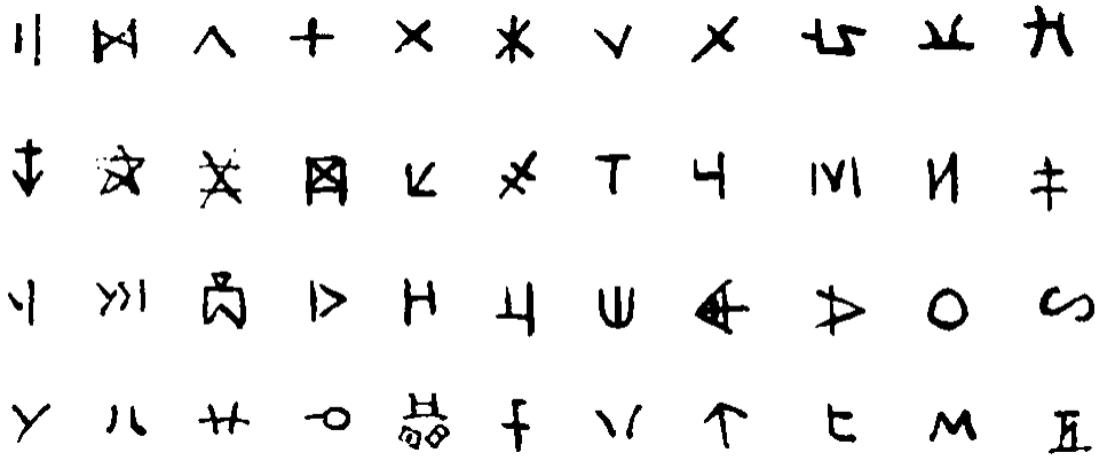


Fig. 3.2-4 Engraved graphs of Hóumă Niúcūn 侯馬牛村[2]

Furthermore, the sheer amount of time between the Bànpō 半坡 graphs (ca. 4700-4100 BC) and the oracle-bone system (which first appeared ca. 1600-1400 BC) rules out any possibility that there could be a developmental relationship between these two.[3] Three thousand years seem too long for the development of a writing system. As discussed in **5.1**, writing is an invention, not the product of an evolutionary development. An inceptive attempt at

[1] Gāo Míng 高明 2001: 5.
[2] Gāo Míng 高明 2001: 6.
[3] For more details see discussions in **3.4**.

writing is not likely to remain in an immature state for several thousand years before it finally turns into a fully developed writing system. Instead, a writing system is developed quickly, or not at all.[1]

In addition, as the vast majority of the Bànpō 半坡 graphs are engraved on the same kind of pottery vessel (*bō* 鉢, bowl) on the same position, outer rim of the bowl, it is very likely that the Bànpō 半坡 graphs are potters' or owners' marks.[2] Wāng Níngshēng 汪寧生 and Yán Rǔxián 嚴汝嫻 have also compared the Bànpō 半坡 graphs with primitive record-keeping methods of some Chinese minorities lacking writing, and claim that the Bànpō 半坡 graphs were potters' or owners' marks recorded to avoid loss or confusion with others.[3] For example, the Pǔmǐzú 普米族 build houses with wood,[4] and to prevent confusion or loss, they engrave some graphs (**Fig. 3.2-5**) to indicate the ownership of the wood.[5]

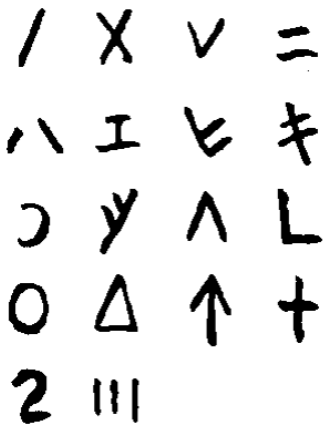


Fig. 3.2-5
Engraved graphs of ownership of Pǔmǐzú 普米族[6]

3.2.2 The 陶寺 Táosì Culture

The Táosì 陶寺 Culture (ca. 2600-2000 BC) was named after the Táosì 陶寺 site found in Xiāngfén 襄汾 of Shānxī 山西 province, the midstream of the Yellow River basin.[7] The excavation of Táosì 陶寺, conducted from 1978 to 1984, unearthed a pottery vessel (*hú* 壺) with two painted graphs (**Fig. 3.2-6**).

[1] Keightley 1989: 187-188; Boltz 1994: 38, 2000: 2.
[2] Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 et al. 1963: 198; Gāo Míng 高明 1984: 55, 1994: 76, 2001: 10, 231; Liú Míngāng 刘民钢 1997: 60-63.
[3] Wāng Níngshēng 汪寧生 1981: 3-46, 2008: 27-82; Yán Rǔxián 嚴汝嫻 1982: 312-315.
[4] Pǔmǐzú 普米族 is an ethnic group mainly situated in the Chinese provinces of Yúnnán 雲南 and Sìchuān 四川.
[5] Yán Rǔxián 嚴汝嫻 1982: 312.
[6] Yán Rǔxián 嚴汝嫻 1982: 313.
[7] Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 2010: 567-568.

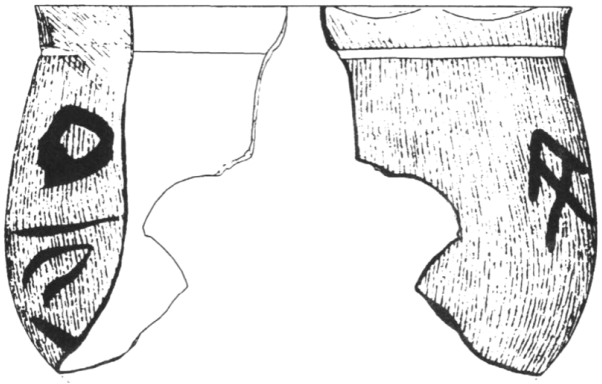


Fig. 3.2-6
Pottery vessel (*hú* 壺) with graphs, Táosì 陶寺[1]

The pottery fragments with graphs  and  , which come from the same pottery vessel (*hú* 壺), belong to the late period of Táosì 陶寺 Culture, dating to ca. 2000 BC.[2] These graphs are written in vermilion with a tool similar to a brush. Some scholars, such as Lǐ Jiànmín 李健民 and Hé Nú 何駑, argue that before the writing of these graphs, the pottery vessel was already broken, because the edges of the pottery fragments are also painted with vermilion.[3]

Most scholars working on this subject, such as Lǐ Jiànmín 李健民, Luó Kūn 羅琨, Hé Nú 何駑, Féng Shí 馮時 and Wáng Huī 王暉, argue that the graph  is the sign *wén* 文 simply based on the fact that it has the same graphic form as the oracle-bone sign **mə[n]*  (*wén* 文) (see below).[4] With regard to the graph , scholars have divergent opinions. Luó Kūn 羅琨 (2001, 2007) argues that this graph is the sign *yáng* 昜, because of the similar graphic form to the sign **laŋ* (*yáng* 昜) in oracle-bone inscriptions, as well as bronze inscriptions (**laŋ*).[5] Hé Nú 何駑 claims that the graph is the sign *yáo* 堯, because they have a similar graphic form.[6] To further support his view, Wáng Huī 王暉 finds more examples of the sign *yáo* 堯 from bamboo manuscripts and seals of the Warring States Period, such as  , and  .[7] Féng Shí 馮

[1] Lǐ Jiànmín 李健民 2001; Xiè Xīgōng 解希恭 2007: 620.
[2] Lǐ Jiànmín 李健民 2001, 2007: 620-623; Féng Shí 馮時 2008: 273; Wáng Huī 王暉 2010: 232.
[3] Lǐ Jiànmín 李健民 2001, 2007: 620; Hé Nú 何駑 2004, 2007: 633.
[4] Lǐ Jiànmín 李健民 2001, 2007: 621; Luó Kūn 羅琨 2001, 2007: 624; Hé Nú 何駑 2004, 2007: 633; Féng Shí 馮時 2008: 273; Wáng Huī 王暉 2010: 232.
[5] Luó Kūn 羅琨 2001, 2007: 624.
[6] Hé Nú 何駑 2004, 2007: 633.
[7] Wáng Huī 王暉 2010: 232.

時 argues that the graph  should be the sign *yì* 邑, because it has a similar graphic form to the sign **q(r)[ə]p*  (*yì* 邑) in oracle-bone and bronze inscriptions, consisting of *wéi* 口 and *rén* 人, such as  (JC 7589). So the two graphs  and  on the pottery fragments should be read as Wényì 文邑, the name of a city.

However, some scholars argue that the graph  consists of more than one sign. For example, Lǐ Xuéqín 李學勤 argues that the graph  is made up of two signs: the upper is *rì* 日 (sun; day) and the lower is *yuè* 月 (moon; month), to depict the natural phenomenon of sunrise and moonset.[1] However, according to his discussion, the graph has more to do with iconography than writing.

As mentioned above, the basis of scholars' discussions on the Táosì 陶寺 graphs is their similarities with later Chinese writing, such as oracle-bone or bronze inscriptions. Based on these similarities, they suppose that the graphs and are writing (but they have not given a definition of writing in their works), and belong to the same writing system as later Chinese writing. As oracle-bone writing is a mature script, and the graph has the same graphic form as the oracle-bone sign *wén* 文, the "writing" of the Late Táosì 陶寺, from their perspective, is also a mature script, and Chinese writing was then invented long (at least ca. 2000 BC) before the oracle-bone script.[2]

Although the graph has the same graphic form as the oracle-bone sign **mə[n]* (*wén* 文), the relationship between the Táosì 陶寺 graphs and oracle-bone signs cannot be proved by the resemblance of single graphic forms without linguistic context and phonetic evidence. On its own, the similarity in graphic form is not convincing, because the basis of their discussions is not reliable.

[1] Lǐ Xuéqín 李學勤 2002, 2009: 14-19.
[2] Lǐ Jiànmín 李健民 2001, 2007: 621; Luó Kūn 羅琨 2001, 2007: 624; Féng Shí 馮時 2002, 2007: 632, 2008: 273; Hé Nú 何鴌 2004, 2007: 633.

Moreover, in order to support the reading of Wényì 文邑, Féng Shí 馮時 presents two examples of Wényì 文邑 from oracle-bone inscriptions, and in his opinion, the inscriptions should be read as:

13. 癸酉卜，貞: 文邑[受]禾? (H 33243, Period I)

Guǐyǒu bǔ, zhēn: Wényì [shòu] hé?

Crack-making on the day *Guǐyǒu* 癸酉 (the 10th in the 60-day *gānzhī* cycle), [the diviner] divined: Will Wényì 文邑 have harvest?

14. □酉卜, [貞] 文邑受禾?
□□卜, [貞:文] 邑受禾? (H 33242, Period I)

□*yǒu bǔ, [zhēn]: Wényì shòu hé?*
□□ *bǔ, [zhēn: Wén]yì shòu hé?*

Crack-making on the day □*yǒu* □酉 (the 10th in the *dìzhī* 地支 cycle), [the diviner divined]: Will Wényì 文邑 have harvest?
Crack-making on the day □□, [the diviner divined]: Will [Wén]yì [文]邑 have harvest?

But if we examine the rubbings (**Fig. 3.2-7**), we see that the sign  on H 33243 is incomplete, so it cannot be read as **mə[n]*  (*wén* 文) for sure. On H 33242, the so-called *wén* 文 sign cannot even be found. They definitely cannot be used as supporting evidence for the discussion of the nature of the graph  .

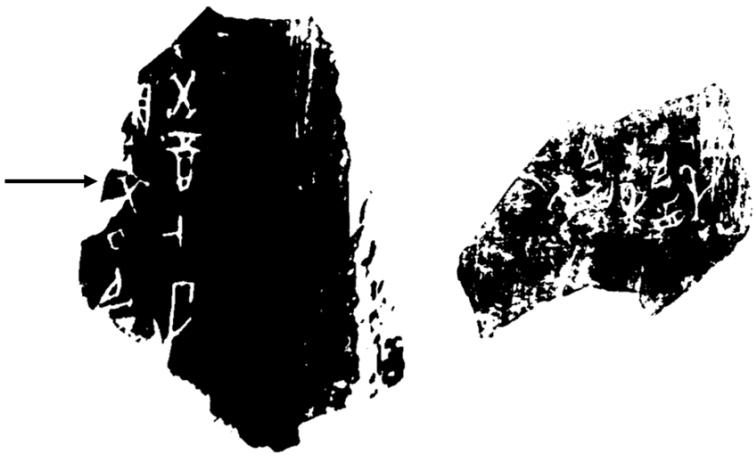


Fig. 3.2-7
Rubbings of H 33243 (left) and H 33242 (right)

3.2.3 The Wángwānsānqī 王灣三期 Culture

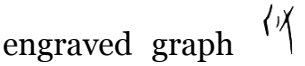
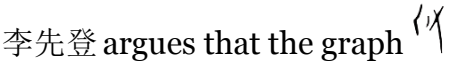
The Wángwānsānqī 王灣三期 Culture dates to ca. 2600-1900 BC,[1] and Wángchénggǎng 王城崗, located in Dēngfēng 登封 of Hénán province, the midstream of the Yellow River basin, is one of its main sites. The excavation of Wángchénggǎng 王城崗, conducted from 1975 to 1981, unearthed seven pottery fragments with graphs. Whether the graph on WT195H473:3 (**Fig. 3.2-8**) is writing is still under debate. Some scholars, such as Lǐ Xiāndēng 李先登 (AD 1938-2009), Wáng Cháohuī 王朝輝 and Lǐ Xuéqín 李學勤 et al., argue that engraved graph  of Wángchénggǎng 王城崗 on the black pottery fragment WT195H473:3 is the sign *gòng* 共.

Fig. 3.2-8
Pottery fragment WT195H473:3, Wángchénggǎng 王城崗[2]

Lǐ Xiāndēng 李先登 argues that the graph  is different from the signs found in the Yǎngsháo 仰韶 and the Dàwènkǒu 大汶口 Culture in nature, and that it is "writing" (but the definition is not presented), taking virtually the same form as the sign gòng 共 in the oracle-bone and bronze inscriptions. From his perspective, this graph is a mature example of *huìyìzì* 會意字 (syssemantographs/ "converging meanings"),[3] so Chinese writing in this period has already passed through an early stage of development.[4] Wáng Cháohuī 王朝輝 claims that Chinese writing was invented before Late Shāng. The development of Chinese writing follows the order of *Liùshū* 六書 (six-principle theory),[5] so it should have periodic characteristics, and the

[1] Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2010: 535.
[2] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 1999: 446.
[3] *Huìyìzì* 會意字 (syssemantograph) refers to "the joining together of two or more semantic components to arrive at a third, convergent meaning" (Shaughnessy 2010: 218).
[4] Lǐ Xiāndēng 李先登 1984: 74-75, 2001: 79, 89.
[5] For detials on Liùshū 六書 see discussion in **1.2.2** and see also, e.g. Qiu 2000: 102; Shaughnessy 2010:

signs before oracle-bone inscriptions are supposed to have some characteristics of mature writing (such as oracle-bone and bronze inscriptions) on the one hand, but exist in primitive form on the other. Likewise, the graph  depicts two hands holding something. This depiction is also the same for the sign *gòng* 共 in oracle-bone, bronze inscriptions and bamboo manuscripts, such as  (oracle-bone) and  (bronze). Therefore, the graph is the sign 共 gòng.[1] Moreover, Lǐ Xuéqín 李學勤 et al. argue that "broken potsherds from two pits in Wangchenggang, Dengfeng City, Henan Province bear extremely complex signs strongly suggesting 'writing'."[2]

In addition, the engraved pottery fragment belongs to the third period of the Wángchénggǎng 王城崗 site (ca. 2130-1835 BC).[3] According to the latest carbon-14 results, the Xià Dynasty dates back to ca. 2070-1600 BC,[4] so Wángchénggǎng 王城崗 constitutes the ruins of the Xià Dynasty. Moreover, according to the archaeological evidence and ancient literature, some scholars argue that Wángchénggǎng 王城崗 was the capital city Yángchéng 陽城 of King Yǔ 禹 of Early Xià Dynasty.[5] Therefore, the graph is, as these scholars alleged, important evidence for the existence of "writing" in the Early Xià Dynasty, and that this "writing system" has direct relationship with oracle-bone inscriptions.[6]

However, the graph does resemble oracle-bone sign **N-k(r)oŋʔ-s*  (*gòng* 共) to some extent, depicting two hands holding something,[7] but the left part of the graph does not resemble the depiction of a hand. In terms of the graphic form, the graph also has a resemblance to the oracle-bone sign * **Cə.panʔ*  (*fǎn* 反). Therefore, the opinion that the graph is the sign *gòng* 共, based on the graphic similarity without phonetic evidence and a linguistic context, is not reliable. Our judgment on the existence of writing in this period obviously cannot be based on this unreliable example, and the invention of Chinese writing cannot be traced back to the Early Xià Dynasty under these circumstances.

217.

1 Wáng Cháohuī 王朝輝 2018.

2 Lǐ Xuéqín 李學勤 et al. 2003.

3 Běijīng dàxué kǎogǔ wénbó xuéyuàn 北京大學考古文博學院 et al. 2007.

4 Xiàshāngzhōu duàndài gōngchéng zhuānjiāzǔ 夏商周斷代工程專家組 2000: 82.

5 Lǐ Xiāndēng 李先登 2001: 80; Fāng Yǒushēng 方酉生 1991; Hénánshěng wénwù yánjiūsuǒ 河南省文物研究所 et al. 1992: 76-80.

6 Lǐ Xiāndēng 李先登 1984: 75, 2001: 79, 89.

7 Zhào Chéng 趙誠 2009: 68; Xú Zhōngshū 徐中舒 2014: 236.

3.2.4 The Dàwènkǒu 大汶口 Culture (late)

The Dàwènkǒu 大汶口 Culture (ca. 4200-2600 BC) was named after the Dàwènkǒu 大汶口 site found in Tài'ān 泰安 of Shāndōng province, the downstream of Yellow River basin. The Dàwènkǒu 大汶口 Culture can be divided into three periods: (1) the early period: ca. 4200-3600 BC; (2) the middle period: ca. 3600-3100 BC; and (3) the late period: ca. 3100-2600 BC.[1] Scholars' studies have focused on the late period. The excavation of Língyánghé 陵陽河 (**Fig. 3.2-9**), Dàzhūjiācūn 大朱家村 (**Fig. 3.2-10**), Yùchísì 尉遲寺 unearthed 21 pottery fragments with engraved graphs (**Fig. 3.2-11**). To date, 26 of these have been published.[2]

Some scholars have argued that the Dàwènkǒu 大汶口 graphs are writing and have a close relationship to the system in oracle-bone inscriptions.[3] Táng Lán 唐蘭 and Wáng Shùmíng 王樹明 are representative of these scholars, who have tried to make some interpretations based on their graphic forms and the similarities between these graphs and oracle-bone signs. Táng Lán 唐蘭 has argued that the graphs  and  can be interpreted as *jiǒng* 炅 'sunlight; lightness',[4] because the graph  consists of three parts which depict the sun, fire and mountain respectively, and the graph  , omitting the "mountain" part below, has the same elements as the sign *jiǒng* 炅, which is made up of *rì* 日 'sun' and *huǒ* 火 'fire'.[5] The graph  is a depiction of a kind of axe-like weapon, and can be interpreted as *wù* 戊 'the fifth of *tiāngān* 天干'[6] or *yuè* 戉 'a kind of axe-like weapon' (the same as *yuè* 鉞 'a kind of axe-like weapon, but larger in size').[7] The graph  is a depiction of a tool, for example, a tool for smoothing wood with the handle and blade in a T-shape (that is, *bēn* 錛),[8] and can be interpreted as *jīn* 斤 'a tool for cutting trees'.[1]

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[1] Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2010: 292.

[2] Niú Qīngbō 牛清波 2013: 87.

[3] Yú Xǐngwú 于省吾 1973: 32; Táng Lán 唐蘭 1975: 72-73, 1977, 1981: 79-84; Péng Bāngjiǒng 彭邦炯 1977, 1981: 85-89; Lǐ Xiàodìng 李孝定 1979, 1986: 185-227; Gāo Guǎngrén 高廣仁 1981: 110-119; Wáng Shùmíng 王樹明 1986: 249-308; Lǐ Xuéqín 李學勤 1987: 75-80, 1989: 54-66; Wáng Zhènzhōng 王震中 1997: 30-37, 2005: 103-119; Hán Jiànyè 韩建业 and Yáng Xīngǎi 楊新改 2008: 43-47; Ráo Zōngyí 饒宗頤 2009: 57-69, 79-80.

[4] Zhōngguó shèhuì kēxuéyuàn yǔyán yánjiūsuǒ cídiǎn biānjíshì 中國社會科學院語言研究所詞典編輯 2016: 696.

[5] Táng Lán 唐蘭 1975: 72.

[6] *Tiāngān* 天干, generally translated as the Heavenly Stems or the Celestial Stems, is a system of ordinals that used in combination with *dìzhī* 地支 (the Earthly Branches) to produce a compound cycle of sixty days.

[7] Zhōngguó shèhuì kēxuéyuàn yǔyán yánjiūsuǒ cídiǎn biānjíshì 中國社會科學院語言研究所詞典編輯室 2016: 1619.

[8] Zhōngguó shèhuì kēxuéyuàn yǔyán yánjiūsuǒ cídiǎn biānjíshì 中國社會科學院語言研究所詞典編輯室

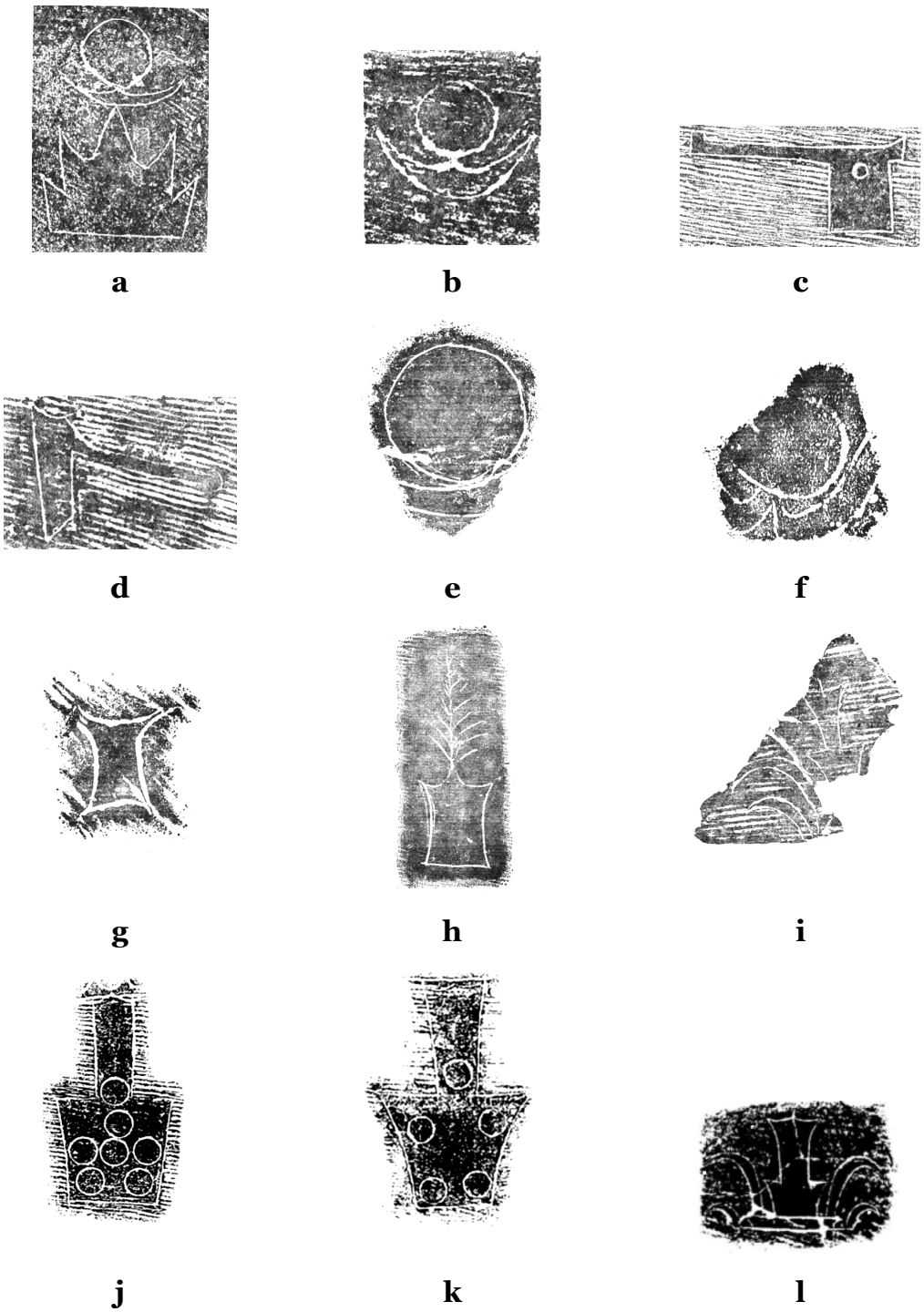
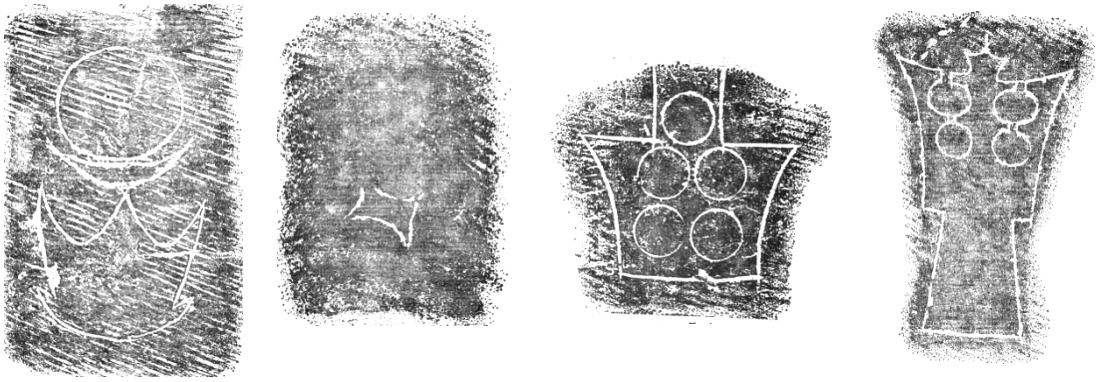


Fig. 3.2-9 Engraved graphs of Língyánghé 陵陽河[2]

2016: 61.

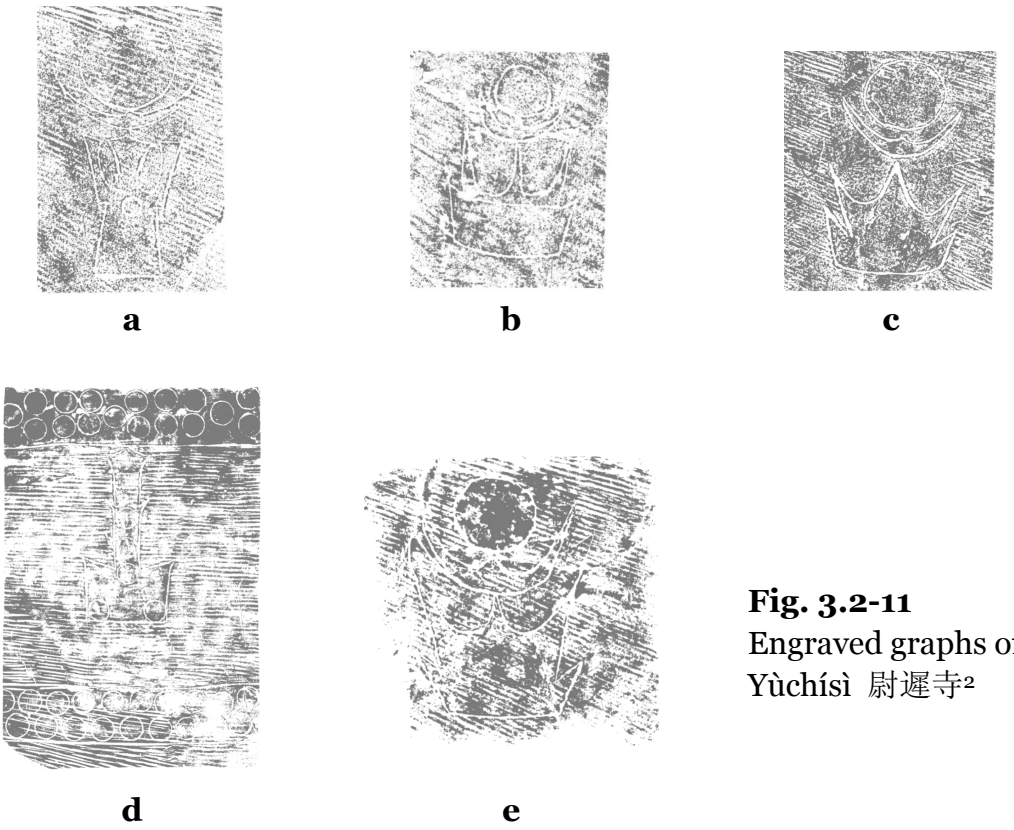
[1] Táng Lán 唐蘭 1975: 73.

[2] Rubbings 1-4: Shāndōngshěng wénwù guǎnlǐchù 山東省文物管理處 et al. 1974: 118; Rubbings 5-9: Shāndōngshěng qílǔ kǎogǔ cóngkān biānjíbù 山東省《齐鲁考古叢刊》編輯部 1986: 287, 289, 294, 298, 301; Rubbings 10-12: Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 2010: 303.



a **b** **c** **d**

Fig. 3.2-10 Engraved graphs of Dàzhūjiācūn 大朱家村[1]



a **b** **c**

d **e**

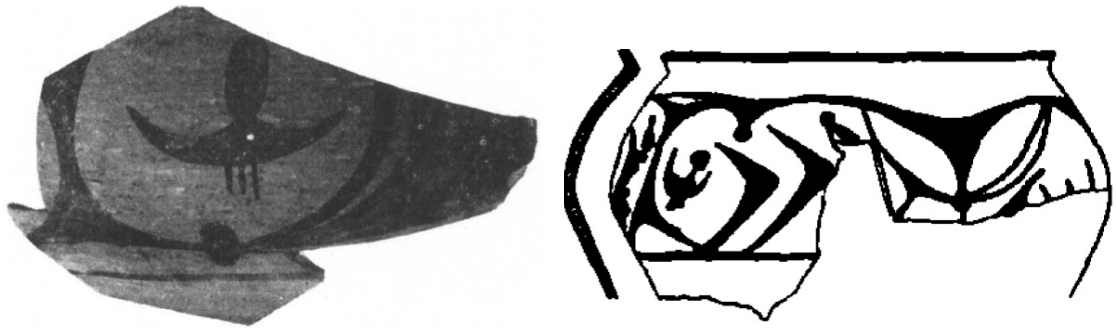
Fig. 3.2-11
Engraved graphs of Yùchísì 尉遲寺[2]

[1] Rubbings 1-4: Shāndōngshěng qílǔ kǎogǔ cóngkān biānjíbù 山東省《齐鲁考古叢刊》編輯部 1986: 291, 295, 304, 305.
[2] Rubbings 1-3: Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 2001: 324; Rubbings 4-5: Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 2001: 118-119.

Likewise, Wáng Shùmíng 王樹明 has also claimed that the graph  depicts the sun, fire and mountain, and the graph  depicts the sun and fire, but in his view,  is the prototype of the sign *dá* 炟 'to catch fire', which looks like the rising sun[1], and  is the prototype of the sign *jiǒng* 炅. From his perpective, to the east of the Língyánghé 陵陽河 is a mountainous area where there is a mountain named Sìgù 寺崮 with five peaks in a row and the main peak in the middle. In the morning the sun rises in the east and above the main peak, so the graph  is a depiction of this scene. Therefore, this graph is allegedly the prototype of the sign *dá* 炟，and the 一 is the simplification of the "five-peak mountain" part.[2] However, if the graph  is only a depiction of the sunrise over Sìgù 寺崮 mountain, it should not be found in other places.[3] In fact, this graph has also been found at Yùchísì 尉遲寺, 350 kilometers away from Língyánghé 陵陽河.

Other scholars reject the claim that the Dàwènkǒu 大汶口 graphs are writing.[4] This viewpoint makes more sense for the following reasons: Firstly, interpretations based on graphic forms and the similarities between the Dàwènkǒu 大汶口 graphs and oracle-bone signs are not reliable. Because the vast majority of these graphs appeared in isolation, and without a linguistic context, it cannot be proven that these graphs and the relevant oracle-bone signs represent the same thing. Moreover, writing is rendition of language, but in the absence of phonetic spellings, we have no idea whether these graphs represent language. Secondly, the graphs  and  may have a close relationship to the worship of the sun god and the *yángniǎo* 陽鳥 'the sun bird'.[5] Similar graphs have also been found on pottery vessels at 廟底溝 Miàodǐgōu and Dàyǔdùcūn 大禹渡村 of the Yǎngsháo 仰韶 Culure (**Fig. 3.2-12**) as well as the jade vessel (*zhuó* 鐲) of the 良渚 Liángzhǔ Culture (**Fig. 3.3-5i**).

[1] Tāng Kějìng 湯可敬 2018: 1431.
[2] Wáng Shùmíng 王樹明 1986: 249-252.
[3] Wáng Zhènzhōng 王震中 1997: 32.
[4] Chén Guóqiáng 陳國强 1978: 66-73, 1981: 96-109; Wāng Níngshēng 汪寧生 1981: 3-46, 2008: 27-82; Zōu Héng 鄒衡 1987: 69-74; Keightley 1989: 195-198, 2006: 177-180; Wáng Héngjié 王恒傑 1991: 1119-1120; Qiú Xīguī 裘錫圭 1993, 2012: 237-238, 2013: 24-30; Boltz 1994: 44-52; Gāo Míng 高明 1994: 73-100, 2001: 229-242; Zhāng Wén 張文 1994: 73-80; Postgate et al. 1995: 467; Guō Yànbīng 郭雁冰 2000: 8-10; Liú Dézēng 劉德增 2002: 56-69; Sūn Chángchū 孫長初 2005: 12-14; Zhāng Péngchuān 張朋川 2005: 157-158; Chén Guāngyǔ 陳光宇 2008: 28-29, 2017: 58-59; Hé Zhēng 何崢 2011: 212-213; Niú Qīngbō 牛清波 2013: 456-460.
[5] For more details see discussions in **3.3**.



Miàodǐgōu 廟底溝[1] Dàyǔdùcūn 大禹渡村[2]

Fig. 3.2-12 Painted pottery of the Yǎngsháo 仰韶 Culture

Gāo Míng 高明 argues that the painted pottery fragment found at Quánhùcūn 泉護村 of the Yǎngsháo 仰韶 Culture (**Fig. 3.2-13**) depicts the legend of the sun bird, in which the sun bird flies with the sun on its back and helps the sun to rotate. This painted fragment is alleged to show the sun bird in profile, while the graph  and other similar graphs of the Dàwènkǒu 大汶口, the Liángzhǔ 良渚 and the Yǎngsháo 仰韶 Culture are from behind, so that only the bird's wings can be seen.[3] Also, the graph  has the same meaning as the graph  , with the "mountain" part showing the height of the bird's flight.[4]

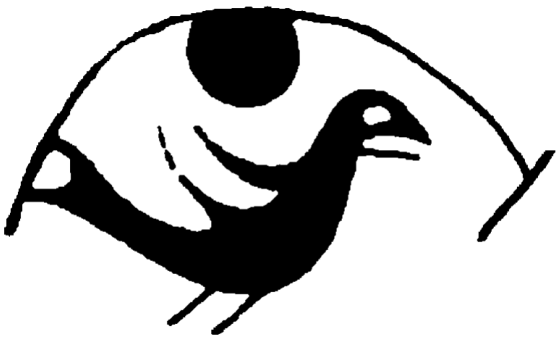


Fig. 3.2-13
The painted pottery fragment at Quánhùcūn 泉護村[5]

[1] Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 1959: figure IV.

[2] Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ shānxī gōngzuòduì 中國科學院考古研究所山西工作隊 1962: 460.

[3] Gāo Míng 高明 2001: 231-235; Sūn Chángchū 孫長初 2005: 12-14; Zhāng Péngchuān 張朋川 2005: 157-158; Hé Zhēng 何崢 2011: 212-213.

[4] Gāo Míng 高明 2001: 231-235.

[5] Gāo Míng 高明 1959: 234.

Furthermore, the Dàwènkǒu 大汶口 graphs might be emblems of ownership or identity.[1] These graphs might be the pre-Shāng counterpart to the Shāng clan-name insignia, with a continuous line of development from the one to the other.[2] In addition, most Dàwènkǒu 大汶口 graphs are engraved on the outer surface of the same kind of pottery vessel (*zūn* 尊). These vessels are funerary objects of large tombs and are placed prominently in the tombs, so they are thought to represent the identity and status of the owner of the tomb, rather than daily necessities. Some scholars argue that these pottery vessels were used in ritual activities.[3] Moreover, some graphs are painted with vermilion, such as M75:1 of Dàwènkǒu 大汶口 and M17: 1 of Dàzhūjiācūn 大朱家村, which may be treated as a supporting evidence for the ritual function of these graphs. This can refer to the painted graphs unearthed from Xiǎoshuāngqiáo 小雙橋, which are all excavated from the ritual areas. They were written on the flat outer surface of pottery vessels (*gāng* 缸), and likewise painted in vermilion.[4]

3.2.5 The Lóngshān 龍山 Culture

The Lóngshān 龍山 Culture (ca. 2600-2000 BC) was named after the Chéngziyá 城子崖 site found in Lóngshān 龍山, Lìchéng 曆城 of Shāndōng province, the downstream of Yellow River basin. Scholars working on the earliest Chinese writing have paid great attention to the Dīnggōng 丁公 site found in Zōupíng 鄒平 of Shāndōng province. The excavation of Dīnggōng 丁公 conducted in 1992 unearthed a pottery fragment with 11 engraved graphs (H1235:2; **Fig. 3.2-14**), dating to ca. 2200-2100 BC,[5] which has aroused bitter controversy among scholars on its authenticity ever since its excavation.

Some scholars, such as Hú Hòuxuān 胡厚宣 (1993)[6] and Cáo Dìngyún 曹定雲 (1993,[7] 1996), have questioned the authenticity mainly for the following reasons: (1) The fragment was discovered outside of a stratigraphic context, because it was not found at the excavation site. Instead, it was found when workers assisted excavators in sorting and cleaning the remains at least two months later. Hú argued that the pot fragment belongs to the Lóngshān 龍山 Culture, but the engraved graphs might not.[8] Cáo claimed that it is very possible that this fragment was disturbed by agricultural activity or mixed up

[1] Wāng Níngshēng 汪寧生 1981: 28, 2008: 64-65; Keightley 1989:195-198, 2006: 177-180; Boltz 1994: 46-52; Postgate et al. 1995:467; Qiú Xīguī 裘錫圭 2013: 29-30.
[2] For more details see discussions in **3.3**.
[3] Shào Wàngpíng 邵望平 1978: 74-76; Shāndōngshěng wénwù kǎogǔ yánjiūsuǒ 山東省文物考古研究所 et al. 1991b: 165-202; Wáng Jíhuái 王吉懷 et al. 2001: 45-54; Gāo Guǎngrén 高廣仁 and Shào Wàngpíng 邵望平 2005: 100-102; Chén Guāngyǔ 陳光宇 2008:29; Niú Qīngbō 牛清波 2013:459.
[4] For more details see discussions in **3.4**.
[5] 山東大學曆史系考古專業 Shāndōng dàxué lìshǐxì kǎogǔ zhuānyè 1993: 296-298.
[6] Xiāo Wǔ 肖武 1993: 18.
[7] Quote from Fāng Yǒushēng 方酉生 1995: 7.
[8] Xiāo Wǔ 肖武 1993: 18.

during the process of transportation, storage and cleaning.[1] (2) The calligraphy of these graphs resemble the "cursive script" (*cǎoshū* 草書) of the Hàn Dynasty, and that the cursive writing style was quite different from other contemporary pottery graphs.[2] Cáo argued that the cursive script first appeared at the beginning of the Hàn Dynasty, and therefore that the Dīnggōng 丁公 graphs would have been engraved no earlier than the end of the Hàn Dynasty.[3] (3) Judging by the traces of the engraving, Cáo argued that these graps were engraved with the help of an iron instrument, rather than by a stone, bone or bronze one. As a result, the Dīnggōng 丁公 graphs would have been engraved no earlier than the Spring and Autumn period and the Warring States period, when ironware was first used extensively.[4]

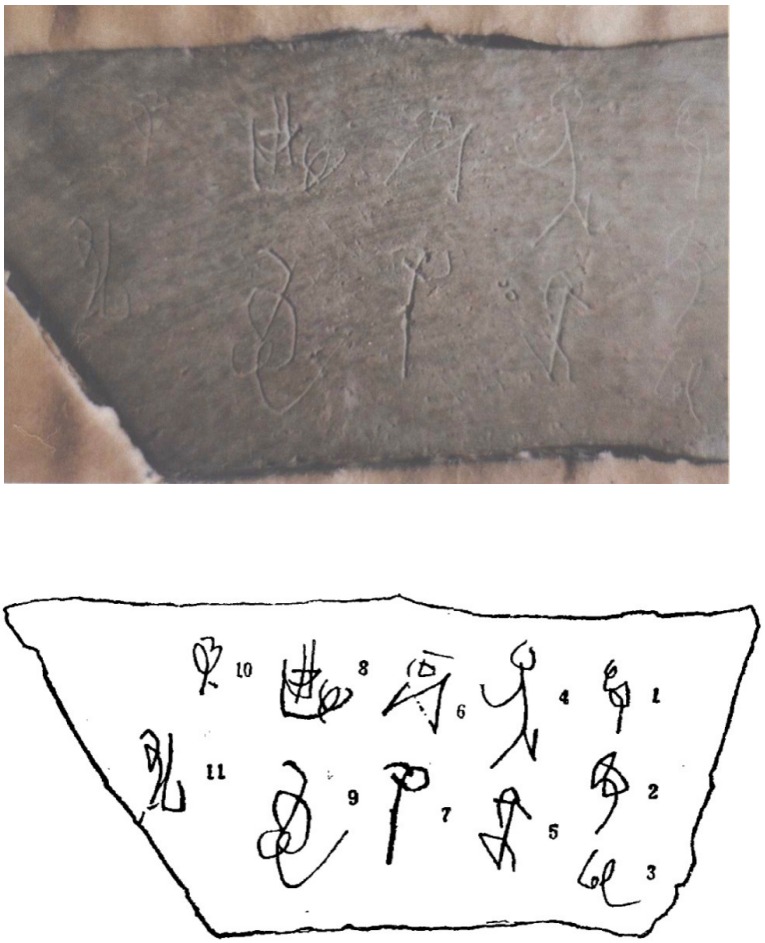


Fig. 3.2-14
Pottery fragment H1235:2, Dīnggōng 丁公
(above: photo;[5] below: drawing[6])

[1] Cáo Dìngyún 曹定雲 1993: 33-34.
[2] Xiāo Wǔ 肖武 1993: 18; Cáo Dìngyún 曹定雲 1993: 35.
[3] Cáo Dìngyún 曹定雲 1993: 35.
[4] Cáo Dìngyún 曹定雲 1993: 36.
[5] Shāndōng dàxué lìshǐxì kǎogǔ zhuānyè 山東大學曆史系考古專業 1993: 300.
[6] Féng Shí 馮時 1994: 38.

On the other hand, most scholars have admitted the authenticity of the fragment H1235:2, and affirmed the accuracy of its stratigraphic context.[1] Fāng Yǒushēng 方酉生 refuted his opponents' viewpoints in detail. Firstly, he argued that the fragment was excavated from ash pit H1235, the stratigraphic context of which was clear. Since all other pottery fragments unearthed from ash pit H1235 all belong to the Lóngshān 龍山 Culture, the fragment H1235:2 was no exception. Moreover, the Dīnggōng 丁公 graphs might belong to a local writing system, and its calligraphic development might probably differ from that of the oracle-bone inscriptions. In addition, it was very likely that the Dīnggōng 丁公 graphs were engraved with bronze instruments, since bronze vessels were widely used in the Lóngshān 龍山 Culture discovered in Shāndōng province.[2]

With regard to the nature of t Dīnggōng 丁公 graphs, most scholars argue that these graphs are "writing" or "proto-writing" (*yuánshǐ wénzì* 原始文字), but no definition of "writing" or "proto-writing" is provided in their works. Their viewpoints can be divided into three groups: In the first group, scholars have argued that the Dīnggōng 丁公 graphs belong to the system of oracle-bone inscriptions for the following reasons:[3] (1) with regard to the graphic form, some of the Dīnggōng 丁公 graphs are similar to oracle-bone signs; (2) like oracle-bone signs, some Dīnggōng 丁公 graphs are pictographic; (3) the Dīnggōng 丁公 graphs and oracle-bone signs have similar forms. Moreover, the cursive writing style is very likely to have been the common form (*sútǐ* 俗體) of writing at that time.[4] As Lǐ Xuéqín 李學勤 has claimed, it was only an attempt to interpret the Dīnggōng 丁公 graphs on the basis of graphic forms and the similarity between these graphs and oracle-bone signs, because whether these graphs are "writing" or are related to oracle-bone inscriptions still needs to be proven. After all, the alleged ancient "writing systems" in China are not necessarily related to oracle-bone inscriptions.[5] Nevertheless, any interpretation without phonetic spellings and a linguistic context is obviously not reliable.

In the second group, scholars have argued that the Dīnggōng 丁公 graphs belong to a writing system that had no direct relationship to oracle-bone

[1] Cài Fèngshū 蔡鳳書 1993 (quote from Cáo Dìngyún 曹定雲 1996: 32); Shāndōng dàxué lìshǐxì kǎogǔ zhuānyè 山東大學曆史系考古專業 1993: 298; Huáng Jǐnglüè 黃景略 1993: 353; Shào Wàngpíng 邵望平 1993: 350; Yán Wénmíng 嚴文明 1993: 346; Yú Wěichāo 俞偉超 1993: 351; Zhāng Zhōngpéi 張忠培 1993: 348; Zhèng Xiàoméi 鄭笑梅 1993: 351; Fāng Yǒushēng 方酉生 1995, 1998; Ráo Zōngyí 饒宗頤 2015: 48. The viewpoint of following scholars: Huáng Jǐnglüè 黃景略, Shào Wàngpíng 邵望平, Yán Wénmíng 嚴文明, Yú Wěichāo 俞偉超, Zhāng Zhōngpéi 張忠培, Zhèng Xiàoméi 鄭笑梅, are included in Zhuānjiā bǐtán Dīnggōng yízhǐ chūtǔ táowén 專家筆談丁公遺址出土陶文, *Kǎogǔ* 考古 (4), 1993: 344-354.

[2] Fāng Yǒushēng 方酉生 1995: 10-11, 1998: 49-53.

[3] Chén Gōngróu 陳公柔 1993: 349; Lǐ Xuéqín 李學勤 1993: 347, 1998; Shāndōng dàxué lìshǐxì kǎogǔ zhuānyè 山東大學曆史系考古專業 1993: 298-299; Tián Chāngwǔ 田昌五 1993: 344; Zhāng Zhōngpéi 張忠培 1993: 348; Wáng Chángfēng 王長豐 2000.

[4] Lǐ Xuéqín 李學勤 1993: 347, 1998: 7; Wáng Chángfēng 王長豐 2000: 162.

[5] Lǐ Xuéqín 李學勤 1993: 347, 1998: 4.

inscriptions,[1] and there are two viewpoints: Wáng Ēntián 王恩田 (AD 1931-2017), Xú Jī 徐基 and Fāng Yǒushēng 方酉生 has claimed that the Dīnggōng 丁公 graphs belonged to the writing system of the Dōngyí 東夷 Culture.[2] However, their discussions are not convincing, because the main basis for their conclusion is that the Dīnggōng 丁公 graphs are quite different from oracle-bone inscriptions in their graphic form and the engraved fragment was excavated from within the distribution range of Dōngyí 東夷 Culture. There is no linguistic evidence to prove that these are "writing", and to be excavated from within the distribution range of the Dōngyí 東夷 Culture does not mean that these graphs must belong to the Dōngyí 東夷 Culture. Moreover, Wáng Ēntián 王恩田 argued that the Dīnggōng 丁公 graphs differed from oracle-bone and bronze inscriptions, but when he interpreted these graphs, he still focused on the similarities between the Dīnggōng 丁公 graphs and bronze inscriptions as well as bamboo manuscripts, which is obviously self-contradictory.[3]

Féng Shí 馮時 (1993,[4] 1994) believed that the Dīnggōng 丁公 graphs had a close relationship to the Ancient Yí 彝 writing (*gǔyíwén* 古彝文).[5] His discussion is not reliable as it was based on the similarities between the Ancient Yí 彝 signs and the Dīnggōng 丁公 graphs. Firstly, except for two examples, most Dīnggōng 丁公 graphs do not resemble the Ancient Yí 彝 signs at all. Moreover, in the absence of phonetic spellings and a linguistic context, the relationship between the Dīnggōng 丁公 graphs and Ancient Yí 彝 writing cannot be proven. In addition, Féng Shí 馮時 argued that the Ancient Yí 彝 writing developed into full writing (*chéngshú wénzì* 成熟文字) during the Eastern Hàn Dynasty (ca. AD 25-220) (but no convincing evidence). However, the Dīnggōng 丁公 graphs date to ca. 2200-2100 BC, which is too far from the Eastern Hàn Dynasty, and two thousand years seem to be too long for the invention and development of a writing system.

On the other hand, Postgate et al. (1995) have argued that "writing" in China first appeared ca. 2500-2000 BC, and that the Dīnggōng 丁公 graphs are among the earliest examples. The cursive style of writing was quite different from any later known writing, such as oracle-bone inscriptions, which, as they alleged, suggests that these graphs might render a different language. Moreover, from their perspective, China was at a transitional stage between

[1] Féng Shí 馮時 1993, 1994; Wáng Ēntián 王恩田 1993: 344; Yú Wěichāo 俞偉超 1993: 351; Xú Jī 徐基 1994: 57; Fāng Yǒushēng 方酉生 1998: 51; Chén Guāngyǔ 陳光宇 2008: 29-30, 2009, 2017: 59.

[2] Dōngyí 東夷 Culture usually refers to cultures in the eastern areas of China in the Prehistoric period and the Xià, Shāng and Zhōu Dynasties (Zhāngkūn 张锟 2010: 6). For more discussions about Dōngyí 東夷 Culture see Zhāng Fùxiáng 張富祥 2008; Páng Zhènhào 逄振鎬 1995, 2007.

[3] Wáng Ēntián 王恩田 1993: 344.

[4] Quote from Fāng Yǒushēng 方酉生 1998: 55.

[5] For more details about *gǔyíwén* 古彝文 see footnote in **3.1.1**.

the Neolithic and the Bronze Age at the start of the 2nd millennium BC, and prototype city-states emerged in the Lóngshān 龍山 Culture period. Thus, it would be no surprise to find an early stage of "writing" in this period. A definition of writing was not provided in their article, but a criterion for differentiating between writing and graphs, or systems of graphs resembling writing, was provided: "Symbols may well perform a similar function to writing, such as making a statement of ownership; the difference is that writing needs always to correspond to a segment of language. Moreover, a writing system is only valid if it communicates".[1] They argue that "writing" renders language, but none of the evidence they provided proves that the Dīnggōng 丁公 graphs are representations of language. Clearly, they have failed to follow their own criterion.

In the third group, scholars have argued that the Dīnggōng 丁公 graphs were "proto-writing" that had not developed into full writing. Gāo Míng 高明 claimed that the Dīnggōng 丁公 graphs belong to the system of oracle-bone inscriptions. From his perspective, in order to find a suitable system for recording Chinese, the ancient Chinese made extensive attempts. They inevitably encountered countless failures during this process, and the Dīnggōng 丁公 graphs are one of these failures.[2] In Qiú Xīguī 裘錫圭's view, after they appeared, some "proto-writing systems" could not develop into full writing due to social or other constraints. These "proto-writing systems" were used by a very small number of people and only on special occasions.[3] However, according to their discussion, it is inappropriate to call the Dīnggōng 丁公 graphs "proto-writing systems", because the term carries with it an expectation that they would in time have developed into full writing, but in fact they did not.

Therefore, no current evidence can prove that the Dīnggōng 丁公 graphs represent language, so they are not writing. Any interpretation without linguistic evidence is unfounded, especially the interpretations based on graphic forms and similarities. As mentioned before, apart from the Dīnggōng 丁公 graphs, the Jiǎhú 賈湖 and the Lóngqiúzhuāng 龙虬莊 graphs are all treated as Ancient Yí 彝 writing by some scholars on the basis of graphic forms and similarities.[4] But if we put these graphs together, it can be easily seen that, from the graphic form alone, these graphs are very different from each other. Obviously, it is highly unlikely that three different kinds of graphs come from the same writing system.

[1] Postgate et al. 1995: 459.
[2] Gāo Míng 高明 1993: 352.
[3] Qiú Xīguī 裘錫圭 1993: 354.
[4] For more details see discussions in **3.1**.

Moreover, some scholars compared the Dīnggōng 丁公 graphs with: (1) four graphs engraved on the pot (*guàn* 罐) found at the Chénghú 澄湖 site in Wúxiàn 吳縣 of Jiāngsū 江蘇 province (**Fig. 3.3-1**),[1] (2) eight graphs engraved on the black pot discovered at Nánhú 南湖 in Yúháng 余杭, Zhèjiāng 浙江 province of the Liángzhǔ 良渚 Culture (**Fig. 3.2-15**); (3) eight graphs on the pot found at the Wúchéng 吳城 site in 清江 Qīngjiāng of Jiāngxī 江西 of the Shāng Culture (**Fig. 3.2-16**).[2] From their perspective, those examples were all graphs engraved in linear sequence in similar size, which may reflect language. But as mentioned earlier in this chapter, a linear sequence and similarity in size are not unique characteristics of writing, as iconography also shares these characteristics. Apart from the linear sequence and similar size, these graphs have nothing in common, so they are not comparable, let alone prove that they are writing in the absence of a linguistic context. The possibility that the Dīnggōng 丁公 graphs are writing or a graphic recording system cannot be ruled out, but obviously, more convincing evidence is needed.

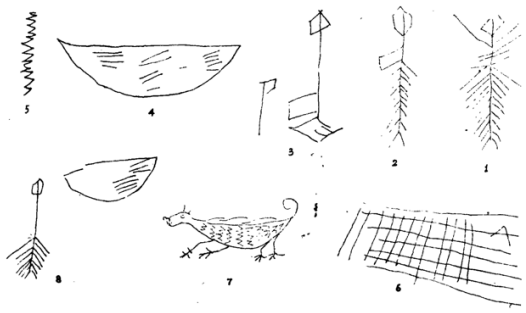


Fig. 3.2-15
Graphs engraved on the black pot, Nánhú 南湖[3]

Fig. 3.2-16 Graphs on the engraved pot, Wúchéng 吳城[4]

[1] For more details see discussions in **3.3**.

[2] Huáng Jǐnglüè 黃景略 1993: 353; Qiú Xīguī 裘錫圭 1993: 354; Tián Chāngwǔ 田昌五 1993: 344-345; Zhāng Zhōngpéi 張忠培 1993: 345.

[3] Yúhángxiàn wénguǎnhuì 余杭縣文管會 1991: 184.

[4] Táng Lán 唐蘭 1975: 76.

3.3 The Yangtze River basin

3.3.1 The Liángzhǔ 良渚 Culture

The Liángzhǔ 良渚 Culture (ca. 3300-2000 BC) was named after the Liángzhǔ 良渚 site found in Yúháng 余杭, Zhèjiāng 浙江 province, the downsteam of the Yangtze River basin. Scholars' studies on the earliest Chinese writing have focused on the engraved pottery discovered at the Chénghú 澄湖 site in Wúxiàn 吳縣 of Jiāngsū 江蘇 province, and jade vessels.

3.3.1.1 The engraved pot

The excavation of Chénghú 澄湖 unearthed an engraved black pot (*guàn* 罐, T129:1; **Fig. 3.3-1**) with four graphs, dating to ca. 2500-2000 BC, and these graphs are engraved after baking.

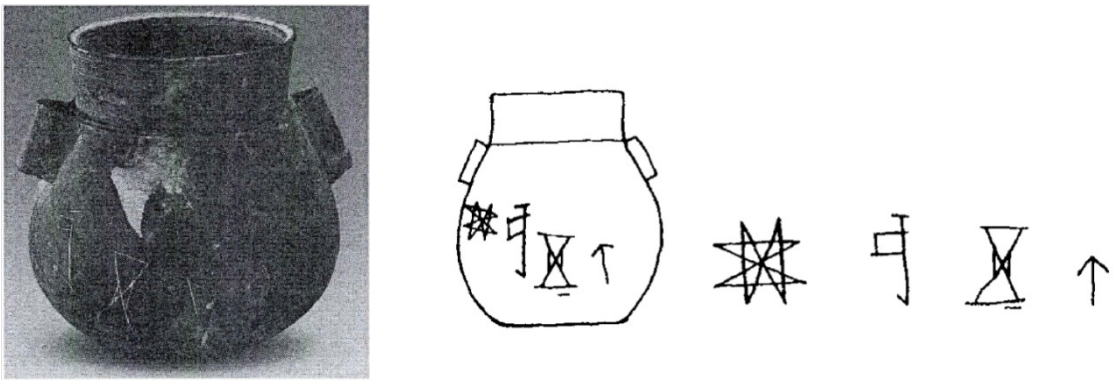


Fig. 3.3-1 Engraved black pot, Chénghú 澄湖 (left: photo;[1] right: drawing[2])

Scholars, such as Zhāng Mínghuá 張明華, Wáng Huìjú 王惠菊, Lǐ Xuéqín 李學勤 and Dǒng Chǔpíng 董楚平 (AD 1934-2014), have argued that the Chénghú 澄湖 graphs are "writing",[3] but again no definition of writing was provided. These scholars have made some interpretations, however, on the basis of graphic forms and the similarities between the Chénghú 澄湖 graphs and oracle-bone signs. They pointed out that the graph  (octagonal star)

[1] Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 2010: figure 32.

[2] Dǒng Chǔpíng 董楚平 2001: 77.

[3] Zhāng Mínghuá 張明華 and Wáng Huìjú 王惠菊 1990: 903-907; Lǐ Xuéqín 李學勤 1994: 7-9; Dǒng Chǔpíng 董楚平 2001: 76-77.

was commonly seen in several late Neolithic cultures, such as the Sōngzé 崧澤, the Língjiātān 淩家灘, and the Xiǎohéyán 小河沿 Culture (**Fig. 3.3-2**).[1]

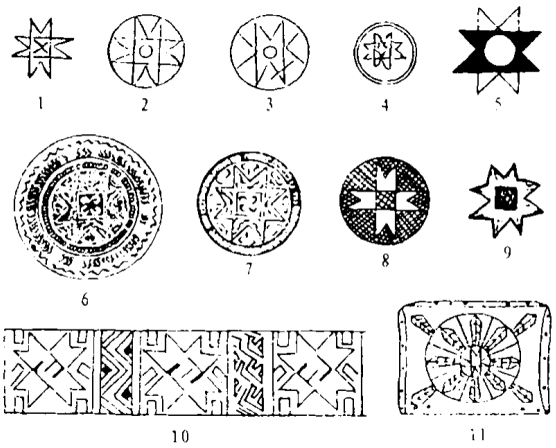


Fig. 3.3-2
The octagonal star graphs of late Neolithic cultures[2]

1-4. The Sōngzé 崧澤 Culture
5 & 9. The Dàwènkǒu 大汶口 Culture
6 & 7. The Dàxī 大溪 Culture
8. The Mǎjiāyáo 馬家窑 Culture
10. The Xiǎohéyán 小河沿 Culture
11. The Língjiātān 淩家灘 Culture

Lǐ Xuéqín 李學勤 argued that the OCTAGONAL_STAR might be related to the oracle-bone sign **C.m(r)[o]* 𠂤 'the name of a deity' (*wū* 巫).[3] Dǒng Chǔpíng 董楚平 argued that every two angles of the octagonal star pointed in the same direction, so the OCTAGONAL_STAR indicated all four directions, that is, east, south, west and north. He transliterated the OCTAGONAL_STAR as 𠂤, but followed Allan in interpreting it as *fāng* 方,[4] which means "four directions".[5]

With respect to the graph  , scholars have argued that this graph was similar to the oracle-bone sign **s.mi[t]* 𠦂 'a kind of axe-like weapon' (*xū* 戌). Its graphic form is the same as the jade vessel (*yuè* 鉞) of Liángzhǔ 良渚 Culture (**Fig. 3.3-3**), so it should be interpreted as *yuè* 鉞 'a kind of axe-like weapon, but larger in size'.[6] Dǒng Chǔpíng 董楚平 further claimed that *yuè* 鉞 was a symbol of military power, which is equal to political power, thereby making *yuè* 鉞 a symbol of the country.

[1] Zhāng Mínghuá 張明華 and Wáng Huìjú 王惠菊 1990: 904; Lǐ Xuéqín 李學勤 1994: 8; Dǒng Chǔpíng 董楚平 2001: 76.
[2] Dǒng Chǔpíng 董楚平 2001: 77.
[3] Lǐ Xuéqín 李學勤 1994: 7-9.
[4] Allan 1992: 85-93.
[5] Dǒng Chǔpíng 董楚平 2001: 76.
[6] Zhāng Mínghuá 張明華 and Wáng Huìjú 王惠菊 1990: 904; Lǐ Xuéqín 李學勤 1994: 9; Dǒng Chǔpíng 董楚平 2001: 76.

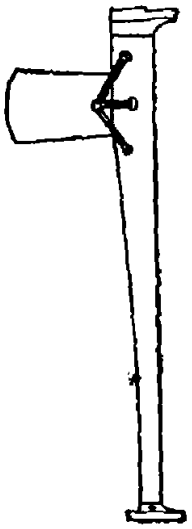


Fig. 3.3-3
The jade vessel (*yuè* 鉞) of the Liángzhǔ 良渚 Culture[1] (left)

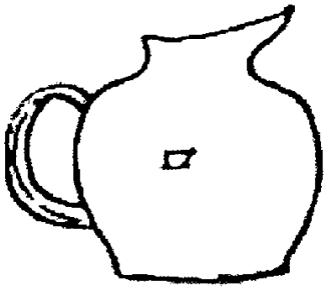


Fig. 3.3-4
The engraved pottery vessel *hé* 盉, Chénghú 澄湖[2] (right)

With regard to the graph  , Zhāng Mínghuá 張明華 et al. and Lǐ Xuéqín 李學勤 agured that it had close relationship to the oracle-bone sign **C.ŋʕaʔ* 𝌢 (*wǔ* 五) 'five'.[3] Dǒng Chǔpíng 董楚平 argued that, since it depicts the intersection of two lines, it should be interpreted as *huì* 會 'convergence, intersection'.[4] In terms of the graph  , Táng Lán 唐蘭 argued that it was the prototype of sign *yú* 俞 'a boat made from hollowed tree trunks',[5] which was written as  and  in bronze inscriptions. In his view,  was the prototype of sign *zhōu* 舟 'boat', and was the tool for cutting wood.[6] Zhāng Mínghuá 張明華 et al. and Lǐ Xuéqín 李學勤 simply followed this opinion,[7] while Dǒng Chǔpíng 董楚平 argued that the graph is similar to the oracle-bone sign **l i[j]ʔ* 'arrow' (*shǐ* 矢). Since the arrow was the most commonly used weapon at that time, it could be a symbol of military power.[8]

[1] Zhāng Mínghuá 張明華 and Wáng Huìjú 王惠菊 1990: 904.
[2] Zhāng Mínghuá 張明華 and Wáng Huìjú 王惠菊 1990: 904.
[3] Zhāng Mínghuá 張明華 and Wáng Huìjú 王惠菊 1990: 904; Lǐ Xuéqín 李學勤 1994: 9.
[4] Dǒng Chǔpíng 董楚平 2001: 76.
[5] Tāng Kějìng 湯可敬 2018: 1222.
[6] Táng Lán 唐蘭 1975: 74.
[7] Zhāng Mínghuá 張明華 and Wáng Huìjú 王惠菊 1990: 904; Lǐ Xuéqín 李學勤 1994: 9.
[8] Dǒng Chǔpíng 董楚平 2001: 77.

However, their interpretations are not convincing. Firstly, even if the graphs  and  were depictions of a jade vessel (*yuè* 鉞) and arrow, it cannot be inferred that these graphs represent the same things as oracle-bone signs, nor is it clear that they represent language at all. Moreover, they read the Chénghú 澄湖 graphs as *wū yuè wǔ ǒu* 巫鉞五偶 'five pairs of jade vessels used by the deity',[1] or *fāng Yuè huì shǐ* 方鉞會矢 'alliance of the country Yuè 鉞', but no other similar examples can be found in contemporary or later literature.

Another engraved pottery vessel (*hé* 盉, T 22:5) with one graph was also found at Chénghú 澄湖 (**Fig. 3.3-4**).[2] Zhāng Mínghuá 張明華 and Wáng Huìjú 王惠菊 have claimed that the graph  was a pictograph for the sign *hé* 盉, which names a type of pottery vessel.[3] This interpretation was used as a supporting example for the claim that the graph was a pictograph for the sign *yuè* 鉞. But if this were the case, the name of a jade vessel would not be expected on a pottery vessel.

In addition, the Chénghú 澄湖 graphs are engraved in linear sequence in similar size, which may reflect language, but as mentioned earlier in this chapter, a linear sequence and similarity in size are not unique characteristics of writing, as iconography also shares these characteristics. The possibility that the Chénghú 澄湖 graphs are writing or a graphic recording system cannot be ruled out, but obviously, more convincing evidence is needed.

3.3.1.2 Engraved graphs on jade vessels

Engraved graphs of the Liángzhǔ 良渚 Culture on jade vessels (*cóng* 琮 and *bì* 璧) (**Fig. 3.3-5**) have drawn scholars' great attention. Since G. Gieseler (Jí Sīlā 吉斯拉) first published a jade vessel (*cóng* 琮) of the Liángzhǔ 良渚 Culture in 1915,[4] so far 15 engraved jade vessels have been discovered, and two of these are fragments.[5] The vast majority of these jade vessels have been handed down. But the jade vessel (*bì* 璧) unearthed at Ānxī 安溪 of Zhèjiāng 浙江 province in 1990[6] and two fragments of jade vessel (*bì* 璧) excavated at Shàoqīngshān 少卿山 in 1997[7] are strong evidence that these handed-down jade vessels belong to the Liángzhǔ 良渚 Culture.

[1] Lǐ Xuéqín 李學勤 1994: 9.
[2] Zhāng Mínghuá 張明華 and Wáng Huìjú 王惠菊 1990: 904.
[3] Zhāng Mínghuá 張明華 and Wáng Huìjú 王惠菊 1990: 904.
[4] Gieseler 1915: 132.
[5] Niú Qīngbō 牛清波 2013: 203-204.
[6] Zhèjiāngshěng wénwù kǎogǔ yánjiūsuǒ 浙江省文物考古研究所 2005: 47.
[7] Wáng Huájié 王華傑 and Zuǒ Jùn 左駿 2009: 79-80.

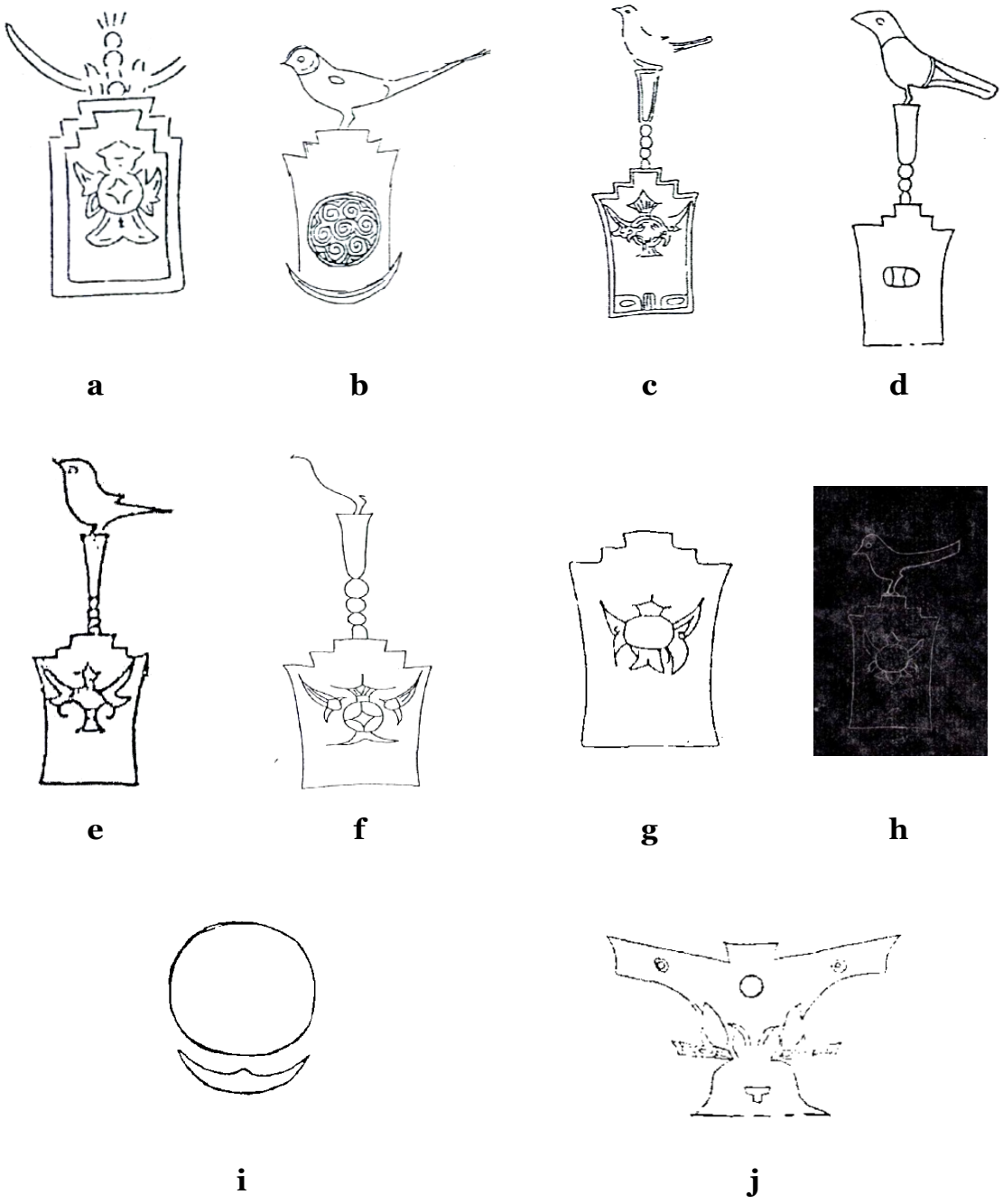


Fig. 3.3-5 Engraved graphs on jade vessels of the Liángzhǔ 良渚 Culture

a. *cóng* 琮 of G. Gieseler;
b, c & d. *bì* 璧 of The Freer Gallery of Art, USA;
c. *cóng* 琮 of Shǒudū bówùguǎn 首都博物馆, China;
f. *bì* 璧 of National Palace Museum, Taiwan, China;
g. *bì* 璧 of Zhèjiāng Ānxī 浙江安溪
h. *bì* 璧 of Liángzhǔ bówùguǎn 良渚博物馆, China
i. & j. *zhuó* 鐲 of The Freer Gallery of Art, USA

Scholars argued that the engraved graphs on jade vessels were related to the origin of Chinese writing,[1] and Lǐ Xuéqín 李學勤 was representative of them. His discussions were mainly based on graphic forms. For example, in his view, the graph on the jade vessel (*bì* 璧) of The Freer Gallery of Art (**Fig. 3.3-5b**) was a combination of two graphs and could be interpreted as the sign *dǎo* 島 'island', which depicted a bird (*niǎo* 鳥) standing on a mountain (*shān* 山) , and the sign *jiǒng* 炅 'sunlight; lightness',[2] which consisted of *rì* 日 'sun' and *huǒ* 火 'fire'.[3] Another graph on the jade vessel of The Freer Gallery of Art (**Fig. 3.3-5d**) was similarly interpreted by him as a combination of four signs: *niǎo* 鳥 'bird', *jué* 玨 'two pieces of jade combined together',[4] *shān* 山 'mountain', and *mù* 目 'eye', because the graph depicted these objects.[5] Clearly, an interpretation on the basis of graphic form is not reliable. In the absence of phonetic spellings and a linguistic context, the relationship between the engraved graphs on jade vessels and Chinese signs cannot be proven. It also cannot demonstrate that these graphs represent language at all.

From my perspective, the worship of the sun god and bird is a reasonable speculation about the meaning and function of the engraved graphs on these jade vessels.[6] Most of these graphs include a bird and a sun with wings (the so-called *yǒuyì tàiyáng* 有翼太陽). Scholars have argued that the Liángzhǔ 良渚 Culture worshiped the bird, which could fly with the sun on its back. This sacred bird, known as the *yángniǎo* 陽鳥 (the sun bird) and regarded as the incarnation of the sun god, has its origin in the legend of the sun bird, and relevant records can be found in, such as, the *Shānhǎijīng* 山海經 and *Huáinánzǐ* 淮南子.[7] Moreover, like the Dàwènkǒu 大汶口 graphs, the SUN_BIRD might have been emblem of ownership or identity.[8] The SUN_BIRD stood in the prominent central position of jade vessels, which was matched by the emblems on Shāng bronzes a few centuries later that are generally taken as clan-name insignia. In Boltz's opinion, the Shāng clan-name insignia were clearly different from oracle-bone signs. Although they co-existed alongside the Shāng writing system, they stood apart from the script and do not

[1] Postgate et al. 1995: 468; Lǐ Xuéqín 李學勤 1995: 53-75, 2003: 40; Chén Guāngyǔ 陳光宇 2008: 30, 2017b: 59.

[2] Zhōngguó shèhuì kēxuéyuàn yǔyán yánjiūsuǒ cídiǎn biānjíshì 中國社會科學院語言研究所詞典編輯室 2016: 696.

[3] Lǐ Xuéqín 李學勤 2007: 61.

[4] Zhōngguó shèhuì kēxuéyuàn yǔyán yánjiūsuǒ cídiǎn biānjíshì 中國社會科學院語言研究所詞典編輯室 2016: 713.

[5] Lǐ Xuéqín 李學勤 2007: 62.

[6] Wáng Shìlún 王士倫 1990: 26-28; Zhāng Mínghuá 張明華 1990: 36; Zhāng Mínghuá 張明華 and Wáng Huìjú 王惠菊 1990: 906; Dù Jīnpéng 杜金鵬 1997: 54-57; Ráo Zōngyí 饒宗頤 2009: 57-69, 75-83.

[7] Dù Jīnpéng 杜金鵬 1997: 54-57. For more details see discussions in **3.2**. *Shānhǎijīng* 山海經, generally translated as *The Classic of Mountains and Seas*, is compilation of mythic geography and beasts of China, consisting of 18 volumes. According to the traditional Chinese datings, the earliest version may have existed since as early as the 4th century BC, but is probably a Hàn text and certainly, although it may contain genuine pre-Qín materials. *Huáinánzǐa* 淮南子 is a collection of philosophical essays of West Hàn Dynasty, which blends Daoist, Confucianist, and Legalist concepts.

[8] Keightley 1989:197, 2006: 177-180; Boltz 1994: 46-48.

represent words or names but are decorative emblems.[1] Inspired by the *Zuǒ Zhuàn* 左傳,[2] scholars have also argued that the SUN_BIRD might be a title of an official.[3] From their perspective, since the Liángzhǔ 良渚 Culture worshiped a bird deity and lacked a scientific view of nature, they connected unexplainable natural phenomena with bird deities and equaled these deities with official positions. Thus, these graphs are the official titles of these bird deities.

[1] For more details see discussions in **3.2**.
[2] For *Zuǒ Zhuàn* 左傳 see footnote in **1.1.2**.
[3] Zhāng Mínghuá 張明華 1990: 36; Zhāng Mínghuá 張明華 and Wáng Huìjú 王惠菊 1990: 906; Chén Guāngyǔ 陳光宇 2008: 30.

3.4 The Xià and Early Shāng Culture

With regard to the Xià and Early Shāng Culture, scholars' studies have concentrated on the Èrlǐtóu 二裏頭 of Xià Culture, the Èrlǐgǎng 二裏崗 and the Xiǎoshuāngqiáo 小雙橋 of Early Shāng Culture.

3.4.1 二裏頭 Èrlǐtóu of the Xià Culture

The Èrlǐtóu 二裏頭 site of Xià Culture is located in Yǎnshī 偃師 of Hénán province, dating to 1900 BC- 1500 BC. The excavation of the site, carried out from 1959 to 1978, unearthed over fifty engraved graphs. The interpretation of some graphs (**Fig. 3.4-1**) is still under debate. Scholars, such as Gāo Wěi 高煒, Cáo Dìngyún 曹定雲 and Lǐ Wéimíng 李維明, argue that these 二裏頭 Èrlǐtóu graphs are "writing" (but a definition of writing is not provided).[1] Their readings are all based on their graphic forms and the similarity between these graphs and oracle-bone signs. For example, Cáo Dìngyún 曹定雲 interpret graph  as oracle-bone sign **l i[j]ʔ*  'arrow' (*shǐ* 矢) and  as **mraŋʔ*  'vessel; shallow container' (*mǐn* 皿).[2]

However, readings based on the similarity between these Èrlǐtóu 二裏頭 graphs and the oracle-bone signs are obviously not reliable. Although there is evidence that the system of oracle-bone inscriptions was already invented by Èrlǐgǎng 二裏崗 of the Early Shāng Culture (Early Shāng, ca. 1600-1400 BC),[3] and Èrlǐgǎng 二裏崗 is the descendant of Èrlǐtóu 二裏頭 of the Xià Culture, the relationship between these Èrlǐtóu 二裏頭 graphs and the oracle-bone inscriptions still cannot be proven without phonetic evidence and linguistic context. The Èrlǐtóu 二裏頭 graphs are more likely to be potters' marks. As Gāo Wěi 高煒 argues, the graphs were engraved when people used them, so the graphs are not for decoration but for marking. It is very likely that these pottery vessels were used in public places, and people made markings to differentiate users.[4]

[1] Gāo Wěi 高煒 2003: 125-126; Cáo Dìngyún 曹定雲 2004; Lǐ Wéimíng 李維明 2012.
[2] 曹定雲 Cáo Dìngyún 2004: 82.
[3] For more details see discussions in **3.4.2**.
[4] Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2003: 125-126.

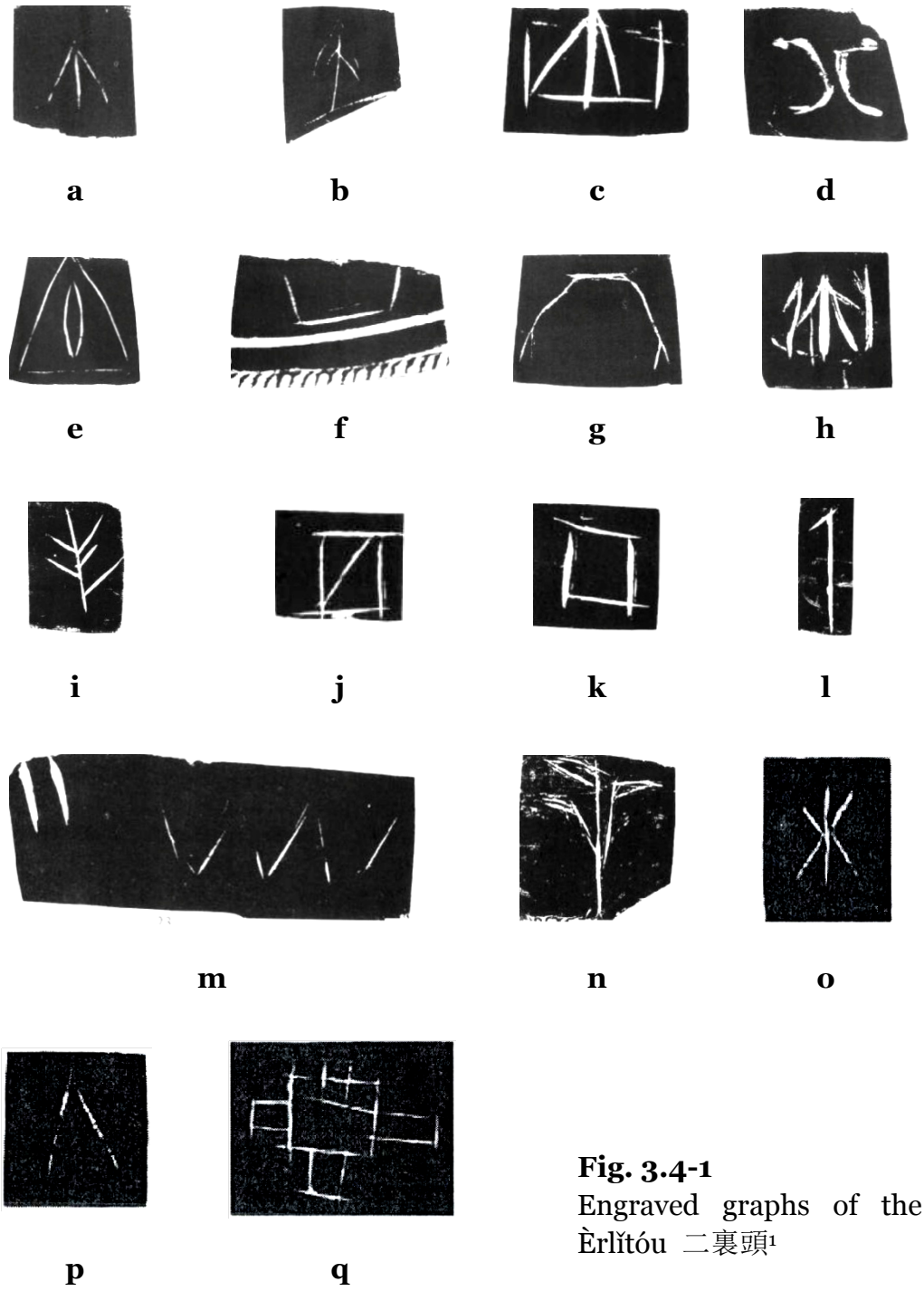


Fig. 3.4-1
Engraved graphs of the Èrlǐtóu 二裏頭[1]

[1] Rubbings 1-9: Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 1999: 203; Rubbings 10-14: Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 1999: 304; Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ 中國科學院考古研究所 2010: 126.

3.4.2 Èrlǐgǎng 二裏崗 of the Early Shāng Culture

The Èrlǐgǎng 二裏崗 site of the Early Shāng Culture is located in Zhèngzhōu 鄭州 of Hénán province. The excavation carried out in 1953 unearthed about twenty engraved pottery fragments and two engraved bones. Scholars has paid great attention to the engraved bones (**Fig. 3.4-2**).

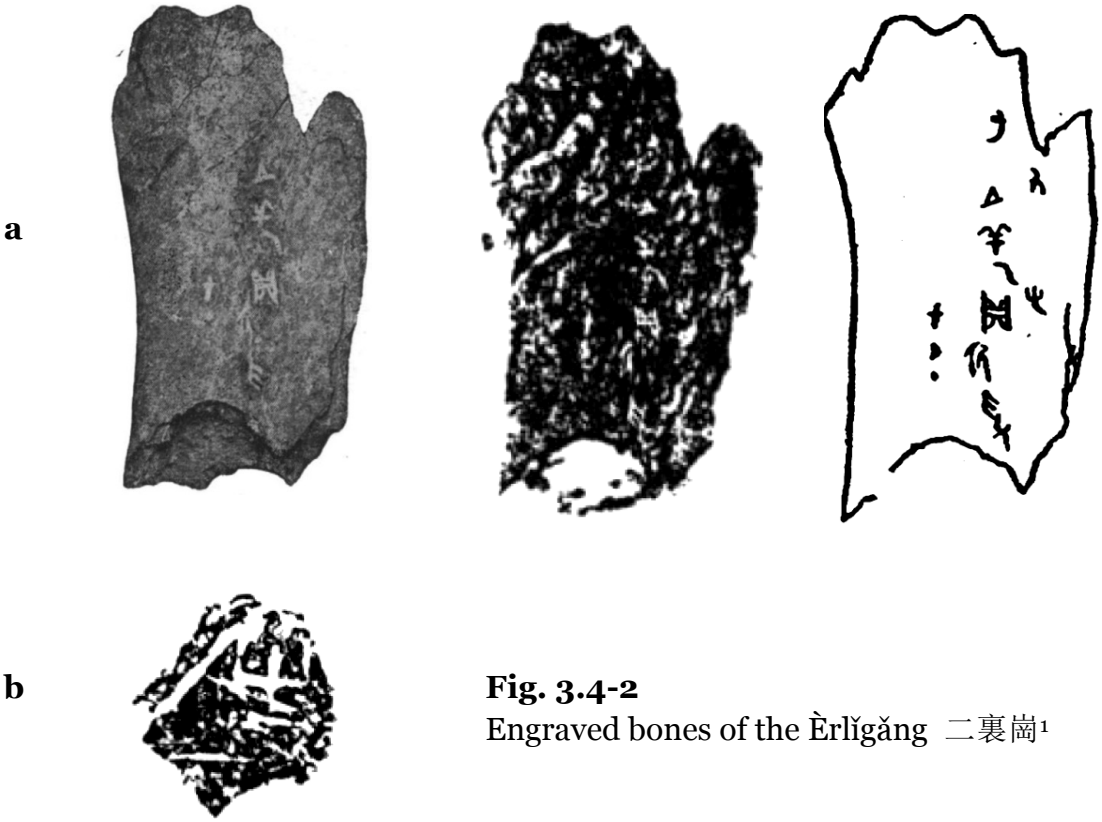


Fig. 3.4-2
Engraved bones of the Èrlǐgǎng 二裏崗[1]

Chén Mèngjiā 陳夢家 argues that there are 10 signs on the bone,[2] and the signs are interpreted as follows: 又土羊乙中貞从受十月.[3] Lǐ Xuéqín 李學勤 interprets these signs as:[4]

又土羊
乙丑貞: 从受……
七月

[1] Photo: Hénánshěng wénhuàjú wénwù gōngzuòduì 河南省文化局文物工作隊 1959: photo 16. Rubbing: Hénánshěng wénhuàjú wénwù gōngzuòduì 河南省文化局文物工作隊 1959: figure 30-25. Drawing: Hénánshěng wénhuàjú wénwù gōngzuòduì 河南省文化局文物工作隊 1959: 38.

[2] Chén Mèngjiā 陳夢家 1954: 6, 1956: 27; 1988: 27.

[3] Zhào Quángǔ 趙全嘏 1953 (quote from Gě Yīnghuì 葛英會 2007: 96; Zhèng Jiéxiáng 鄭傑祥 2008: 80).

[4] Lǐ Xuéqín 李學勤 1956: 17 (quote from Lǐ Wéimíng 李維明 2003, 2006, 2007: 91; Gě Yīnghuì 葛英會 2007: 96; Cháng Yùzhī 常玉芝 2007:96).

Later studies have followed their interpretations with subtle modifications.[1] However, Lǐ Wéimíng 李維明 in 2003 pointed out that the sign 𠂇 has been neglected by previous scholars, so there are in fact 11 signs on the bone, which has reached consensus among most scholars. On this basis, the engraved signs are interpreted by various scholars as follows:

15.

(1) Lǐ Wéimíng 李維明 (2003, 2006)

又
毛土羊乙丑貞从受
七月

[The diviner] conducted the sacrifice of *yòu* 又 (侑) with a sheep (*yáng* 羊) to 毛土 (*shè* 社), and tested the results of the sacrifice on *Yǐchǒu* 乙丑 (the second day of *gānzhī*cycle) of *Qīyuè* 七月 (the 7th lunar month).[2]

Lǐ Wéimíng 李維明 (2007: 94)

又
毛土羊乙丑貞从（比）孚（俘）
七月

/

(2) Zhèng Jiéxiáng 鄭傑祥 (2005: 6-7, 2008: 81-82)

乙丑貞：从受……七月
又，毛土，羊。

On *Yǐchǒu* 乙丑 (the second day of *gānzhī* cycle) of *Qīyuè* 七月 (the 7th lunar month), the diviner divined that lead *shòu* 受…

[The diviner] conducted the sacrifice of *yòu* 又 (侑) with dismembered sheep (*yáng* 羊) to gods of land and grain (*tǔ* 土).[3]

(3) Gě Yīnghuì 葛英會 (2007: 97)

乙丑貞：从受……
七月。
又
毛土羊。

/

[1] Hénánshěng wénhuàjú wénwù gōngzuòduì 河南省文化局文物工作隊 et al. 1959: 38; Yáng Yùbīn 楊育彬 1985: 106; Lǐ Xuéqín 李學勤 2001: 3.

[2] Lǐ Wéimíng 李維明 argues that yòu 又(侑) is the name of the sacrifice, and 毛土 (shè 社) refers to the area where sacrifices were conducted.

[3] Zhèng Jiéxiáng 鄭傑祥 claims that shòu 受 may probably be a person's name, and tuō 毛 refers to the dismemberment of sacrificed animals or humans.

(4) Cháng Yùzhī 常玉芝 (2007: 99-100)

乙丑貞：及孚。七月。
□□[貞]：又𠂤土羊。

Divining on *Yǐchǒu* 乙丑 (the second day of *gānzhī* cycle) of *Qīyuè* 七月 (the 7th lunar month): should [we] capture (*jí* 及) enemies (*fú* 孚) to sacrifice?

□□[divined]: should [we] conduct the sacrifice of *yòu* 又 (侑) with a sheep (*yáng* 羊) to *tǔ* 土 (*shè* 社) at *tuō* 𠂤 (亳 bó)?[1]

Although scholars still hold different views on the interpretation of some signs and the punctuation of the inscriptions, *Yǐchǒu zhēn* 乙丑貞 and *Qīyuè* 七月 are considered secure interpretations. These signs have the same graphic form and syntactical structure as the oracle-bone inscriptions of the Late Shāng period. *Yǐchǒu zhēn* 乙丑貞 and *Qīyuè* 七月 indicate that the divination (*zhēn* 貞 'to divine') was conducted on *Yǐchǒu* 乙丑 'the second day of *gānzhī* cycle' of *Qīyuè* 七月 'the 7th lunar month'.

On this basis, it can be determined that the oracle-bone system had already been invented by Early Shāng period (ca. 1600-1400 BC). Firstly, although the engraved bone was discovered at Èrlǐgǎng 二裏崗 without information on the pertinent archaeological stratum, in which the bone was discovered, remains of the Èrlǐgǎng 二裏崗 period as well as of the Hàn and Táng Dynasty were found, while no remains from the Late Shāng period were found. So the engraved bone is a product of Èrlǐgǎng 二裏崗.[2] Moreover, another engraved bone bearing one sign was also found at Èrlǐgǎng 二裏崗,[3] which indicates that the engraved bone (bearing 11 signs) is not an isolated instance at Èrlǐgǎng 二裏崗. The only sign on the bone has the same graphic form as the oracle-bone sign **[ɢ]ʷəʔ* 𠂤 'have; exist' (*yǒu* 𠂤).[4] Lǐ Xuéqín 李學勤 argues that this small engraved bone is not an oracle bone but a label of goods. The

[1] Cháng Yùzhī 常玉芝 believes that *tǔ* 土 (*shè* 社) refers to the area to conduct sacrifices, and *tuō* 𠂤 refers to the city of *bó* 亳.

[2] Péi Míngxiàng 裴明相 1985: 251 (quote from Lǐ Xuéqín 李學勤 2001: 2, 2009: 15-16; Zhèng Jiéxiáng 鄭傑祥 2005: 5, 2008: 81; Chén Xù 陳旭 and Xú Zhāofēng 徐昭峰 2006：59; Lǐ Wéimíng 李維明 2006, 2007: 91; Cháng Yùzhī 常玉芝 2007: 96; Wáng Yùnzhì 王蘊智 2010: 46-47), Lǐ Xuéqín 李學勤 2001: 2, 2009: 15-16; Zhèng Jiéxiáng 鄭傑祥 2005: 5, 2008: 81; Chén Xù 陳旭 and Xú Zhāofēng 徐昭峰 2006：59; Lǐ Wéimíng 李維明 2006, 2007: 91; Cháng Yùzhī 常玉芝 2007: 96； Wáng Yùnzhì 王蘊智 2010: 46-47.

[3] Chén Mèngjiā 陳夢家 1954: 6, 1956: 27, 1988: 27; Péi Míngxiàng 裴明相 1985; Lǐ Xuéqín 李學勤 2001: 3; 2009: 16; Zhèng Jiéxiáng 鄭傑祥 2008: 80; Wáng Yùnzhì 王蘊智 2010: 46.

[4] The sign *yǒu* 𠂤 in some oracle-bone inscriptions also represent a kind of ritual ceremony and the pronunciation in this case cannot be sure.

sign on the bone, as he alleged, may be the name of a place or a clan.[1] Furthermore, although the signs on the engraved bones are quite similar in graphic forms to the oracle-bone signs of Late Shāng, they still have slight differences. For example, the sign *yáng* 羊 on the Èrlǐgǎng 二裏崗 engraved bone is written as  , but it is written as  (H 713) and  (H 20680) in Late Shāng oracle-bone inscriptions.

3.4.3 The Xiǎoshuāngqiáo 小雙橋 site of the Early Shāng Culture

The Xiǎoshuāngqiáo 小雙橋 site of the Early Shāng Culture is located in Zhèngzhōu 鄭州 of Hénánshěng province, dating to 1435-1412 BC (the dating of which may well be too precise).[2] The excavation conducted from 1995 to 2000, unearthed 17 pieces of pottery fragments bearing graphs written in vermilion (*zhūshū* 朱書) (**Fig. 3.4-3**).

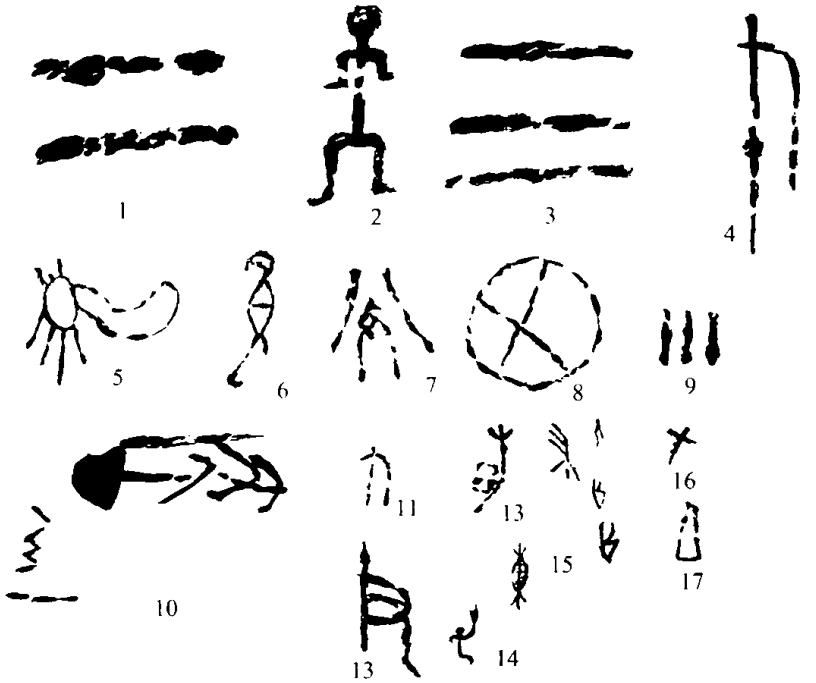


Fig. 3.4-3
Panited graphs on the clay pots of Xiǎoshuāngqiáo 小雙橋[3]

Like most scholars, I tend to argue that these painted graphs belong to the same writing system as the oracle-bone and bronze inscriptions.[4] Firstly, the

[1] Lǐ Xuéqín 李學勤 2001: 3, 2009: 16.

[2] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 2012: 735.

[3] Hé Zhēng 何峥 2011: 443.

[4] Sòng Guódìng 宋國定 2003: 44, 2012: 709[4]; Cáo Jiàndūn 曹建敦 2006: 35; Huáng Dékuān 黃德寬 2006a: 10, 2006b: 19; Hé Zhēng 何峥 2011: 448; Haicheng Wang 2014: Plate VI & 275, 2015: 132-133.

painted graphs of Xiǎoshuāngqiáo 小雙橋 have the same (or similar) graphic form as the oracle-bone and bronze signs. As one of the excavators, Sòng Guódìng 宋國定 gives a detailed account of the excavation information for these painted graphs.[1] He interprets most of these graphs on the basis of their graphic form and the similarities between these graphs and oracle-bone and bronze signs. Most of these graphs have been interpreted by him (**Fig. 3.4-4**).[2] Some scholars, such as Cáo Jiàndūn 曹建敦 and Hé Zhēng 何峥 follow his opinion with small modifications,[3] and some, such as Haicheng Wang and Huáng Dékuān 黄德寬, follow him with no further explanation.[4] Wang argues that these graphs are the earliest examples of writing in China, dating to the 14th century BC. Although these scholars still hold differing views on the interpretation of some graphs, they are in agreement on the interpretation of *èr* 二, *sān* 三, *dōng* 東, *tiān* 天, *zhǒu* 帚, *xún* 旬, *yǐn* 尹, *rén* 人.

Secondly, there are two pottery fragments bearing more than one graph: 96ZXIVH165:1 (two graphs) (**Fig. 3.4-5**) and 95ZXVH43:21 (three or four graphs) (**Fig. 3.4-6**). Although the graph  on 96ZXIVH165:1 and graph  on 95ZXVH43:21 cannot be securely interpreted, these two sequences would reflect patterns of language, with the probable presence of syntax and language-dependent word order.

Moreover, the Xiǎoshuāngqiáo 小雙橋 (ca. 1435-1412 BC) pertains to the Early Shāng Culture. Since the oracle-bone system had already been invented by the Early Shāng period (ca. 1600-1400 BC),[5] it is very likely that the Xiǎoshuāngqiáo 小雙橋 graphs, which have the same (or similar) graphic form as the oracle-bone and bronze signs, belong to the same writing system as the oracle-bone and bronze inscriptions.

In addition, according to the excavation report, all these graphs are written on pottery vessels (*gāng* 缸), and these pottery fragments bearing graphs are all excavated from the sacrificial pits of Xiǎoshuāngqiáo 小雙橋.[6] This means that these pottery vessels are probably for ritual activities, and the graphs on these vessels may have a similar function as Shāng oracle-bone and bronze inscriptions. The pottery vessels bearing graphs can be divided into two types on the basis of size: large and small. The vessels bearing more than one graph are all small ones, and the graphs are all written on the flat outer surface of

[1] Sòng Guódìng 宋國定 2003: 36-43, 2012: 712-715 (that is, Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 2012: 712-715).
[2] Sòng Guódìng 宋國定 2003: 42, 2012: 714-715, 779 (that is, Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 2012: 714-715, 779).
[3] Cáo Jiàndūn 曹建敦 2006: 35-38; Hé Zhēng 何峥 2011: 444-448.
[4] Haicheng Wang 2014: Plate VI & 275, 2015: 132-133; Huáng Dékuān 黄德寬 2006a: 10, 2006b: 19.
[5] For more details see discussions in **3.4.2**.
[6] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 2012: 709-711.

vessels. It can be inferred that these large and small vessels may play different roles in ritual activities.

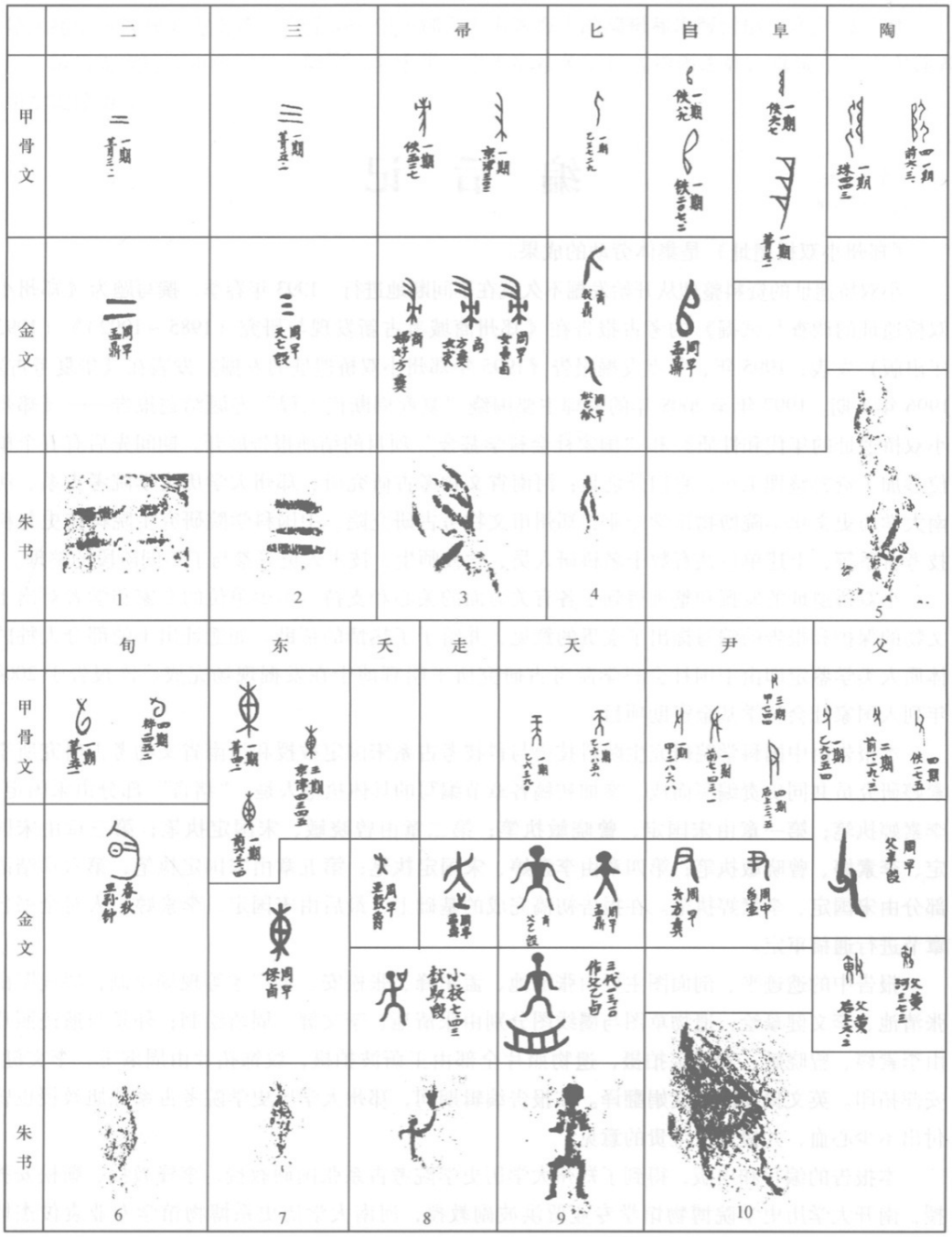


Fig. 3.4-4 Graphs written in vermilion (*zhūshū* 朱書) on the clay pots of Xiǎoshuāngqiáo 小雙橋 in comparison with oracle-bone inscriptions and bronze inscriptions[1]

[1] Sòng Guódìng 宋國定 2003: 42; Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 2012: 775.

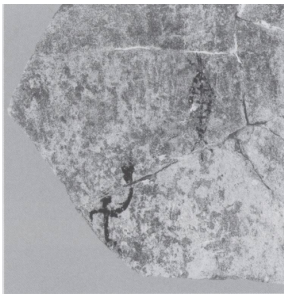


Fig. 3.4-5
Pottery fragment 96ZXIVH165:1 (left)[1] and its text (above),[2] Xiǎoshuāngqiáo 小雙橋

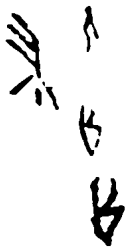


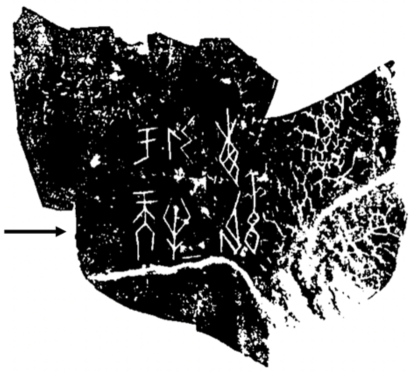
Fig. 3.4-6
Pottery fragment 95ZXVH43:21 (left)[3] and its text (above),[4] Xiǎoshuāngqiáo 小雙橋

With regard to the meaning of these graphs, a reasonable speculation is that some of them are clan names.[5] Sòng Guódìng 宋國定 first offered this opinion without further explanation. Scholars, such as Huáng Dékuān 黃德寬 and Haicheng Wang, simply followed his opinion. Only Cáo Jiàndūn 曹建敦 discusses this viewpoint in detail. He argues that the graphs  (99ZXIVH101:1),  (96ZXIVH165:1),  (97ZXIVH81:1) and  (96ZXIVH165:1) are all clan names,[6] which can be interpreted as *Tiān* 天, *Dōng* 東, *Yǐn* 尹 and *Wú* 吳. Discussions of each graph are supported by several examples of oracle-bone and bronze inscriptions. For example, the graph  is quite similar to the oracle-bone (and bronze sign) **ˌlˤi[n]*  (*tiān* 天) in graphic form. The sign *tiān* 天 has four meanings in oracle-bone

[1] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 2012: colour photo 28-2.
[2] Hé Zhēng 何峥 2011: 443.
[3] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 2012: colour photo 30-1.
[4] Hé Zhēng 何峥 2011: 443.
[5] Sòng Guódìng 宋國定 2003: 39-43, 2012: 712-715[5]; Cáo Jiàndūn 曹建敦 2006: 35-36; Huáng Dékuān 黃德寬 2006a: 10, 2006b: 19; Haicheng Wang 2014: Plate VI & 275, 2015: 132-133.
[6] 96ZXIVH165: 1 and 97ZXIVH81: 1 are wrong labeled as 95ZXIVG3: 62 and 99zxivh100: 17 in Cáo Jiàndūn 曹建敦 2006.

inscriptions: (1) the top of a man's head, (2) large in size or quantity, (3) the name of a place or an affiliated state, and (4) a person's name;[1] and three meanings in bronze inscriptions: (1) the God, (2) the name of a clan, and (3) a surname.[2]

Moreover, in the pre-Qín period, the name of a clan was usually derived from the place where it was located. For example, the oracle-bone inscription on T 2241 is an inquiry about making sacrifice at *Tiān* 天 (where the *Tiān* 天 clan lives) (**Fig. 3.4-7**).



16.

叀禦𠂤牛于天？

Wéi yù yǐn niú yú tiān?

Should [the king] offer a *yù* 禦 sacrifice with [a] splitted cattle at tiān 天?

Fig. 3.4-7 An Oracle-bone inscription about the clan *tiān* 天

There are also extensive examples of *tiān* 天 used as a clan name in bronze inscriptions of the Shāng Dynasty (**Fig. 3.4-8**).[3]

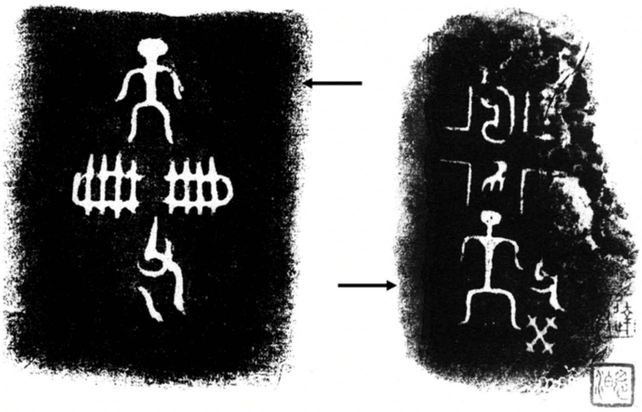


Fig. 3.4-8
Bronze inscriptions about the clan *tiān* 天 of Shāng Dynasty
(left: JC 1822; right: JC 3340)

[1] Cuī Héngshēng 崔恒昇 2001: 84-85; Xú Zhōngshū 徐中舒 2014: 4.
[2] Chén Chūshēng 陳初生 2004: 5.
[3] Cáo Jiàndūn 曹建敦 2006: 35-36.

3.5 Discussion

3.5.1 The Neolithic pottery graphs

According to the discussions in this chapter, none of the Neolithic graphs in China is writing, because no evidence can demonstrate that these Neolithic pottery graphs represent language. The vast majority of studies on the nature of the Neolithic graphs have been made by Chinese scholars and there are two primary problems in their discussions.

The first problem lies in their research method, as discussed in **1.2.2**, that is, to interpret the unknown with the known, which is also called the *shàngsùshì tuīduànfǎ* 上溯式推斷法 (diachronically upward extrapolation)[1] or *yǐhòu zhèngqián* 以後證前 (use of a later [character of equivalent structure] to explain the previous one).[2] This research tendency appears to be driven by research tradition and the focus of the study of Chinese writing, which attached great importance to the analysis of glyphic forms of signs from the very beginning, that is, the Hàn Dynasty.[3] The basis and core of the method is comparison with the oracle-bone and bronze inscription system. With this method, Chinese scholars interpret the Neolithic graphs on the basis of the similarity between the oracle-bone (and bronze signs) and the Neolithic graphs in their graphic forms. Moreover, the relationships between the Xià and Shāng cultures and the Neolithic cultures are normally used as supporting evidence. The premise of this method is that the unknown Neolithic graphs, belong to the same writing (or cultural) system as the known writing system, that is, the oracle-bone and bronze inscriptions. Clearly, the similarity in the graphic forms of some graphs and unclear historical connections between the Neolithic cultures and the Xià and Shāng cultures cannot satisfy this premise. Likewise, the temptation to use the known to explain the unknown also exists in the studies of early writing in Mesopotamia and Mesoamerica, and some scholars have already pointed out this methodological problem.[4]

Another problem is, as discussed in **1.2.2**, their problematic understanding of the invention and development of early Chinese writing. Most Chinese scholars argue that writing is the end product of an evolutionary development.[5] From their perspective, some individual signs are invented at the very beginning, and then after a long process of accumulation, a writing system is finally formed. Influenced by the theory of picture writing (*túhuà*

[1] Hé Dān 何丹 2003: 243-244; Lái Guólóng 來國龙 2006: 62.
[2] Gě Yīnghuì 葛英會 2003: Ráo Zōngyí 饒宗頤 2015.
[3] For more details see discussion in **1.2.2**.
[4] Englund 1993: 1671; Houston 2004: 282; Lái Guólóng 來國龙 2006: 62-63.
[5] Some Chinese scholars, such as Lǐ Wànfú 李萬福 (2000), have suggested that writing is invented in a relatively short period of time, but has not met with wide acceptance (for more details see **2.3.2**).

wénzì shuō 圖畫文字說),[1] some of these scholars cliam that the development of Chinese writing has gone through the following stages: pictographic writing → semantic writing → phonetic writing. However, writing is not the end product of a lengthy development but an invention, although it may take some time for this writing to develop into a fully-developed system. For example, Egyptian writing was invented at the end of the 4th millennium BC, and about 300 years later, a fully-developed system was formed.[2] But the several thousand years between Neolithic graphs and Shāng oracle-bone inscriptions rule out any possibility that there could be a developmental relationship between these two. As an invention, a writing system is developed quickly, or not at all. Moreover, the rebus principle was already used in oracle-bone inscriptions. Secondary logograms (derived by rebus usage from existing logograms) and pseudo-logograms (created solely for a phonetic purpose) already appeared in oracle-bone inscriptions.[3] For example, the oracle-bone sign 𠙵, depiction of a dustpan,[4] is a pseudo-logogram, used to write the semi-homophonous word **gə* 'adverbs and third-person pronouns' (*qí* 其).[5]

From my viewpoint, there were several graphic recording systems in the Neolithic period. Some of them belong to notation systems, such as the pottery graphs of the Yǎngsháo 仰韶 Culture (ca. 5000-3000 BC), which represent nonlinguistic information. For example, pottery graphs of the Bànpō 半坡 type have been discovered in a number of sites of the Yǎngsháo 仰韶 Culture, such as Bànpō 半坡, Jiānzhài 姜寨, Lǐjiāgōu 李家溝, Língkǒu 零口, Wǔlóu 五樓, Shēnyě 莘野 and Yuántóu 垣頭. The vast majority of these graphs are engraved on the same kind of pottery vessel in the same position, on the outer rim of the vessel, and each vessel is engraved with a single graph. It is very likely that the Bànpō 半坡 graphs are potters' or owners' marks. The graphs engraved before baking have a great chance to be potters' marks, which are used to order or calculate pottery vessels, while the graphs engraved after baking are probably owners' marks, which are made to avoid loss or confusion with others. In addition, as Gāo Míng 高明 has argued, pottery marks and writing belonged to different systems, and pottery marks were used constantly but never mixed with Chinese signs.[6]

Some of the pottery graphs fall into iconographic systems, such as, the pottery graphs of the late Dàwènkǒu 大汶口 Culture (ca. 3100-2600 BC) and the Liángzhǔ 良渚 Culture (ca. 3300-2000 BC). The SUN_BIRD graphs of the

[1] For more details see discussions in **2.3**.
[2] For more details see discussions in **2.2**.
[3] For more details see discussions in **5.2**.
[4] Xú Zhōngshū 徐中舒 2014: 487, Tāng Kějìng 湯可敬 2018: 658.
[5] For more details on the use of *qí* 其 as modal particles in oracle-bone inscriptions see Zhāng Yùjīn 張玉金 1994: 140-175. For its use as a pseudo-logogram in oracle-bone inscriptions see discussions in **5.2.1.3**.
[6] For more details see discussions in **3.2** and **3.3**.

Liángzhǔ 良渚 Culture depict a bird that flies with the sun on its back to represent the legend of the sun bird. These iconographic graphs have no fixed relationship to language, and graphic formize nonlinguistic information only, so these SUN_BIRD graphs can be translated into language in a wide variety of ways, such as, *yángniǎo fùrì* 陽鳥負日 (the sun bird carries the sun),[1] *fēiniǎo zàirì* 飛鳥載日 (the flying bird carries the sun),[2] and *jīnwū fùrì* 金烏負日 (the golden crow carries the sun).[3] Because of the worship of the sun god and bird of the Liángzhǔ 良渚 Culture, these graphs may be decorative emblems or clan-name insignia of the Liángzhǔ 良渚 Culture.[4]

Writing might, in the process of invention, borrow some graphs from iconographic and notation systems, such as, Chinese signs for numerals might be borrowed from Neolithic graphs,[5] giving a good explanation of the similarities between some Neolithic graphs and Chinese signs in their graphic forms. Although they look similar, they differ completely in their nature: symbols of iconographic systems and marks of notation systems have no fixed relationship to language, and only represent nonlinguistic information. Similar graphs from different Neolithic sites may codify different information, but signs of writing are a rendition of language, and represent words in language.

3.5.2 The earliest Chinese writing

On the basis of the present evidence, especially the two engraved oracle-bones found at Èrlǐgǎng 二裏崗, it can be determined that Chinese writing first appeared in the Early Shāng period (ca. 1600-1400 BC),[6] but it cannot be ruled out that most texts were written on perishable materials, such as bamboo and wood strips, that have not survived, and the tool of writing was a brush or something similar. Firstly, according to the graphic form of oracle-bone and Shāng bronze signs, the tool and material of writing might have been a brush and bamboo strips. For example, on the oracle bones (such as H 3034 and H 6053; **Fig. 3.5-1**) and Shāng bronze vessels (such as Zǐhuà *guǐ* 子畫簋 (WJC 3646) and Huàfùguǐ *jué* 畫父癸爵 (WJC 8339/ JC 8968); **Fig. 3.5-2**), the upper part of the sign **g$^{w\varsigma}$rek*  'draw, paint (v.)' (*huà* 畫) depicts a brush held in a hand.[7] Moreover, on the oracle bones (such as H 7386 and H 7413; **Fig. 3.5-3**) and Shāng bronze vessels (such as Gàngmǔjiǎ

[1] Dù Jīnpéng 杜金鵬 1997: 54.
[2] Gāo Míng 高明 2001: 234.
[3] Yuán Guǎngkuò 袁廣闊 2001: 70.
[4] For more details see discussions in **3.3**.
[5] Qiú Xīguī 裘錫圭 1992: 251, 2013: 24.
[6] For more details see discussions in **3.4.2**.
[7] Fāng Shùxīn 方述鑫 1993: 242; Chén Chūshēng 陳初生 2004: 346.

zhì 杠母甲觶; **Fig. 3.5-4**), the sign **[tsʰ](ʕ)rek* 𣏌 'volume; records' (*cè* 冊) depicts a volume of bamboo strips.[1]

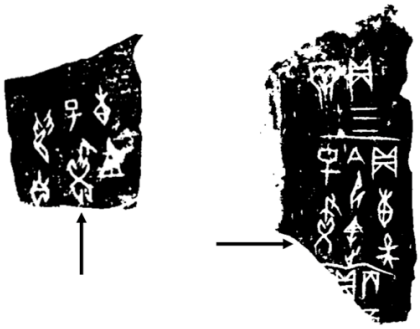


Fig. 3.5-1
The oracle-bone inscriptions with the sign *huà* 畫
(left: H 3034; right: H 6053)

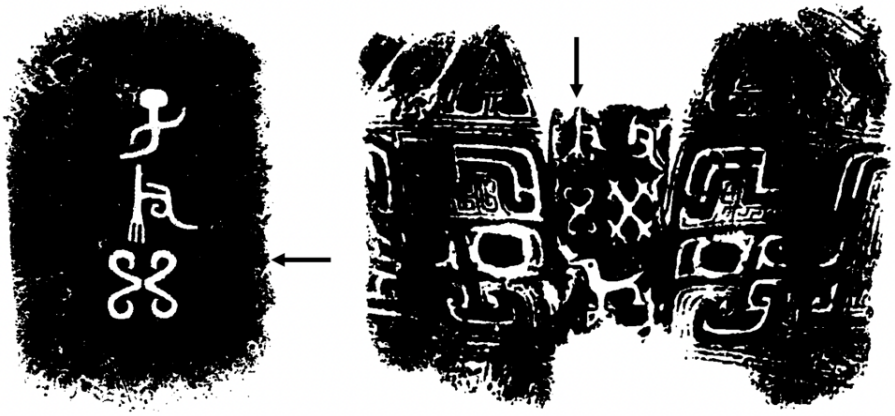


Fig. 3.5-2
Bronze texts on the Zǐhuà *guǐ* 子畫簋 (left)[2] and Huàfùguǐ *jué* 畫父癸爵 (right)[3]

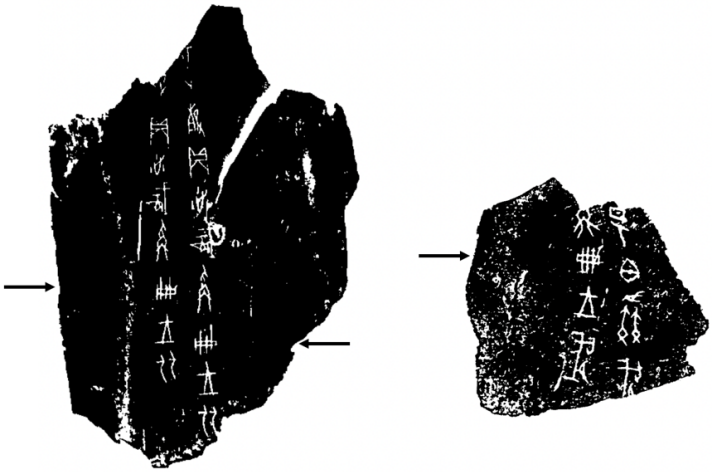


Fig. 3.5-3
The oracle-bone inscripions with the sign *cè* 冊
(left: H 7386; right: H 7413)

[1] Xú Zhōngshū 徐中舒 2014: 201.
[2] Wú Zhènfēng 吳鎮烽 2012 (7): 461.
[3] Wú Zhènfēng 吳鎮烽 2012 (16): 435.

Fig. 3.5-4
The bronze inscriptions on the Gàngmǔjiǎ *zhì* 杠母甲觶[1]

Moreover, there are a small number of oracle-bone inscriptions written with a brush (**Fig. 3.5-5**).[2]

JB 2636

T 1028

Fig. 3.5-5
Oracle-bone inscriptions written with a brush

Fig. 3.5-6 The painted pottery vessels of the Mǎjiāyáo 馬家窑 Culture[3]

[1] Luó Zhènyù 羅振玉 1983: 1548.

[2] For more discussions about oracle-bone inscriptions written with a brush see Liú Yīmàn 劉一曼 1991: 546-554.

[3] Wáng Zhì'ān 王志安 2016: 192-193.

Furthermore, the pottery patterns of the Neolithic period, such as the painted pottery of the Mǎjiāyáo 馬家窑 Culture (ca. 3900-2000 BC; **Fig. 3.5-6**),[1] and the pottery graphs of the Táosì 陶寺 Culture (ca. 2600-2000 BC; **Fig. 3.2.6**) are all written with a brush or a similar tool.[2]

In addition, bamboo or wood strips might have already been used as writing materials in the Shāng period, because of the records in traditional texts, for example:

> 惟殷先人有典有冊。[3]
>
> *Wéi yīn xiānrén yǒu diǎn yǒu cè.*
>
> It was that [your] ancestors of the Yīn 殷 (another name of Shāng 商) had bamboo books and codices.

However, the possibility of an earlier invention of Chinese writing cannot be ruled out. In the first place, as discussed above, earlier texts may have been written on perishable materials such as bamboo or wooden strips, which may not survive due to environmental reasons. Moreover, the Lóngqiúzhuāng 龙虬莊 (ca. 2000 BC) and Dīnggōng 丁公 graphs (ca. 2200-2100 BC) are engraved in linear sequence and uniform size.[4] Even if they do not resemble the oracle-bone signs, the possibility that these graphs represent other writing systems still remains.

Furthermore, based on the available evidence, it cannot be determined that the Táosì 陶寺 pottery graphs are writing,[5] but the possibility still cannot be ignored, because these graphs do resemble the oracle-bone signs in graphic form, and have the same way of writing and function as the Xiǎoshuāngqiáo 小雙橋 signs.[6] The Táosì 陶寺 graphs and the Xiǎoshuāngqiáo 小雙橋 signs are all written in vermilion. They are also all written on pottery fragments other than complete pottery vessels, which may be the so-called *suìwùjì* 碎物祭, a common form of sacrifice in ancient China.[7] This form of sacrifice involved smashing the sacrificial vessels or offerings and then burying them in the sacrificial pits or graves.

[1] Wáng Zhì'ān 王志安 2016: 193-194.
[2] For more details see discussions in **3.2**.
[3] *Shàngshū* 16 • *Duōshì* 尚書 16 • 多士 (Shànghǎi gǔjí chūbǎnshè 上海古籍出版社 1997: 220).
[4] For more details see discussions in **3.1** and **3.2**.
[5] For more details see discussions in **3.2**.
[6] For more details see discussions in **3.4**.
[7] Hé Zhēng 何崢 1994: 211.

4. The nature of early graphic recording systems in Mesoamerica

With regard to the early graphic recording systems in Mesoamerica, discussions in this chapter mainly focus on the so-called Olmec texts (that is, the Cascajal Block, the San Andrés seal and La Venta Monument 13), the Zapotec script from Preclassic and Early Classic Monte Albán, Ept-Olmec texts from ca. 300 BC to ca. AD 500 and Maya texts from Preclassic to Postclassic period.

4.1 Olmec

The presence of a writing system in the Olmec culture is still controversial, and scholars' discussions have mainly focused on the Cascajal Block, the cylinder seal unearthed in San Andrés, and Monument 13 of La Venta.

4.1.1 The Cascajal Block

The Cascajal Block discovered in the Olmec heartland of Veracruz, Mexico was first seen in 1999, and then published in 2006 (**Fig. 4.1-1**). Some scholars, Rodríguez Martínez, Houston and Taube, argue that the graphs ("signs") on the block are the oldest writing in Mesoamerica, dating to the transition between the Early and Middle Preclassic periods (ca. 1000-800 BC).[1] The researchers who published the block claim that the Cascajal graphs conforms to all expectations of writing:

> "The text deploys (i) a signary of about 28 distinct elements, each an autonomous, codified glyphic entity; (ii) a few in repeated, short, isolable sequences within larger groupings; and (iii) a pattern of linear sequencing of variable length, with (iv) a consistent reading order".[2]

Rodríguez Martínez et al. claims that the text orientation is horizontal,[3] and most scholars, such as Macri, Skidmore, Houston and Justeson,[4] have followed this opinion, but some scholars have different views. For example, after analyzing the formal and organizational characteristics of the alleged text and the patterns of repeated graphic sequences, David F. Mora-Marín believes that the text should be rotated 90 degrees clockwise with respect to the orientation assumed by Rodríguez Martínez et al., and be read from left to

[1] Rodríguez Martínez et al. 2006: 1611; Skidmore 2006: 1; Ortiz Ceballos et al. 2007: 15-18; Magni 2008, 2012: 2; Mora-Marín 2009: 397, 2020: 1; Carrasco and Englehardt 2015: 1; Fuls and Wells 2015: 183; Englehardt et al. 2019: 1.
[2] Rodríguez Martínez et al. 2006: 1612.
[3] Rodríguez Martínez et al. 2006: 1612.
[4] Macri 2006: 1; Skidmore 2006: 4; Houston 2010; Justeson 2012.

right and top to bottom, which conforms to the reading order of subsequent Mesoamerican writing systems.[1] From his perspective, the orientation of the supposed text on the cylinder seal of San Andrés and the obsidian blade of La Venta support this hypothesis (**Fig. 4.1-2**).[2]

However, it should be pointed out that the Cascajal Block bears only graphs, but the cylinder seal of San Andrés and obsidian blade of La Venta both exhibit a pictorial image and accompanying graphs, and the orientations of these two texts are most likely altered due to the need to adapt to the picture. Therefore, the situation of the cylinder seal and obsidian blade is different from that of the Cascajal Block, which obviously cannot be used as supporting evidence.

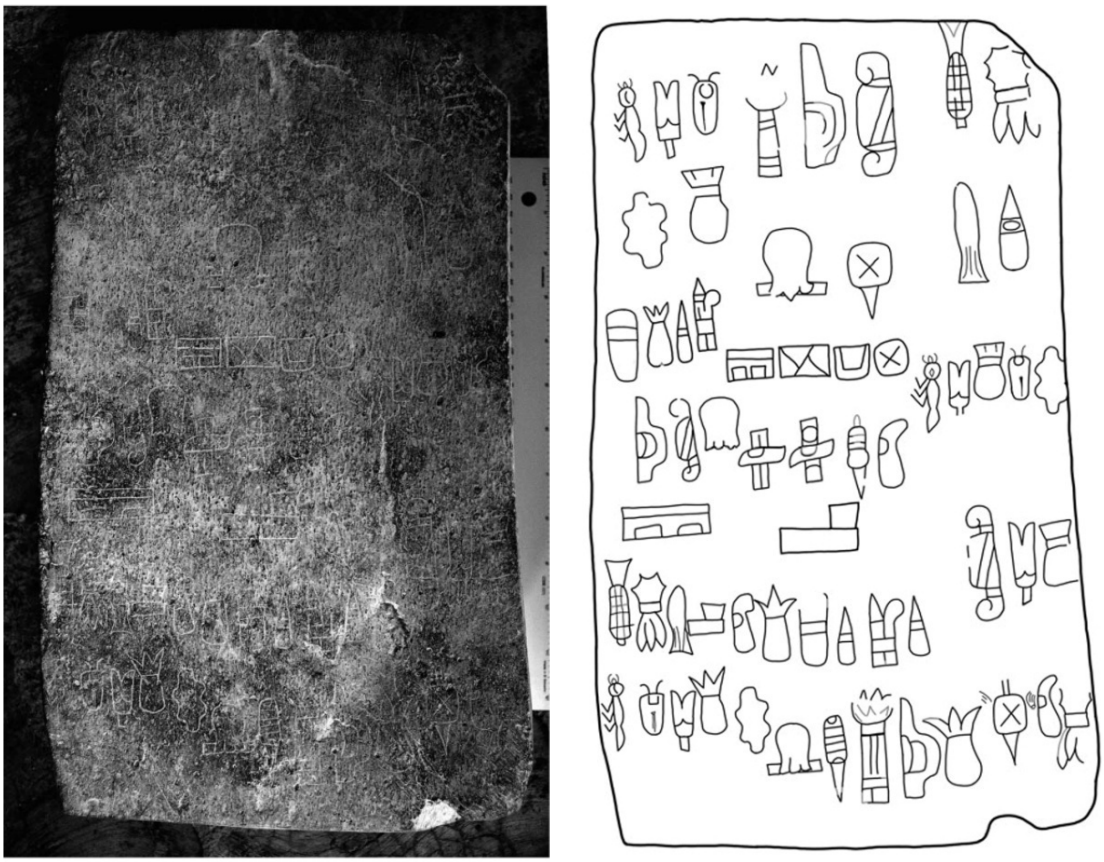
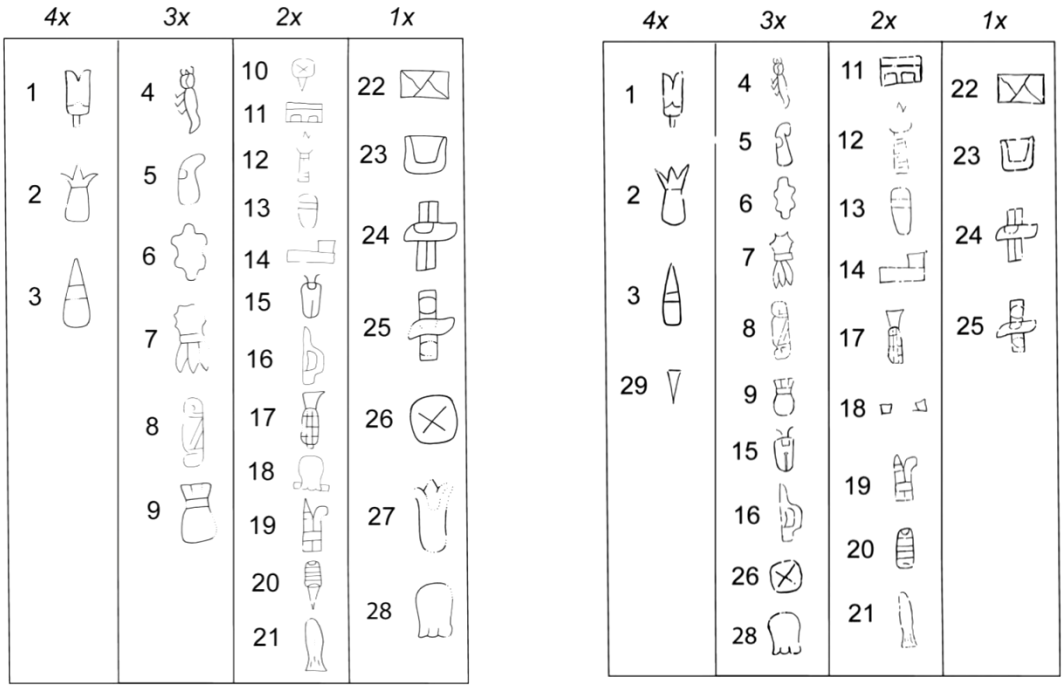


Fig. 4.1-1 The Cascajal Block (left: photograph;[3] right: epigraphic drawing[4])

[1] Mora-Marín 2009: 401.
[2] Mora-Marín 2009: 406-407.
[3] Martínez et al. 2006: 1611; online supporting material for the Cascajal Block can be found: https://science.sciencemag.org/content/suppl/2006/09/11/313.5793.1610.DC1
[4] Englehardt et al. 2019: 6.

Fig. 4.1-2
The cylinder seal of San Andrés (left) and additional texts possibly exhibiting the same reading format and order as the Cascajal Block text (right)[1]

There are 62 engraved graphs ("signs") on the Cascajal Block and the total inventory of alleged signs is 28 or 29 (**Fig. 4.1-3**).[2] Although the limited number of graphs made it difficult to decipher the inscriptions by linking them to language, several scholars, such as Rodríguez Martínez et al., Ortiz Ceballos et al., Magni, Carrasco and Englehardt and Mora-Marín, have tried to make interpretative contributions.[3]



Rodríguez Martínez et al. 2006[4] Mora-Marín 2020[5]

Fig. 4.1-3 The Cascajal signary

[1] Mora-Marín 2009: 409.
[2] Rodríguez Martínez et al. 2006: 1612; Mora-Marín 2020: 10-11.
[3] Rodríguez Martínez et al. 2006: 1613, 2007: 24-51; Ortiz Ceballos et al. 2007: 15-18; Magni 2008: 64-81, 2012: 1-20; Carrasco and Englehardt 2015: 1-22; Mora-Marín 2020: 1-20.
[4] Rodríguez Martínez et al. 2006: 1613.
[5] Mora-Marín 2020: 11.

Rodríguez Martínez et al. have tried to identify some graphs, for example, the sign  may be a skin and the sign  is allegedly an object shown held in the hand in Olmec iconography.[1] Magni argued that Olmec writing was a type of proto-writing and "the key to reading these signs is pictographic and ideographic",[2] and has tried to identify the graphs on the basis of their graphic form and similarities with Olmec iconography and the art of later Mesoamerican cultures. For instance, Magni has claimed that the graph  represents a sacrificial heart or a stone. This is because the Olmec jewelry, a mother-of-pearl pendant discovered at Teopantecuanitlan in Guerrero, is a representation of the human heart (**Fig. 4.1-4**), and the practice of human sacrifice was known among the Olmecs. Moreover, signs depicting the heart and heart stone also appear in the *Florentine Codex*[3] and *Codex Santa María Asunción*[4] (**Fig. 4.1-5**).[5]

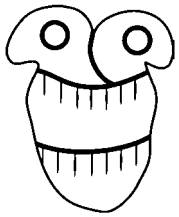


Fig. 4.1-4
Mother-of-pearl pendant of Teopantecuanitlan, Guerrero

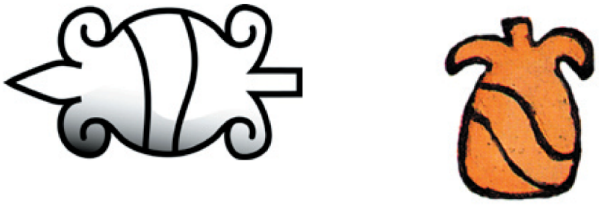


Fig. 4.1-5
Stone and heart glyphs in (left) the *Florentine Codex* and (right) *Codex Santa María Asunción*[6]

Other studies concerning the diphrastic kennings and spelling practice, such as Carrasco and Englehardt (2015) and Mora-Marín (2020),[7] have also been conducted in a similar way. For instance,  and  are recognized as graphs for "throne" and "mat" respectively by Carrasco and Englehardt

[1] Rodríguez Martínez et al. 2006: 1613.
[2] Magni 2008, 2012: 2.
[3] The *Florentine Codex*, originally titled as *La Historia General de las Cosas de Nueva España*, is a 16th-century ethnographic research study in Mesoamerica written by the Spanish Franciscan friar Bernardino de Sahagún.
[4] The *Santa María Asunción Codex* is a mid-16th century Mesoamerican pictorial codex with Nahuatl glosses.
[5] Magni 2008, 2012: 5-6.
[6] Magni 2012: 15.
[7] Carrasco and Englehardt 2015: 1-22; Mora-Marín 2020: 1-20.

because of their similarities to the signs for “throne” and “mat” in later Mesoamerican iconography and scripts.[1] Since the throne–mat kenning and couplet also metonymically signified political authority and rulership in Mesoamerican literature tradition, the combination of  and  on the Cascajal Block allegedly functioned as a throne–mat kenning to indicate a semantic value of “ruler” or “rulership”.[2] Moreover, on the basis of identification of the graph  as a mat, Carrasco and Englehardt claim that a proto-Mixe-Zoquean language spoken in the central Olmec area during the Middle Preclassic period may offer some help in the phonetic decipherment of the sign.

Clearly, the basis of the above studies is the graphic form and the similarities between Cascajal graphs and later Mesoamerican iconography and scripts. The problem of these studies is the same as that of the Chinese academic studies of Neolithic graphic forms.[3] The premise of explaining the Cascajal graphs on the basis of later Mesoamerican iconography and scripts is that they belong to the same system, which obviously cannot be demonstrated solely by the similarities between them. Therefore, the interpretations based on this method, as well as following studies based on these interpretations, are unreliable.

Since the publication of the Cascajal Block, there have always been doubts about its authenticity, such as Ann Cyphers (2007) and Bruhns and Kelker (2007), mainly due to the fact that the block was discovered by non-archaeologists without proper archaeological context. But recently, Englehardt et al. employs technologies such as polynomial texture mapping (PTM), X-ray fluorescence (XRF) and scanning electron microscopy (SEM) to address the issues of the authenticity, dating and cultural affiliation of the Cascajal Block.[4] The results of their research give strong support to the authenticity of the Cascajal Block, as it conforms to other Preclassic Olmec objects in terms of stylistic conventions, material and technological methods, etc.

Although the authenticity of the block can be determined, the current evidence cannot demonstrate that the Cascajal block represents a writing system. This is because the Cascajal Block is a unique example without descendants,[5] and has no certain relationship to other Mesoamerican writing

[1] Carrasco and Englehardt 2015: 6.
[2] Carrasco and Englehardt 2015: 13.
[3] For details see discussions in Chapter 3.
[4] Englehardt et al. 2019: 1-21.
[5] When Cascajal Block was first published, Rodríguez Martínez et al. (2006: 1613) has already pointed out this opinion, and Albert Davletshin reiterated this viewpoint in one of his recent presentation "Olmecs and the origin of writing in Mesoamerica: what can we see?" (8th of SCRIBO Seminars 2021,

systems, including epi-Olmec, although the latter is thought to be in a Mixe-Zoquean language. Without phonetic spellings and a linguistic context, it is impossible to determine whether the Cascajal graphs represent language. On top of that, many Cascajal graphs replicate decorative or iconographic motifs found on many small-scale artifacts, none of which has been recognized as any form of writing in their original context.[1] Furthermore, as I have argued in the discussions of the Dīnggōng 丁公 and the Lóngqiúzhuāng 龙虬莊 symbols,[2] a linear sequence and similarity in size are not unique characteristics of writing, as iconography also shares these characteristics. But the possibility that the Cascajal graphs are writing cannot be ruled out. The Cascajal graphs may represent a local system or a widely spread script that fell into disuse before the middle of the first millenium BC,[3] and it is quite possible that most texts in the Cascajal script were carved on wood, as evidence from the spring of nearby El Manatí shows that there was a woodworking tradition.[4]

4.1.2 The San Andrés seal

Excavations conducted in 1997 and 1998 at San Andrés, northeast of the Olmec center of La Venta, unearthed a cylinder seal with graphs (**Fig. 4.1-6**), dating to ca. 650 BC.[5] Some scholars, such as Pohl et al., Lacadena and Mora-Marín, argue that these graphs are Olmec writing.[6]

Fig. 4.1-6
Photograph (left) and rollout drawing (right) of the cylinder seal of San Andrés[7]

Pohl et al. compare the San Andrés seal with Late Preclassic to Early Classic Mesoamerican conventions, and have found some similarities. For example, the scroll and bracket motifs ( and ) look similar to glyph affixes (prefixes) in the early epi-Olmec, Mayan, and Zapotec scripts (**Fig. 4.1-7**).

09 June 2021; https://site.unibo.it/inscribe/en/events/scribo-seminars-2021).
[1] Bruhns and Kelker 2007: 1365.
[2] For details see discussions in Chapter 3.
[3] Rodríguez Martínez et al. 1613.
[4] Skidmore 2006: 5.
[5] Pohl et al. 2002: 1984.
[6] Pohl et al. 2002: 1984-1987; Lacadena 2008: 617; Mora-Marín 2009: 406.
[7] Pohl et al. 2002: 1984.

epi-Olmec		Tres Zapotec Stela C, 32 BC
Mayan		Abaj Takalik Stela 2, ca. 200-100 BC
Zapotec		Monte Albán, South Platform, ca. 300-600 AD

Fig. 4.1-7 Glyph affixes in the early epi-Olmec, Mayan, and Zapotec scripts

The three dots in graph  are also similar to the dots used in Mesoamerican writing systems that represent numerals adjacent to day or month signs.[1] The graph  is, in their views, quite similar to early Mayan glyphs representing the day sign *ajaw*, so they interpret this graph as the calendrical date "3 Ajaw" in the sacred 260-day Mesoamerican calendar. In the Maya script, the word *ajaw* is not only a calendrical day name, but also the word for "king". Since Lowland Maya incorporated the "U" element, the scroll superfix, and a segment of the bracket into their earliest glyphs for the title *ajaw* or "king", the graph  might, they believe, represent the word "king". Therefore, the inscription on the San Andrés seal might refer to a name "King 3 Ajaw", similar to the later Mesoamerican practice of naming someone after the birthday.[2]

Clearly, the above interpretation based on is the similarities between the San Andrés graphs and later Mesoamerican scripts. Pohl et al. argue that the three Late Preclassic writing systems, that is, the Mayan script, the epi-Olmec script, and the Zapotec script, are quite similar, which indicates that these three scripts derived in all likehood from a common ancestral script. However, even if these three scripts developed from the same ancestral script, it does not demonstrate that the San Andrés graphs have a certain relationship to these later scripts, because the similarity in their graphic forms alone does not mean that they belong to the same system. As a result, an interpretation on this basis is unreliable.

Therefore, the San Andrés graphs cannot be regarded as writing. Firstly, in the absence of phonetic spellings and a linguistic context, it cannot be proven that

[1] Pohl et al. 2002: 1985.
[2] Pohl et al. 2002: 1986.

the San Andrés graphs represent language. Also, as Davletshin (2021) has pointed out, seals are not used for writing in Mesoamerica. If the San Andrés graphs were writing, then the San Andrés seal would be a unique example. Instead, the San Andrés graphs should be iconography, graphic elements joined into a meaningful arrangement, and these graphs have no fixed sequence or reading order, and therefore can be interpreted in several ways, for example, a singing bird.[1]

4.1.3 La Venta Monument 13

La Venta Monument 13 (**Fig. 4.1-8 & 9**), the so-called "Ambassador",[2] was discovered in La Venta, Tabasco, Mexico in 1943,[3] displaying four sculpted graphs: three in a vertical column and the fourth as a sole footprint. There is a strong controversy over the dating of this monument:

1) ca. 600-400 BC;[4]
2) no earlier than 500-400 BC;[5]
3) the end of the Middle Preclassic, ca. 600-400 BC, or the beginning of the Late Preclassic, ca. 400-200 BC;[6]
4) ca. 450-300 BC;[7]
5) the beginning of the Late Preclassic, ca. 400-200 BC.[8]

Some scholars, such as Philip Drucker (AD 1911-1982), Coe, Marcus, Alfonso Lacadena (AD 1964-2018) and Justeson, have argued that the graphs on La Venta Monument 13 are writing, most likely Olmec writing.[9] Most of these scholars, such Marcus and Houston, believed that the three graphs in columnar arrangement are hieroglyphic writing, and may represent the name of the individual depicted on the monument.[10] The isolated footprint is usually treated as an iconographic motif,[11] indicating movement,[12] or a graph that later became a common convention in Mesoamerica for "travel" or "journey".[13]

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[1] Houston 2004: 284-286; Davletshin 2021. Davletshin's opinions on the San Andrés seal are from his presentation "Olmecs and the origin of writing in Mesoamerica: what can we see?" (8th of SCRIBO Seminars 2021, 09 June 2021).
[2] Drucker et al. 1959: 40; Coe 1968: 148.
[3] Drucker 1952, Drucker et al. 1959.
[4] Pohl et al. 2002: 1986; Houston 2004: 292.
[5] Marcus 1976: 43, 47, 1992: 41.
[6] Lacadena 2008: 614.
[7] Justeson 2012.
[8] Karl Taube 2002 (personal communication, cited in Houston 2004: 276, 292), 2004: 45; John Graham 2005 (Personal communication, cited in Lacadena 2008: 611).
[9] Drucker 1952: 181-182; Coe 1968:148; Marcus 1976: 43, 47, 1992: 42, 2020: 23; Lacadena 2008: 610; Justeson 2012. In her recent work, Marcus argues that the La Venta Monument 13 belongs to epi-Olmec writing (2020: 23).
[10] Marcus 1976: 47, 1992: 42, 2020: 23; Houston 2004: 292.
[11] Drucker 1952: 181-182; Marcus 1976: 47, 1992: 42; Justeson et al. 1985: 35; Houston 2004: 292.
[12] Justeson et al. 1985: 35; Houston 2004: 292.
[13] Marcus 1976: 47, 1992: 42.

Linda Schele Photo Collection[1]

Drucker 1952[2]

Fig. 4.1-8 Photographs of La Venta Monument 13

Alfonso Lacadena proposed a new hypothetical interpretation in 2008, which has been supported by many scholars, such as Justeson and Davletshin.[3] Lacadena argues that the four graphs on Monument 13 constitute a two-column text in Mixe-Zoquean word order. Lacadena analyzed the syntax of the alleged hieroglyphic text with the method of structural analysis. As the third graph  in the three-graph column is a bird's head and the orientation of head signs usually indicates the reading order, the text on the Monument 13 should be read from right to left.[4] The graph  is a numeral, logogram ONE, and the graph  is possibly the logogram of one of the 20 days of the Olmec calendar. The bird graph may be the name or title of the individual depicted on the monument. In different Mesoamerican scripts, footprint graphs are often used as verbs to indicate movement, "arrive" or "go", such as in the Mayan script, the footprint graph is a logogram, HUL "to arrive

[1] http://research.famsi.org/schele_photos.html?&search=La%20Venta&sort=

[2] Drucker 1952: Plate 63.

[3] Justeson 2012; Davletshin 2021. Davletshin's opinions on the La Venta Monument 13 are from his presentation "Olmecs and the origin of writing in Mesoamerica: what can we see?" (8th of SCRIBO Seminars 2021, 09 June 2021)

[4] Lacadena 2008: 616.

(here)", so related meanings of "go", "arrive", "come", "walk" are plausible for the footprint graph in the context of La Venta Monument 13, and the graph is probably a verbal expression. Thus, the four graphs on La Venta Monument 13 constitute a two-column text read from right to left, consisting of a calendrical reference (composed of a number and a day name), a name or title and a verbal expression.[1] Lacadena therefore believes that the alleged text on La Venta Monument 13 reveals a language that presents a syntactic order of subject-verb in intransitive verbal expressions, which corresponds to the syntax of the Mixe-Zoquean family.[2]

Drucker 1952[3]

Coe 1968 and Houston 2004[4]

Marcus 1976, 1992, 2020[5]

Fig. 4.1-9
Drawings of La Venta Monument 13

[1] Lacadena 2008: 616-622.
[2] Lacadena 2008: 624.
[3] Drucker 1952: 203, fig.61.
[4] Coe 1968: 148; Houston 2004: 277, after drawing by Miguel Covarrubias.
[5] Marcus 1976: 48, fig.4; 1992: 43, 2.13, redrawn from Drucker 1952, fig. 61.

However, this is still not solid evidence for Olmec writing. Lacadena's interpretation remains hypothetical, since no corpus of Olmec texts can be used to validate this hypothesis. In the absence of a phonetic decipherment of the alleged text, it cannot be certain that the graphs on La Venta Monument 13 represent Language. Moreover, although graphs on La Venta Monument 13 are carved in a linear sequence and in a similar size, as I have argued in the discussions of the Dīnggōng 丁公 and the Lóngqiúzhuāng 龙虬莊 symbols,[1] as well as the Cascajal Block, it cannot demonstrate that they are writing, since iconography also shares these characteristics. Even if the graphs on La Venta Monument 13 are writing, they are most likely not Olmec writing. This is due to the fact that according to stylistic criteria, this monument could not be considered as Olmec but a late Preclassic (post-Olmec) work, dating to ca. 400-200 BC.[2]

[1] For details see discussions in Chapter 4.

[2] De la Fuente 1973: 262-264; 1977: 239-242; Karl Taube 2002 (personal communication, cited in Houston 2004: 276, 292.), 2004: 45; John Graham 2005 (personal communication, cited in Lacadena 2008: 611.); Davletshin 2021. Davletshin's opinions on the La Venta Monument 13 are from his presentation "Olmecs and the origin of writing in Mesoamerica: what can we see?" (8th of SCRIBO Seminars 2021, 09 June 2021).

4.2 Zapotec

The corpus of the Zapotec script consists of texts incised in stones and ceramics from Preclassic and Early Classic Monte Albán and other sites scattered throughout the Valley of Oaxaca and beyond, such as stone slabs, stelae and ceramics with texts from Monte Albán; monuments bearing hieroglyphs at Dainzú; monuments bearing texts from the Etla region (e.g. Reyes Etla, San Lázaro Etla, and Cerro de la Campana); carved stones from the Valle Grande (e.g. Xoxocotlán, Cuilapan, Zaachila, Noriega, Santa Inés Yatzeche, and Rancho Tejas de Morelos); carved stones from the Tlacolula Region (e.g. Macuilxóchitl, Tlacochahuaya, Lambityeco, and Yagul).[1]

Caso[2] was the first scholar to recognize a correspondence between the geographical area of the inscriptions found at Monte Albán and the Zapotec linguistic area,[3] and now most scholars believe that the language behind these inscriptions discovered in the Valley of Oaxaca of the Preclassic and Early Classic periods is Zapotec.[4] Scholars' studies have also supported this viewpoint, for example:

(1) Day names occur before their numeral coefficients in these inscriptions, which is an order documented only in the Zapotec calendar.[5]

(2) The sequence of signs on the slabs from Building J (ca. 200 BC-250 AD) conforms to the syntactical order of the Zapotec language (verb-subject-object) (see more details in this chapter).[6]

(3) Two day signs (the 10th  and 15th  in positions on Urcid's Zapotec day list) and their iconic representation,[7] are unique within the Mesoamerican context, and relate specifically to Zapotec: Zapotec has a day named *Knot*, agreeing with the form of a day sign recognized as depicting a knotted cloth by Caso (1928).[8] Another day in the Zapotec calendar is named *Corn*, agreeing with the form of a day sign recognized as depicting a corncob by Urcid.[9]

[1] Caso 1928, 1947; Caso and Bernal 1952; Scott 1978; Boos 1966; Marcus 2020.
[2] Caso 1928: 9-13.
[3] Whittaker 1992:7; Urcid 2001: 15.
[4] Whittaker 1980, 1992:7; Urcid 2001: 15, 2005: 16; Kaufman and Justeson 2008: 231; Justeson and Kaufman 2010; Marcus 2020: 45.
[5] Whittaker 1980.
[6] Whittaker 1992: 12-14.
[7] For Zapotec glyphic day list by Urcid see Urcid 2001: 252, fig. 4.151.
[8] Urcid 2001: 156.
[9] Urcid 2001: 178-182.

4.2.1 San José Mogote Monument 3

With regard to the earliest example of Zapotec writing, San José Mogote Monument 3 is the most controversial. The monument was discovered at the site of San José Mogote in the Valley of Oaxaca, Mexico in 1975,[1] depicting a sprawled naked human figure with two glyphs between his feet (**Fig. 4.2-1**).

Marcus 1976[2] Flannery and Marcus 1983[3]

Fig. 4.2-1 San José Mogote Monument 3

Opinions differ as to the date of this monument. Flannery and Marcus, the excavators of the monument, argued for a date back in the Rosario phase, ca. 600 BC,[4] and a great many scholars have followed their opinion,[5] while some other scholars prefer a later date, for example, a terminal Late Preclassic date;[6] the end of Monte Albán I;[7] ca. 300BC-200 AD.[8] Marcus argues that the two glyphs on Monument 3 are a caption of the figure depicted, presumably a sacrificial victim. The lower ornate dot indicates the numeral 1 and the upper glyph is the Zapotec glyph  *xoo*, meaning "earthquake" or "motion". So the inscription can be read as "1 Earthquake", the 17th day name

[1] Marcus 1976: 44,
[2] Marcus 1976: 44, fig. 2.
[3] Flannery and Marcus 1983: 58.
[4] Marcus 1976: 44, 1980: 53-54, 1992: 35, 2020: 66; Flannery and Marcus 1976: 382, 1983: 57-58, 2003: 11803, 2015: 180–192; Flannery and Marcus and Kowalewski 1981: 80-81.
[5] Aveni 1980: 144; Blanton et al. 1981: 65-66; Spencer 1982: 17-18; Justeson 1986: 447; Miller 1986: 30; Millón 1988: 217; Sabloff 1989: 47-54; Stuart and Houston 1989: 70; Houston 2004: 292; Urcid 2005: 5; Justeson 2012.
[6] Whittaker 1983: 105.
[7] Cahn and Winter 1993: 60.
[8] Pohl et al. 2002:1984.

in the 260-day ritual calendar, which very likely represents the day on which the victim was sacrificed or his personal name, because it was the Zapotec practice to name people after their date of birth. Therefore, San José Mogote Monument 3 has been regarded as the earliest evidence for hieroglyphic writing and the 260-day calendar in Mesoamerica, as well as a clear precursor for the *danzante* carvings of Monte Albán I.[1]

However, some scholars refute this viewpoint from the following aspects: (1) With regard to the style of the calendrical hieroglyphs, decorating with a curved base and U-bracket is a feature for the sign of numeral 1 that is unattested in earlier periods. And the form of the 17th Zapotec day-name on the monument is not attested before the Monte Albán Classic.[2] (2) The date of the monument cannot be determined by associated ceramics, since the monument was not sealed beneath a floor, and any sherd associated with the danzante could be redeposited.[3] (3) The placement of the monument in the corridor should be regarded as a reuse; in other words, it did not originally function as a slep or threshold. The monument is carved on two surfaces, and both of them are supposed to be visible. It is very likely that the stone originally formed the corner of a wall.[4] (4) With respect to the symbolic elements, the circle-and-triangle motif also occurs at other sites, such as La Venta and Fábrica San José (**Fig. 4.2-2**), which are all dated to Monte Albán I or II.[5]

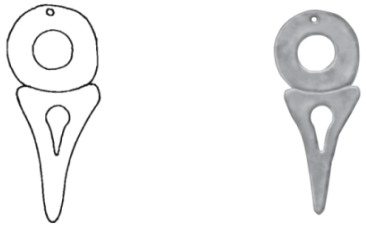


Fig. 4.2-2
The shell pendant of Fábrica San José (left: Cahn and Winter 1993;[6] Marcus 2020[7])

Marcus has defended herself in recent work. Firstly, she has followed Robert Drennan[8] in dating the circle-and-triangle shell pendant to Guadalupe phase (850–700 BC) (**Fig. 4.2-2**).[9] But Cahn and Winter have already pointed out that Drennan's dating is problematic. The shell pendant comes from provenance A 111/Z 1, and there was evidently some mixing with Monte Albán I material. The shell pendant, especially sequins with tiny holes, is particularly common in Monte Albán I contexts at Monte Albán, so the Fábrica San José ornament may well also belong to Monte Albán I.[10]

[1] Marcus 1976: 44, 1980: 53-54, 1992: 35, 2020: 69.
[2] Whittaker 1983: 104.
[3] Cahn and Winter 1993: 44.
[4] Cahn and Winter 1993: 45.
[5] Cahn and Winter 1993: 51-54.
[6] Cahn and Winter 1993: 52, fig. 5.
[7] Marcus 2020: 64, fig. 6.5.
[8] Drennan 1976: Fig. 78d.
[9] Marcus 2020: 62-65.
[10] Cahn and Winter 1993: 51.

Moreover, Marcus argues that Monument 3 of San José Mogote was sealed stratigraphically below two well-made, stone-lined hearths (Features 18 and 19) of the Rosario phase (**Fig. 4.2-3**), whose dates provide a *terminus ante quem* for Monument 3, prior to the end of the Rosario phase (ca. 630-560 BC).[1]

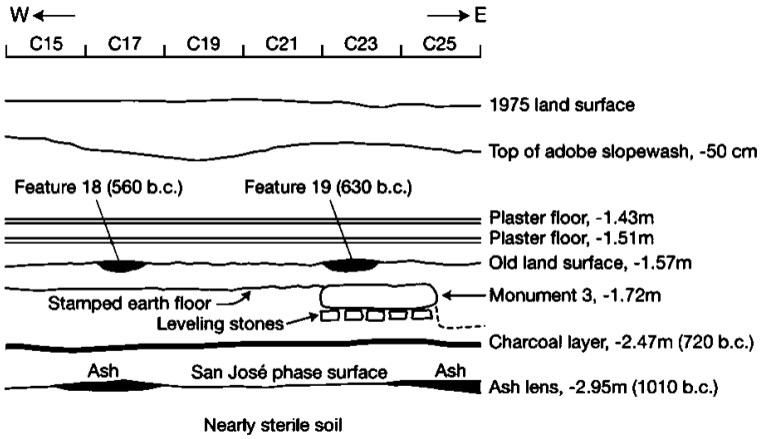


Fig. 4.2-3
The excavation data for San José Mogote Monument 3[2]

In addition, before placing Monument 3 in the corridor, people arranged a layer of flat slabs that served to level and support the carved stone (**Fig. 4.2-4**). And all the sherds found with these slabs and Monument 3, and those between Monument 3 and the two overlying hearths, belonged to Rosario (or earlier) times. Thus, it is impossible for Monument 3 to have been used in an earlier phase building.[3]

Fig. 4.2-4
A view of San José Mogote Monument 3 from the east, showing the layer of flagstones used to level it.[4]

[1] Flannery and Marcus 2003:11803, 2015:180–193; Marcus 2020: 66.
[2] Flannery and Marcus 2015: 182, fig. 18; Marcus 2020: 71, 6.17.
[3] Flannery and Marcus 2003, 2015:180–193, 2020: 66.
[4] Flannery and Marcus 2015: 182, fig. 20; Marcus 2020: 72, 6.14.

4.2.2 Zapotec syntax

The reading order of Zapetoc linear texts is quite varied, with the four basic modes: top to bottom, bottom to top, left to right, and right to left, and the top-to-bottom reading order is most prevalent.[1] Date formulae usually appear at the beginning of a text. If they are found at the beginning as well as the end of an inscription, the year date is almost always given first, with other date information placed at the end.[2] When the signs face leftward, columns were read from left to right; when signs face rightward, texts were read from right to left.[3] Like many early writing systems, the reading order and sign arrangement of Zapotec texts have yet to be standardized.

A count of non-calendrical glyphs conducted in the corpus of Monte Albán I and II texts yields a signary of about 80 signs, and the number of distinct non-calendrical glyphs in the inscriptions dating to Monte Albán IIIa and IIIb is about 60 to 80. If calendrical signs are taken into account, the repertoire of signs in each major developmental phase is slightly more than 100.[4] Among them, the most noteworthy are the RATTLE sign, BAG sign and HILL sign.

(1) The RATTLE sign and the BAG sign

Scholars have divergent opinions on the interpretations of the so-called RATTLE sign (**Fig. 4.2-5**) and BAG sign (**Fig. 4.2-6**). Whittaker has pointed out that the final glyph in a name clause is usually a quincunx staff (or rattle) sign or a glyph identified as a tied bag by Caso.[5] They should be verbal or adjectival elements, and approximately mean “killed, died” and “captured”, respectively.[6]

Fig. 4.2-5 The variants of the rattle sign[7]

Fig. 4.2-6 The variants of the bag sign[1]

[1] Urcid 2001: 417, 2005: 15; Marcus 2020: 84.
[2] Whittaker 1992: 15.
[3] Kaufman and Justeson 2008: 231.
[4] Urcid 2001: 421, 2005: 13.
[5] Caso 1928: 65.
[6] Whittaker 1980: 41-45; 1992: 10.
[7] Marcus 2020: 85, fig. 6.26.

However, Urcid has a different opinion. After analyzing the carved stones from the South Platform at Monte Albán, he proposed a standard sequence of the texts, and the most common order would be temporal markers (year date), locatives (place name), subject (the calendrical name of individuals), verbs, and object (the bag sign). He believed that such order and its variations could reflect the structure of predicate, subject, and object, which is the most common word order in present-day dialects of Zapotec. The glyph in that last position of this standard sequence is the BAG sign. Since the nonverb-final basic word order is a common linguistic feature in Mesoamerica, Urcid argued that the sign could not be a verbal element as Whittaker has claimed, but probably a logogram that means captor.[2]

Marcus argued that the RATTLE sign and the BAG sign were used for their phonetic values as rebus. She pointed out that "bag", "death", "deceased person" (*cotí* or *gotí*) were near-homonyms and tone pairs in 16th-century Zapotec, so the BAG sign could be linked to the Zapotec word for "death" or "deceased person".[3] Marcus claimed that the RATTLE sign occurs on about nine slabs of Period I and 13 conquest slabs of Period II.[4] After the end of Period II, this sign became rare, which may imply that it was replaced by another sign or the content of later texts did not require it. Marcus claimed that the RATTLE sign was sometimes the last glyph in a phase on the Period I prisoner slabs. In Zapotec, the word *guij* or *quij* means "object of sacrifice", which might be a possible meaning for the rattle sign. But this sign on the conquest slabs of Period II appeared, in her opinion, to have another function. It is quite possible that the rattle glyph was used for its sound value. She believed that *guij* or *quij* could mean either "object of sacrifice" or "hill". "Object of sacrifice" would be a plausible word for the captives of Building L, and "hill" would be a useful word for place names on Building J.[5] For instance, Lápida 20 of Building J (148*158 cm; **Fig. 4.2-7**) displays the HILL sign,[6] the place-specifier (consisting of many small dots and a rattle sign) which seems to be a coyote, and a downturned head. It should be read from bottom to top as "*guij*/*quij* + coyote", which conforms to Zapotec word order.[7]

[1] Marcus 2020: 51, fig. 5.4.
[2] Urcid 2001: 395-397, 424.
[3] Marcus 2020: 50. Example see Monument 55 in **5.3.2**.
[4] The nine slabs with rattle sign are: Monuments D-2, D-6, D-8, D-22, D-86, D-130, E-1, J-80, and M-2; see John Scott's catalogue (1978) (Marcus 2020: 85).
[5] Marcus 2020: 85.
[6] Caso: Lápida 20; Zehnder: J-10; García Moll et al.: Stone 97.
[7] Marcus 2020: 85, 171.

Fig. 4.2-7
Lápida 20 of Building J, Monte Albán[1]

(2) The HILL sign

The so-called HILL glyph (**Fig. 4.2-8**) was first identified by Batres (1902),[2] and varying elements infixed to the HILL glyph represent the name of places that were subjugated by Monte Albán.[3]

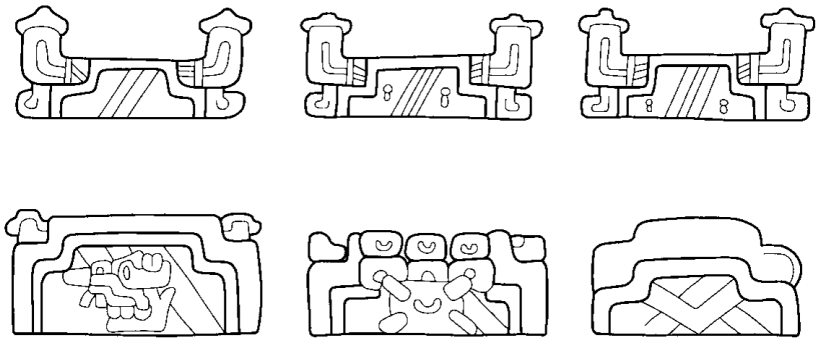


Fig. 4.2-8
The HILL signs in Zapotec texts[4]

Caso was the first to name the stones of Building J as *lápidas de conquista* or "conquest slabs", and argued that the hill sign groups on the slab were place names, and each slab commemorated the name of a place conquered by Monte Albán.[5] Based on this proposal, later scholars have made various interpretations: the conquered territorial extent of the Monte Albán-centred empire in the Late to Terminal Preclassic;[6] the names of towns and polities

[1] Marcus 2020: 171, fig. 8.62.
[2] Whittaker 1992: 10; Urcid 2001: 42.
[3] Caso 1928: 82, 1947: 21-28; Marcus 1980: 51-52, 2020: 124-127; Whittaker 1980; 1992: 10.
[4] Marcus 2020: 131, fig. 8.7.
[5] Caso 1947:21–28.
[6] Marcus 1976: 128-129, 1983: 107-108, 1992, 2020: 129-131.

subjugated by Monte Albán;[1] individuals or neighborhoods within Monte Albán.[2]

Marcus compared the HILL sign groups in the conquest slabs with Nahuatl hieroglyphic toponyms from the *Codex Mendoza*,[3] and identified some places outside the Valley of Oaxaca, treating them as evidence for the territorial limits of the early Zapotec state in the Late to Terminal Preclassic (ca. 300 BC-AD 200). However, some scholars have pointed out that current archaeological data indicates that Monte Albán in the Terminal Preclassic lacked both the geographical reach and the administrative efficacy inferred from Marcus' readings of the conquest slabs of Building J.[4] And Carter has also pointed out that Marcus' decipherments are unreliable because of the internal inconsistencies and the inconsistencies with other better-understood Zapotec texts in recording toponyms. Thus, Carter claims that the texts of Building J remain undeciphered.[5]

But Marcus has made the following points in her recent work to support her own viewpoint that the stones of Building J are conquest slabs: ① The heads of defeated lords are depicted upside down with closed eyes, which is a convention for dead; ② A similar list of vanquished polities is also found in the city of Xochicalco in Morelos; and ③ the later Maya, Mixtec, and Aztec also kept lists of the places they conquered. So the conquest slabs of Building J are more of a widespread process than a phenomenon unique to Monte Albán.[6]

Whittaker has argued that the HILL sign on Stone 45 (110*109*46 cm; **Fig. 4.2-9**) of Building J is the name for Monte Albán.[7] He argued that the signs (coefficient 4, numeral 1, the HILL sign) on Stone 45 are probably a calendrical name and depict the personage as the ruler of Monte Albán, because the Zapotec capital, Zaachila, was originally known as the "Hill of Precious Stones". In Córdova's orthography, the Zaachila form would be Tàniquiecàche. And on Stone 45, the name of the center is aided by rebus spelling. The calendrical prefix for the numeral is *quie*, which functions as a phonetic indicator for *quie* "stone".[8]

[1] Wittaker 1992: 12-13.
[2] Urcid and Joyce 2014: 157-164.
[3] The *Codex Mendoza* is an Aztec codex created in the 16th century. It was written in the Nahuatl language utilizing traditional Aztec hieroglyphs with a translation into Spanish. It contains a history of the Aztec rulers and their conquests, as well as a description of the daily life of pre-conquest Aztec society.
[4] Joyce 1991, 2003; Workinger 2002; Zeitlin and Joyce 1999.
[5] Carter 2017.
[6] Marcus 2020: 124.
[7] Caso: Stone 45; Zehnder: J-92-A; Scott: J-45; García Moll et al.: Stone 117. For more details see Marcus 2020: 175, figure 8.69.
[8] Whittaker 1980: 150-151; 1992: 11-12.

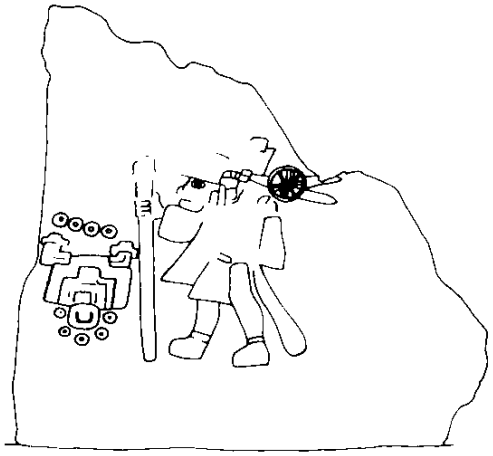


Fig. 4.2-9
Stone 45 of Building J[1]

On this basis, Whittaker has argued that the signs on the conquest slabs belong to four categories:

① place sign of the conquered place;
② verb;
③ sign for Monte Albán; (see more details in this chapter)
④ inverted head.

He claimed that category 2 consists of only two signs: arrows (usually clutched by a hand) (such as graph 7 on Lápida 14 (190*158 cm);[2] **Fig. 5.3.2-3**), and a quincunx staff that may be a rattle, and should be read as "to strike down" and "to destroy" respectively. Hence, the glyphic format of conquest tablets was as follows: (place sign of the conquered town) — verb (to strike down / to destroy) — subject (glyph for Monte Albán) — object (downturned head), which conforms to Zapotec syntactic structure. The place sign of the conquered town was put in initial position for reasons of emphasis.[3]

Urcid and Joyce also claimed that the HILL sign referred to (a sector) of Monte Albán, but with regard to the glyphic compounds above the HILL sign, they believed that these glyphic compounds were not toponyms but anthroponyms. They have argued that in the center of the hill sign groups is the reference of a sector of Monte Albán, called "Hill-diagonal bands-noseplug" (**Fig. 4.2-10**). Personal names were carved above this toponymic reference, and below it were calendrical names and inverted heads.[4] In their view, the "Hill-diagonal bands" together with the noseplug might be a synecdochical recourse, and

[1] Whittaker 1992: 11, fig. 2-4b; 12, fig. 2-6b.
[2] Caso: Lápida 14; Zehnder: J-4; García Moll et al.: Stone 83. For more details see Marcus 2020: 159-164, figure 8.51.
[3] Whittaker 1992: 12-14.
[4] Whittaker 1992: 12-14.

supposed to be read as Hill-Lord(s) (**Fig. 4.2-11**). In the ancient Zapotec calendar, the 20th glyphic day name (Lord) depicts the face of a personage often wearing a noseplug, and these sumptuary goods were used by nobles and rulers exclusively.[1] Moreover, according to the Mapa de Xoxocotlan,[2] the hill with the Main Plaza of Monte Albán is glyphically identified by a tomb door-slab, or a throne, and a feathred oval framing the depiction of a personage with a bird's helmet seated on a throne. The accompanying Nahuatl (*teuhtli tepeque*) and Mixtec (*yucu ani yya dzoco ñaña*) glosses can be literally translated as "Hill of the Lord" and "Hill of the lord's palaces and tombs", respectively.[3] Urcid and Joyce further argued that some of the signs carved above the "Hill of the Lords" resemble the captions of personages depicted on the carved monuments of Building L (**Fig. 4.2-12**). Therefore, the glyphic compounds above the "Hill-Lord(s)" are anthroponyms instead of toponyms.[4]

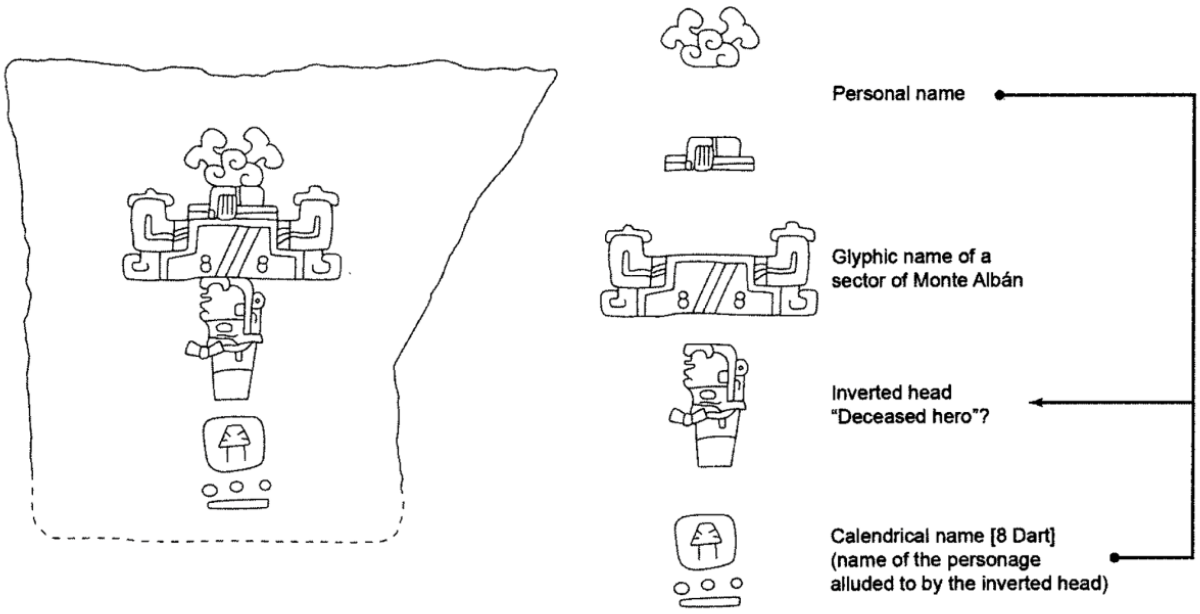


Fig. 4.2-10 The layout of Lápida 7[5]

[1] Urcid 2001: 211-213, 225, 245.
[2] Ruiz Cervantes and Sánchez Silva 1997: 25; Smith 1973: 338, fig. 162; quote from Urcid and Joyce 2014: 159.
[3] Urcid andJoyce 2014: 159.
[4] Urcid and Joyce 2014: 159.
[5] Urcid and Joyce 2014: 159, 9.7. For more details on Lápida 7 (120*146 cm) (Caso: Lápida 7; Zehnder: J-34; García Moll et al.: Stone 67) see Marcus 2020: 157, 159, figure 8.43.

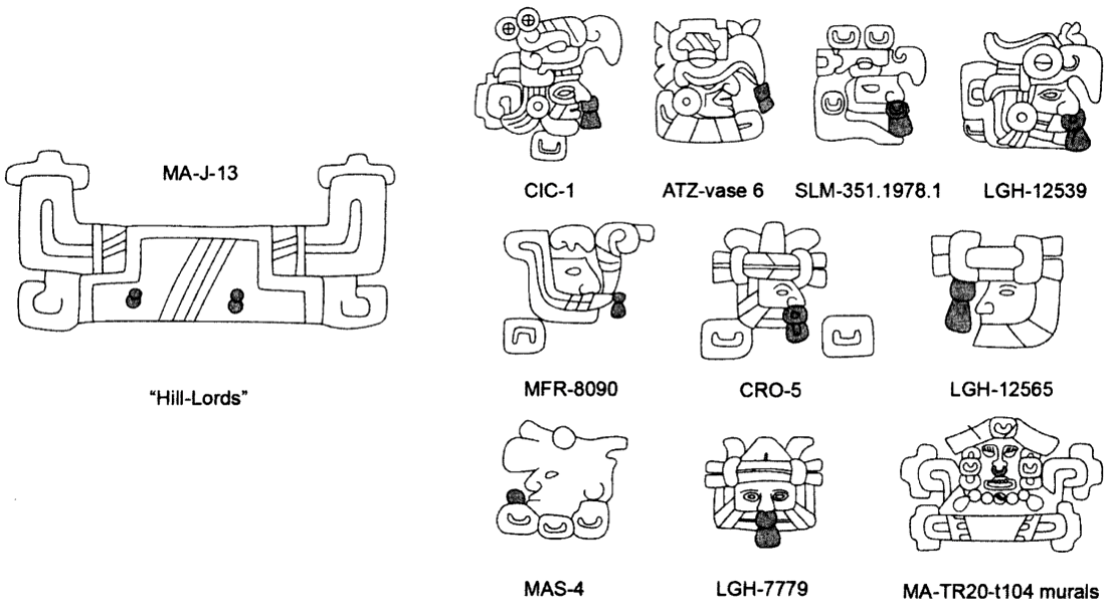


Fig. 4.2-11 The "Hill-Lord(s)" and the iconicity of noseplugs[1]

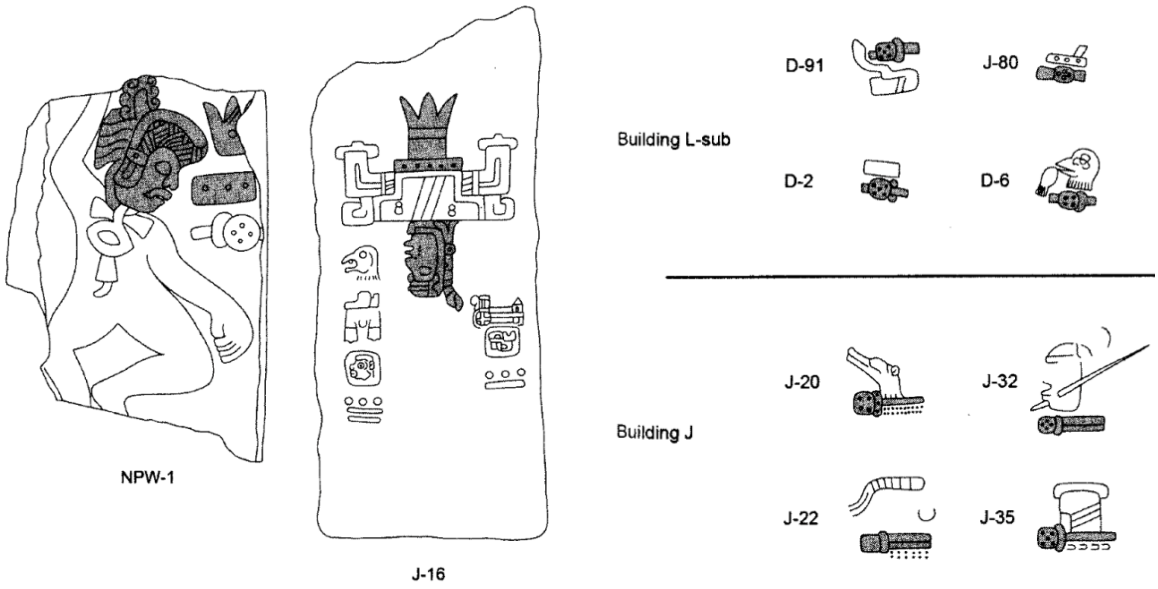


Fig. 4.2-12 The glyphic compounds above the HILL sign of Building J resemble the naming captions on monuments of Building L[2]

[1] Urcid and Joyce 2014: 160, 9.8.
[2] Urcid and Joyce 2014: 161, 9.9.

4.2.3 The development of Zapotec writing

With regard to the development of the script, during Period I (ca. 500-200 BC, the beginning of the Late Preclassic), one of Mesoamerica's earliest writing systems appeared in the Valley of Oaxaca along with the rising power of Monte Albán in the valley. Signs accompanied by bar-and-dot or finger numerals reflected the use of ritual and solar calendars. Other signs, both compound and simple, also emerged. Most texts in this period were short in sequence (usually two to six glyphs) associated with images on the monuments (also called *danzantes*), and there were also a small number of long texts unaccompanied by images on stelae (Stelae 12, 13, 14, 15, 17 at Monte Albán).[1] Texts recording Monte Albán's conquest of Oaxacan towns were found on a series of stone slabs on the walls of Building J at Monte Albán, which may be attributed to the expansion and influence of Monte Albán in Period II (ca. 200 BC-250 AD, the end of the Late Preclassic). The signs on these stone slabs seem to be toponymic in nature.[2] Whittaker believed that the writing system in Monte Albán appeared to decline in use by the end of Period II, and the writing of Period IIIA (ca. 250–450AD, the Early Classic) became limited to calendrical sequences and probable names of people and places. And by the Middle Classic the Zapotec writing system had largely given way to an iconographic system, and then went largely out of use in the Late Classic period.[3] But Urcid has a different opinion, claiming that the script of Period IIIA and IIIB was not a degeneration of its earlier form. In his opinion, texts of IIIB still displayx different formats, standard sequences, and reading orders.[4]

[1] Whittaker 1992: 6; Marcus 2020: 385.
[2] Whittaker 1992: 6; Marcus 2020: 386.
[3] Whittaker 1992: 6.
[4] Urcid 2001: 424.

4.3 Epi-Olmec

Currently there are about thirteen epi-Olmec texts known to scholarship.[1] These texts cover a time-span from the Late Preclassic (ca. 300 BC, Chiapa de Corzo Sherd) to the Early Classic (ca. AD 500, Cerro de las Mesas stelae), and the text length ranges from less than 10 signs (Cerro de las Mesas Stela 15) to about 550 signs (La Mojarra Stela 1, **Fig. 4.3-1**). The detailed information about these texts is shown in **Table 4.3-1**.

Name	Date	Material	Number of signs[2]
Chiapa de Corzo Sherd	ca. 300 BC	ceramic	16+/ 14+[3]
Chiapa de Corzo Stela 2	ca. 36 BC	stone	9+
Tres Zapotes Stela C	ca. 32 BC	stone	28
La Mojarra Stela 1	ca. AD 157	stone	ca. 544/ ca. 542[4]
Tuxtla Statuette	ca. AD 162	greenstone	87
Cerro de las Mesas Stela 5	ca. AD 528	stone	ca. 16
Cerro de las Mesas Stela 6	ca. AD 468	stone	18
Cerro de las Mesas Stela 8	ca. AD 533	stone	ca. 40
Cerro de las Mesas Stela 15	ca. AD 468	stone	4
O'Boyle mask	/	ceramic	27/ min. 23[5]
Teotihuacan-style Mask	ca. AD 386 - 523[6]	greenstone	104/101[7]
Alvarado Stela 1	/	stone	12-14
El Sitio Celt	Late Preclassic	greenstone	10-12

Table 4.3-1 Basic information of Epi-Olmec texts

[1] Kaufman and Justeson 2001: 2.2, 2004: 1074, 2008: 196; Houston 2004: 296; Justeson 2012; Davletshin 2014: 76-77; Strauss 2018: 132-231. The photographs with details of most these texts can be found in a FAMSI report (2006) by Jorge Perez de Lara and John Justeson (http://www.famsi.org/reports/05084/index.html), and detailed information on these texts can be found in chapter 5 of "Sculpting the narrative: the material practice of Epi-Olmec art and writing" (Strauss 2018: 132-232).
[2] If there are no special instructions, the numbers of signs are based on Kaufman and Justeson 2004: 1074, 2008: 196.
[3] Macri 2017d: 2.
[4] Strauss 2018: 160.
[5] Strauss 2018: 57.
[6] Justeson 2012: 833.
[7] Strauss 2018: 62.

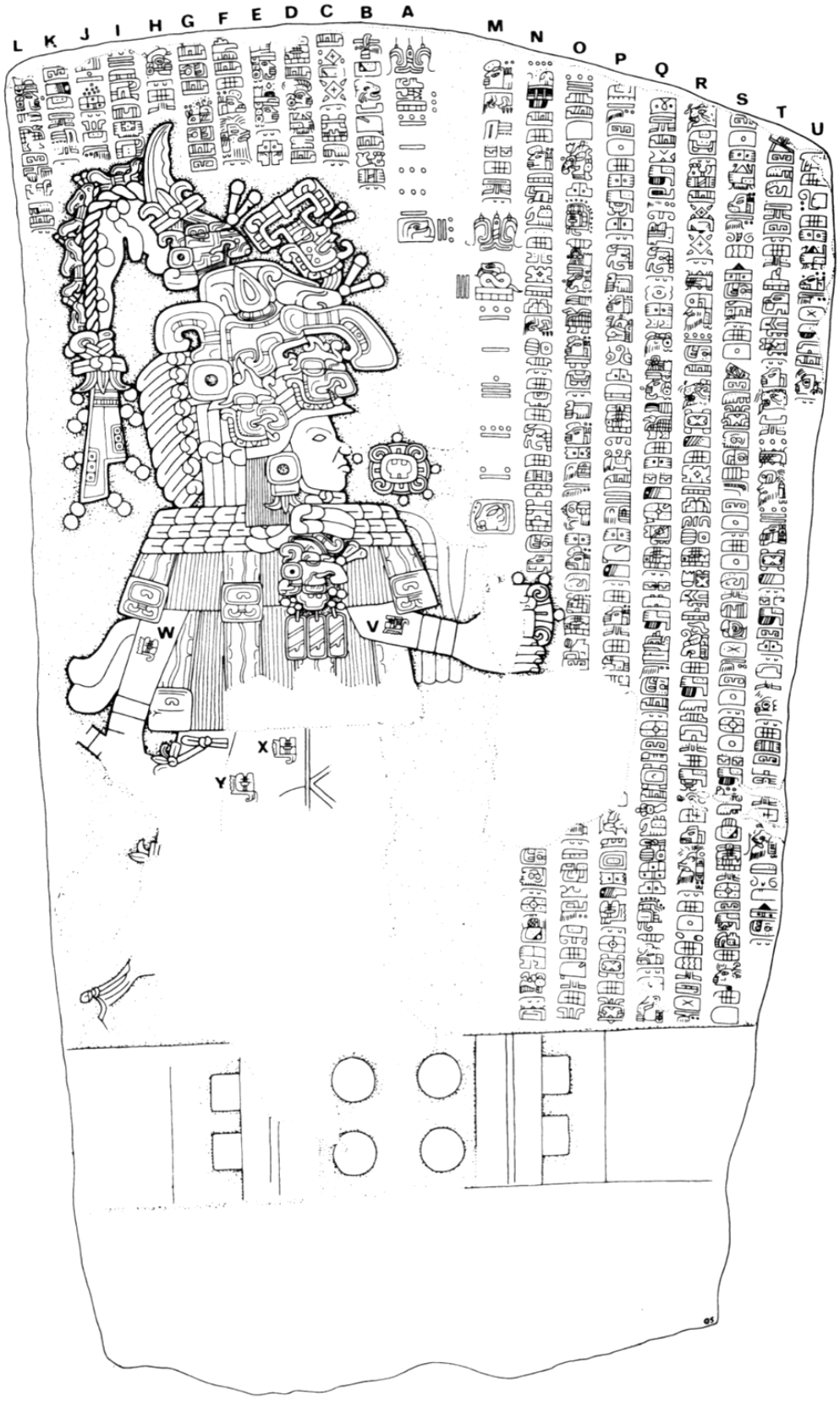


Fig. 4.3-1 Texts of La Mojarra Stela 1[1]

[1] Capitaine 1988: 7, figure 7.

However, scholars still have different views on the naming and attribution of some of the above texts:

(1) Chiapa de Corzo Stela 2

Chiapa de Corzo Stela 2 was discovered in 1961 at Chiapa de Corzo, Chiapas, bearing a series of bar-and-dot numerals and half of a day name (**Fig. 4.3-2**). The topmost numerical coefficient on Stela 2 is missing, and the reconstructed Long Count date is 7.16.3.2.13 6 "Reed", corresponding to December 11, 36 AD,[1] which is the earliest known Long Count date in Mesoamerica. Chiapa de Corzo Stela 2 is more likely to be a partial fragment of an architectural panel, so Kaufman and Justeson simply name it as "Chiapa de Corzo wall panel",[2] while other scholars still use the name Stela 2.[3]

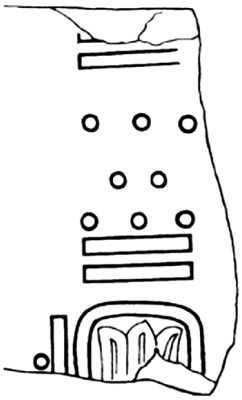


Fig. 4.3-2
Texts of Chiapa de Corzo Stela 2[4]

(2) Cerro de las Mesas Stela 15

Some scholars include Cerro de las Mesas Stela 15 (**Fig. 4.3-3**) in their corpus of epi-Olmec texts,[5] and argue that the text on this stela records the dates 1 Dog (day 363 of the old year) and 4 Reed (day 1 of the new year).[6] But some other scholars prefer to exclude Stela 15 from the epi-Olmec corpus. This is because there is no other example of a front-facing figure with goggle eyes and a mosaic costume with human hands in the epi-Olmec corpus. Moreover, the frontally-rendered figure on Stela 15 has a close resemblance to Early Classic monuments from the Maya lowlands, such as Tikal Stela 32. The two cartouched hieroglyphs and paired numerals on Stela 15 also have similarities in form to those on Stela 4 and Monument 2, which strongly resemble the format of hieroglyphic signs elaborated from the Teotihuacan corpus.[7]

[1] Justeson 2018: 64; Strauss 2018: 140.
[2] Kaufman and Justeson 2004: 1074, 2008: 196; Justeson 2018: 64.
[3] Davletshin 2014: 76; Macri 2017d: 1; Strauss 2018: 136.
[4] Macri 2017d: 4, figure 2a; see also Strauss 2018: 411, fig. 84.
[5] Kaufman and Justeson 2004: 1074, 2008: 196; Justeson 2018: 84.
[6] Justeson 2018: 84.
[7] Strauss 2018: 183-184.

Fig. 4.3-3
Cerro de las Mesas Stela 15[1]

The interpretation of the epi-Olmec script depends to a large extent on the research and hypothesis proposed by Justeson and Kaufman.[2] According to their study, the language behind these texts as an early form of Zoquean, which is a major branch of the Mixe-Zoquean language family. Kaufman has reconstructed the prehistory of Mixe-Zoquean language, based on a comparison of the modern Mixe-Zoquean languages, whose attestation in European script goes back to the 17th century.[3] Justeson and Kaufman related the textual evidence to Kaufman's reconstruction and identified these epi-Olmec texts as pre-Proto-Zoquean.[4] Moreover, the region where the script was attested is consistent with the geographical distribution of Mixe-Zoquean, while all other languages are intrusive.[5] In their later works, Justeson and Kaufman have used the term "epi-Olmec" to describe the language they had identified in these epi-Olmec texts.[6]

Epi-Olmec texts are arranged vertically, and read from top to bottom in single columns. Columns are read from left to right or from right to left.[7] For example, on the Tuxtla Statuette, all of the profile-head signs are oriented to the left, and the entire text is read from left to right. However, there are two divergent reading directions for inscriptions on La Mojarra Stela 1. Columns on the left side of the stela are read from right to left, since the profile-head signs are oriented to the right. In contrast, on the right half of the monument,

1 Justeson 2018: 84, figure 6.
2 Justeson and Kaufman 1993, 1997; Kaufman and Justeson 2001: 2.2, 2004: 1074, 2008: 196; Justeson 2012, 2018.
3 Kaufman 1963. Quote from Justeson and Kaufman 1993: 1703.
4 Justeson and Kaufman 1993: 1703.
5 Justeson and Kaufman 1993: 1703.
6 Kaufman and Justeson 2004: 1071-1108, 2008: 193-230.
7 Kaufman and Justeson 2004: 1075, 2008: 197; Strauss 2018: 304-305.

the animate profile heads are oriented to the left, so these columns are read from left to right.

Soon after the publication of La Mojarra Stela 1 in 1988, Martha J. Macri and Laura Stark began work on the texts of the Tuxtla Statuette and La Mojarra Stela 1.[1] They first worked out a sign list[2] for the La Mojarra Stela Conference,[3] after which a modified sign catalog was published in 1993, in which they identified at least 185 distinct epi-Olmec glyphs, including the bar-and-dot numeral system.[4] When the Teotihuacan-style mask came to light in 2002, 19 new signs were added to the sign catalog.[5] Strauss has made several updates to the Macri-Stark signary in her recent work.[6] After analyzing the five longest texts in the epi-Olmec corpus (that is, La Mojarra Stela 1, the Teotihuacan-style Mask, the Tuxtla Statuette, the O'Boyle mask, and the Chiapa de Corzo Sherd), Strauss pointed out that there are about 224 signs in the epi-Olmec hieroglyphic corpus and the number of potential phonetic signs might be at least 55. Based on the ratios of sound signs and word signs from ancient Egyptian and Hittite, Strauss has estimated that the total inventory of signs in epi-Olmec writing is at least 400 signs, with 50 or more carrying a phonetic value.[7]

Epi-Olmec signs are logosyllabic in nature, consists of logograms and syllabograms.[8] Epi-Olmec logograms represent lexical items or their stems, and usually the form of a logogram relates to its meaning.[9] For example,

jama
day; animal spirit companion

MS 172

tuki
turtle

MS 158

Phonetic signs in epi-Olmec inscriptions represent syllables. Over half of these signs represent an open syllable (CV), consisting of a consonant and a following vowel.[10] Some syllabograms are alleged to represent closed syllables,[11] such as,

[1] Macri 2017a: 1.
[2] Macri and Stark 1991.
[3] The conference was sponsored by the Pre-Columbian Art Research Institute and the de Young Museum in San Francisco, in October of 1990.
[4] Macri and Stark 1993.
[5] Macri 2017a.
[6] Strauss 2018: 288-324.
[7] Strauss 2018: 302-303.
[8] Justeson and Kaufman 1993: 1707, Kaufman and Justeson 2001: 2.4, 2004: 1075, 2008: 197.
[9] Kaufman and Justeson 1993: 1707, 2001: 2.4, 2004: 1075-1076, 2008: 197.
[10] For a epi-Olmec syllabary see Kaufman and Justeson 2008: 198.
[11] Kaufman and Justeson 2001: 2.6, 2004: 1076, 2008: 198.


kak

MS 54


pak

MS 109


p~~u~~k

MS 28

Grammatical suffixes are spelled by a single syllabic sign in epi-Olmec texts,[1] for instance,


-ji
completive
dependent

MS 138


-pa
incompletive
independent

MS 143

In the epi-Olmec script, logograms and syllabograms are often combined, and the phonetic signs spell out part or all of the logogram, or of grammatical elements attached to it. The phonetic signs placed in front of the logograms spell the initial sounds of the logogram, and phonetic signs placed behind the logograms spell the final sounds.[2]

For more details about the interpretive research on the epi-Olmec script, see discussions in, for example, Macri and Stark 1993; Kaufman and Justeson 2001, 2004, 2008; Justeson 2018; Strauss 2018. Moreover, interpretations of texts on La Mojarra Stela 1, the Tuxtla Statuette, the O'Boyle mask, Chiapa de Corzo Sherd can be found in *Epi-Olmec Hieroglyphic Writing and Texts*.[3] An epi-Olmec vocabulary, including about 115 roots and 30 affixes, is attached to this work.[4] Interpretation of texts on the Teotihuacan-style Mask can be found in Justeson's recent work.[5]

[1] Kaufman and Justeson 2001: 2.9.
[2] Kaufman and Justeson 2001: 2.10.
[3] Kaufman and Justeson 2001: 2.34-2.89.
[4] Kaufman and Justeson 2001: 2.89-2.98.
[5] Justeson 2018: 97-116. For details see discussion in **5.3.2.**

4.4 Maya

The Maya script was in active use for about two thousand years (ca. 300 BC-1700 AD) in the region traditionally known as the "Lowland Maya area",[1] which extends over the lowlands of present-day Guatemala, Belize, southeastern Mexico (Yucatan, Campeche, Quintana Roo, Chiapas, and Tabasco) and parts of northwestern Honduras.[2]

According to the statistics, there are more than 10,000 objects,[3] discovered from over 500 archaeological sites,[4] bearing Maya inscriptions.[5] The vast majority of available texts comes from the Late Classic, and ca. 300 to 400 texts are kown from the Early Classic, and perhaps a dozen are known from the Preclassic.[6] Classic inscriptions have survived on various media. Most Classic Maya texts are preserved on stone monuments, such as stelae and altars, and also could be found on architectural sculpture, such as lintels, door jambs, and stairways. These texts are mainly historical in content, including the biographies of political elites, which normally contain the dates of their birth, marriage, accessions to the throne and death or burial.

Moreover, the extant corpus also includes texts painted and carved on ceramics, which designate the ritual substances for which they served as containers and the names of the owners of the vessels, and the artists who had painted or carved the texts. In addition, portable objects, such as pendants, earspools, flares of jade, shell trumpets, animal bones and sting-ray spines have also been used as media for Maya writing. In the Postclassic period (ca. 900 AD), Maya scribes began to create screen-fold books (or codices) instead of recording monumental inscriptions. Four Maya codices from the Postclassic period have survived, three of which have long been accepted as authentic. These are now known as the *Codex Dresden*, *Codex Madrid*, and *Codex Paris*.[7] The fourth, *Códice Maya de México*, previously known as the *Grolier Codex*, has now been authenticated by iconographic, physical, and

[1] There are extensive academic works on Maya writing. For more details about the history of decipherment of Maya writing in the 19th and 20th centuries see discussions in Coe 1992, 2012; for the recent important advances in Maya studies see discussions in Houston and Martin 2016; a detailed overview of language in the Classic Maya script can be found in Law and Stuart 2017; for a detailed analysis of Mayan portable texts in the Late Preclassic period see Mora-Marín 2001.

[2] Coe and Van Stone 2005: 11; Palka 2010: 225; Stone and Zender 2011: 8; Grube 2012: 845; Houston and Martin 2016: 443; Law and Stuart 2017: 128; Prager et al. 2018: 65.

[3] Law (2015: 163) argues that corpus of Maya hieroglyphic texts includes ca. 15,000 texts.

[4] A checklist of archaeological sites with Maya hieroglyphic inscriptions is published on https://mayawoerterbuch.de/archaeologicalsites/ by Christian Prager, Sven Gronemeyer, Elisabeth Wagner, Mallory Matsumoto and Nikolai Kiel.

[5] Prager et al. 2018: 65-66.

[6] Law 2015: 163.

[7] Bricker 2008: 165-166; Palka 2010: 225; Grube 2012: Chapter 64; Law 2015: 163; Law and Stuart 2017: 128; Prager et al. 2018: 65.

chemical studies.[1] But it is worth noting that, due to the humid tropical climate, numerous of Maya texts written on perishable materials, such as wood, fabric, palm leaves, human skin, have not been preserved.[2]

With regard to the language behind the Maya script, Sir Eric Thompson (1950) argued that ancient Maya texts were written in some form of Ch'olan instead of Yukatek Maya, which had been assumed to be the language behind the Maya inscriptions for almost a century.[3] More discussions about Ch'olan languages appeared in the process of the phonetic decipherments of Maya script in the 1970s and 1980s.[4] Now most scholars see Maya inscriptions as being written in "Classic Mayan", an ancestral form of Eastern Ch'olan (also called "Classic Ch'olti'an"), and Ch'olti' and Ch'orti' are its direct descendants. The former was once spoken in the Motagua Valley but became extinct in the 17th century, and the latter is now still spoken by Maya living in a region lying astride the Guatemala-Honduras border.[5]

Signs in the Maya script were arranged in glyph blocks. These glyphs blocks are generally read from top to bottom and left to right, in paired columns. Shorter texts in single lines are read from top to bottom or left to right. Most glyphs are compounds, containing more than one element. These elements could be placed side-by-side or on top of each other (affixation); could merge into a single sign (conflation); two or more elements could partially or completely overlap (ligature); or one could be inserted into the other (infixation). The largest element is called the main sign, while the smaller ones attached to it are affixes. The preposed ones are prefixes and superfixes, and the postposed ones are postfixes and subfixes. So within individual glyph blocks, a general reading order follows a rule of left-to-right and top-to-bottom.[6]

4.4.1 Early Maya writing

The earliest known examples of Maya hieroglyphic writing were discovered at San Bartolo, Guatemala. This Maya site reveals seven major constructions phases that span 400 BC to 100 BC, and the third earliest phase is labeled Sub-V. During the excavation from 2005 to 2010, 249 fragments of lime plaster with evidence for painted or incised design from Sub-V context.[7] According to this sealed context, these fragments are assigned to ca. 300-200

[1] Coe et al. 2015.
[2] Houston 2004: 300; Bricker 2008: 166; Palka 2010: 225; Grube 2012: Chapter 64.
[3] Coe and Van Stone 2005: 15.
[4] Justeson and Campbell 1984.
[5] Coe and Van Stone 2005: 15; Palka 2010: 225; Grube 2012: Chapter 64; Coe and Houston 2015: Chapter 1; Houston and Martin 2016: 450; Law and Stuart 2017: 128-133; Prager et al. 2018: 67.
[6] Coe and Van Stone 2005: 17; Bricker 2008: 168; Palka 2010: 226; Grube 2012: Chapter 64; Coe and Houston 2015: Chapter 9; Law and Stuart 2017: 130; Prager et al. 2018: 68.
[7] Stuart et al. 2022: 1.

BC.[1] Among these fragments, 11 are painted or incised with glyphic images, and fragments #4778 and #6366 are the ones worth mentioning.

The joined fragments #4778 (**Fig. 4.4-1**) have hieroglyphic signs in a vertical arrangement. The first glyph represents a bar-and-dot number 7 (the left dot of the number is missing) above a deer head. The dear head is surrounded by a simple cartouche, which indicates that the glyph is a date of the Mesoamerican ritual calendar, "7 Deer".[2] Deer is one of the "Year Bearer" in Mesoamerican calendar, so it is possible that 7 Deer refers to a year date. The possibility that 7 Deer serves as a name of person or deity can also not be ruled out.[3] Last but least, this 7 Deer day record is the earliest securely dated calendar notation from the Maya region, so the 260-day calendar was present in the Maya region at about the beginning of the Late Preclassic period.

Fig. 4.4-1
The photograph (left) and drawing (right) of fragment #4778[4]

Fragment #6366 (**Fig. 4.4-2**) is a single masonry block bearing plaster and a vertical column of ten glyphs.[5] The only fully recognizable glyph pA7 is an early form of the sign **AJAW**, which means "king", "lord", "ruler" or "noble".[6]

There are also some controversial candidates for the earliest example of Maya writing, such as El Portón Monument 1, Takalik Abaj Altar 48 and Kaminaljuyú Stela 10. El Portón Monument 1, a sculptured monument with 11 glyphs, was discovered in 1972 at the site of El Portón in the Salama Valley, Guatemala, allegedly dating to ca. 450-350 BC (**Fig. 4.4-3**).[7] Some scholars, such as Justeson and Mathews, have argued that these glyphs can be classified into two functional categories: non-numerical signs and numerical signs, generally corresponding to "main signs" and "coefficients", as used in Classic Maya inscriptions.[8] Moreover, an oval infix is a non-depictive feature found

[1] Stuart et al. 2022: 5.
[2] Stuart et al. 2022: 7.
[3] Stuart et al. 2022: 8.
[4] Stuart et al. 2022: 7, figure 6.
[5] Saturno et al. 2006: 1281
[6] Saturno et al. 2006: 1281; Houston 2006: 1249; Palka 2010: 227; Grube 2012: 845; Justeson 2012: 835; Coe and Houston 2015: 89; Law 2015: 169.
[7] Sharer and Sedat 1976: 177, 1987: 89; Justeson and Mathews 1990: 115; Macri and Looper 2003: 4; Saturno et al 2006: 1282.
[8] Sharer and Sedat 1976: 183.

only in Maya examples of the seating sign, and the oval almost always contains either a curving vertical band or a U-shaped element. Since there is a banded oval infix on the torso of the seating sign on El Portón Monument 1, the texts on the monument are probably Mayan.[1]

Fig. 4.4-2 The photograph (left)[2] and drawing (right)[3] of fragment #6366

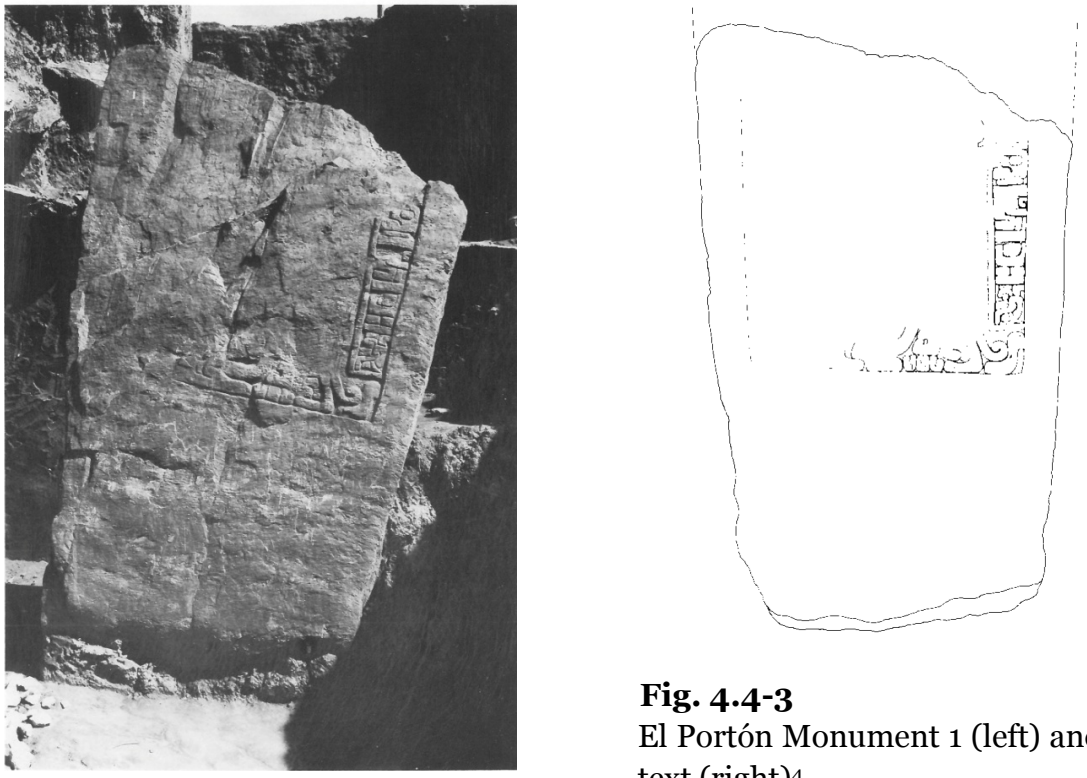


Fig. 4.4-3
El Portón Monument 1 (left) and its text (right)[4]

[1] Justeson and Mathews 1990: 115.
[2] Stuart et al. 2022: 4, figure 3.
[3] Saturno et al 2006: 1281, figure 4; see also Law 2015: 169, figure 8.2.
[4] Sharer and Sedat 1976: 188-189, figure 2 & 3.

Takalik Abaj Altar 48, a stone sculpture with four glyphs, was uncovered in 2008 at Takalik Abaj, Guatemala, allegedly dating to 350 BC (**Fig. 4.4-4**).[1]

Fig. 4.4-4 Takalik Abaj Altar 48 (left) and its text (right)[2]

Altar 48 depicts a crocodile carrying on its back a cave or portal in the shape of a quadripartite leaf symbol. Within this cave or doorway is a Maya character wearing a loincloth and headdress, seated on a throne. There are four glyphs on the side at the base of the sculpture. These four glyphs seem to refer to the seated person, probably a ruler in the Late Preclassic period.[3]

Kaminaljuyú Stela 10, bearing two glyphic panels that have a total of about 90 glyph blocks, was unearthed at Kaminaljuyú, Guatemala, allegedly dating to the Verbena phase (ca. 400-200 BC) (**Fig. 4.4-5**).[4] Scholars, such as Mora-Marín, have argued that texts on Kaminaljuyú Stela 10 are more closely related to the Classic Lowland Mayan script because of formal traits and shared calligraphic conventions and graphemes.[5]

However, these texts are not demonstrably Mayan. This is because they do not provide any unambiguous clues about their linguistic affiliation, and connections with the later Maya signary are very weak, involving only a few signs. Moreover, the four glyphs on Takalik Abaj Altar 48 are probably Mayan forms, but debate surrounds the identification of its language as Mixe-Zoquean versus Mayan.[6] Furthermore, the text on Kaminaljuyú Stela 10

[1] Doering and Collins 2011: 11; Schieber de Lavarreda and Corzo 2009: 457.
[2] Photo from Doering and Collins 2011: 36, figure 31; drawing from Schieber de Lavarreda and Corzo 2009: 463, figure 1.
[3] Schieber de Lavarreda and Corzo 2009: 457-458.
[4] Mora-Marín 2005: 64; Justeson 2012: Chapter 63.
[5] Mora-Marín 2005: 63-87.
[6] Justeson 2012: Chapter 62.

shares three signs with the Epi-Olmec script (MS49, MS 101/103, MS 129).[1]

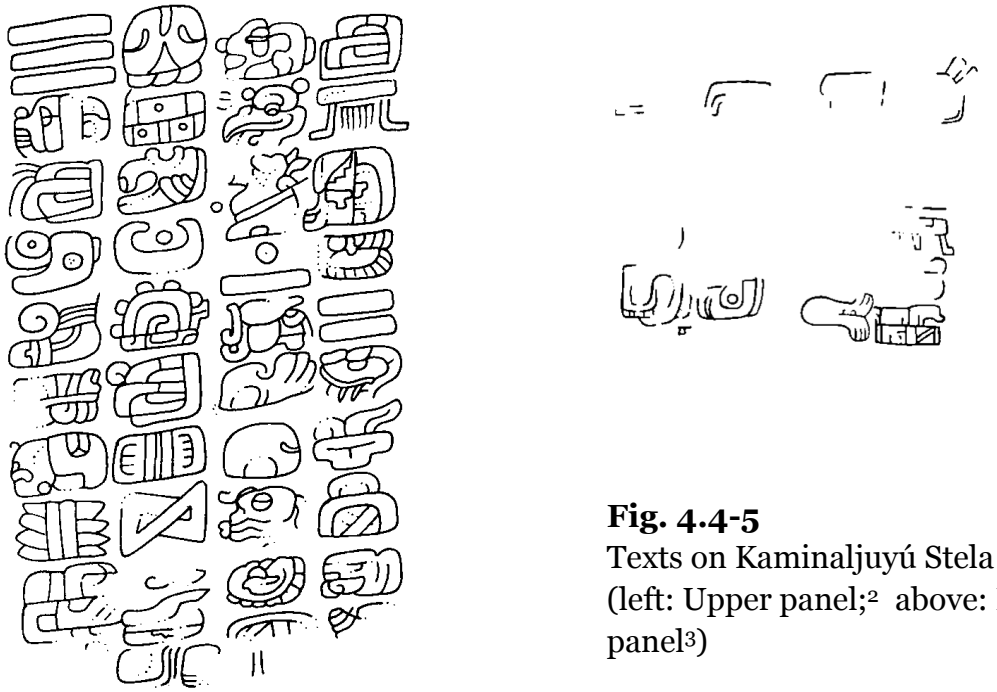


Fig. 4.4-5
Texts on Kaminaljuyú Stela 10 (left: Upper panel;[2] above: Lower panel[3])

In addition, on the basis of new and previous radiocarbon dates through the application of Bayesian statistics, as well as ceramic cross-dating, Inomata et al. claimed that the Kaminaljuyú chronology should be revised and proposed the following Preclassic chronology:[4]

Las Charcas, ca. 800-350 BC;
Providencia, ca. 350-100 BC;
Verbena, ca. 100 BC-50 AD;
Arenal, ca. 50-150 AD;
Santa Clara, ca. 150-250 AD.

Thus, these so-called Maya-style monuments, El Portón Monument 1, Takalik Abaj Altar 48, and Kaminaljuyú Stela 10, should be dated to ca. 100 BC.[5] This prevents them from being the earliest examples of Maya writing.

In addition to these monuments, there are some Maya texts on portable objects dating to Late Preclassic.[6] Mora-Marín argued that the earliest text (that is, the Dumbarton Oaks quartzite pectoral, **Fig. 4.4-6**) may date to as early as ca. 300-100 BC[7]. The characteristics and contents of the texts on these

[1] Houston 2004: 280.
[2] Houston 2004: 281, 10.3.
[3] Mora-Marín 2005: 67, figure 2.
[4] Inomata et al. 2014: 400.
[5] Inomata et al. 2014: 403.
[6] Mora-Marín 2001; Justeson 2012: Chapter 63; Law 2015: 175.
[7] Houston (2004: 304) believes that he Dumbarton Oaks quartzite pectoral dates no earlier than 100 BC.

objects conform to Mayan grammar, phonology, and vocabulary, which suggests a significant amount of continuity between the Late Preclassic and Classic scribal traditions.[1] Some other texts on small portable objects from the Maya Lowlands with no documented contemporary archaeological context can only be dated to the Late Preclassic on their stylistic characteristics, such as the jaguar figurine (the so-called Grolier Figurine) found in an Early Classic tomb at Kendal, Belize.[2]

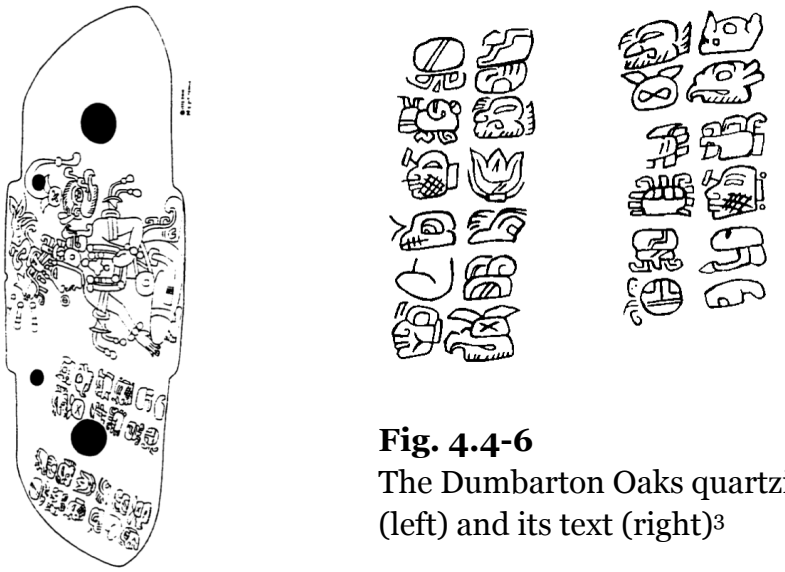


Fig. 4.4-6
The Dumbarton Oaks quartzite pectoral (left) and its text (right)[3]

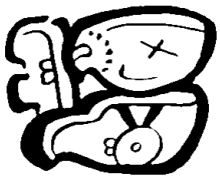
4.4.2 Maya syntax

Maya writing is logosyllabic in nature, consisting of two main sign categories: logograms,[4] standing for whole words or word-stems, and syllabograms, representing consonant-vowel (CV) syllables or simple vowels (V). The total number of syllabic signs is about 300.[5] Basic lexical roots can be written as logograms, as syllables, or as combinations of these two. If syllables are written accompanying logograms, they mostly serve as phonetic indicators, indicating their reading, or as phonetic complements, rendering affixes.[6] However, scholars' opinions vary on the total number of Maya hieroglyphic signs, for example: ca. 800, and about 200-300 signs at any given time;[7] ca.

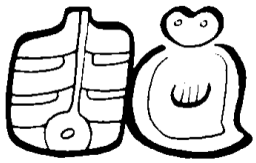
[1] Mora-Marín 2001: 264-293.
[2] Law 2015: 175.
[3] Mora-Marín 2001: 585-586, figure 6.2 & 6.3.
[4] For a list of the most common logograms in use among the Classic Maya, see Coe and Van Stone 2005: 161-166.
[5] Coe and Van Stone 2005: 18; Bricker 2008: 168; Palka 2010: 225; Stone and Zender 2011: 11-12; Grube 2012: Chapter 64; Justeson 2012: Chapter 63; Coe and Houston 2015: Chapter 9; Law and Stuart 2017: 130; Prager et al. 2018: 67. For a Maya syllabary in Early Classic see Bricker 2008: 172, figure 9.8.; a Classic Maya syllabary can be found in Coe and Van Stone 2005: 155-160.
[6] Coe and Van Stone 2005: 18; Grube 2012: Chapter 64; Law and Stuart 2017: 131.
[7] Coe 1992: 262.

650-700, and less than 400 at any given time;[1] ca. 1000, and about 300-500 at any given time.[2]

Most words in Classic Mayan end in a consonant (such as CVC and CVCVC), but in the Maya script only syllables ending in vowels have been attested, which means spellings using CV syllable signs often involve a final syllabic sign with an unpronounced vowel. The vowel used in this position can be synharmonic or disharmonic. The synharmonic spellings (that is, in which the unpronounced vowel matches the last vowel of the word) were first recognized by Knorosov in 1954. The basic rule states that CVC syllables are spelled by two syllabograms (CV-CV), with the sound of the last vowel supressed, and the vowel of the second syllabogram should match the vowel of the first.[3] For example,

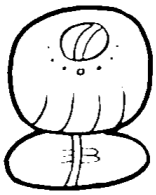


ku-ch(u)
kuch
"burden"

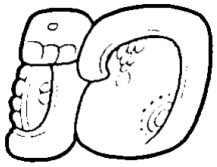


tzu-l(u)
tzul
"dog"

Disharmonic spellings have been recognized by some scholars, such as Houston et al. and Lacadena and Wichmann.[4] These scholars believe that disharmonic spellings reflect CVVC (a long vowel), CVhC (an internal /h/), and CV'C (glottal stop) syllables. For instance,



ba-k(i)
baak
"prisoner"



a-k(u)
ahk
"turtle"

Some scholars, such as Kaufman and Justeson as well as Mora Marín, have argued that disharmonic spellings relate to grammatical differences in the suffixing patterns of words.[5] The word order of Classic Mayan is verb-object-subject (VOS). For intransitive statements, the word order is verb-subject (VS), with no object. So in a Mayan text, the first glyph following the calendrical dates is the verb.[6]

[1] Bricker 2008: 168.
[2] Grube 2012: Chapter 64; Prager et al. 2018: 66.
[3] Coe and Van Stone 2005: 20; Grube 2012: Chapter 64; Justeson 2012: Chapter 63; Law and Stuart 2017: 132.
[4] Houston et al. 1998; Lacadena and Wichmann 2004.
[5] Kaufman and Justeson 2003: 29-33; Mora Marín 2001: 75-86.
[6] Coe and Van Stone 2005: 27; Law and Stuart 2017: 134.

4.5 Discussion

The presence of a writing system in the Olmec culture is still controversial. Discussions on the nature of Olmec materials have focused on the Cascajal Block, the San Andrés seal and La Venta Monument 13. In accordance with the discussions in **4.1**, none of these so-called Olmec texts is writing. This is due to the fact that no evidence can demonstrate that these graphic forms represent language. The problems in the studies of those scholars in favor of a writing system in Olmec culture are also the primary problems in the studies of early graphic recording systems in Mesoamerica.

Firstly, graphic recording consists of three subsystems: notation, iconography and writing. Notation and iconography consist of graphic elements employed to codify and represent nonlinguistic information. Writing, on the other hand, refers to graphic elements that codify and represent linguistic information.[1] However, as discussed in **1.2**, some scholars in Mesoamerican studies (outside the Maya area) prefer a broad definition of writing, which includes semasiographic systems (notation and iconography), causing confusion between writing and other graphic recording systems. Mesoamerican studies outside of the Maya area mainly focus on complex iconographies, which sometimes makes it difficult to make a sharp differentiation between iconography and writing. For example, some scholars, such as Pohl et al. (2002), Lacadena (2008) and Mora-Marín (2009), argue that the San Andrés seal (ca. 650 BC) excavated at La Venta bears Olmec writing. However, as discussed in **4.1**, in the absence of phonetic spellings and a linguistic context, it cannot be proven that the San Andrés graphs represent language. Moreover, since these graphs are graphic elements joined into a meaningful arrangement and have no fixed sequence or reading order, and therefore can be interpreted in several ways, they seem more likely to be iconography.

Moreover, as discussed in **4.1**, the basis of these studies on Olmec materials is the graphic form and the similarities between these Olmec graphs and later Mesoamerican iconography and scripts. The problem of this method is the same as that of Chinese academic studies with regard to Neolithic graphic forms.[2] The premise of explaining these Olmec graphs on the basis of later Mesoamerican iconography and scripts is that they belong to the same system, which obviously cannot be demonstrated solely by certain similarities between them.

The existence of writing in the Zapotec culture is beyond doubt, but what represents the earliest example of Zapotec writing is still in dispute. The status of San José Mogote Monument 3 is highly controversial. Opinions differ as to

[1] For more details see discussions in **1.2.1**.
[2] For more details see discussions in **3.5**.

the date of this monument.[1] Flannery and Marcus, the excavators of the monument, dated it to the Rosario phase (ca. 600 BC),[2] and many scholars, such as Houston, Urcid and Justeson,[3] have accepted this, while others strongly favor a later date, for example, a terminal Late Preclassic date (Whittaker),[4] the end of Monte Albán I (Cahn and Winter)[5] and ca. 300 BC-200 AD (Pohl et al.).[6]

The views of scholars who prefer a later date seem to make more sense. Flannery and Marcus's research is based primarily on information from their archaeological excavations, ignoring other aspects. As we all know, excavation information is very likely to contain errors, and cannot be used as conclusive evidence for judging the date of the monument in the absence of unambiguous stratigraphy. Other evidence, such as the style of the calendrical hieroglyphs, is also of great importance. For instance, as Whittaker has pointed out, the calendrical hieroglyph decorated with a curved base and U-bracket is a feature of the sign for the numeral 1 that is unattested in earlier periods.[7] Therefore, the earliest example of Zapotec writing should be the texts of Late Preclassic Monte Albán (ca. 500-200 BC).

With regard to the epi-Olmec texts, there are about thirteen currently known to scholarship and dating from ca. 300 BC (Chiapa de Corzo Sherd) to ca. 533 AD (Cerro de las Mesas Stela 8).[8] The nature of these texts is no longer in dispute, but scholars still have different opinions as to whether they have been deciphered. The current interpretation of the Epi-Olmec inscriptions depends to a large extent on the research and hypothesis proposed by Justeson and Kaufman.[9] However, Justeson and Kaufman's decipherment has been disputed by some scholars. From their perspective, Justeson and Kaufman's decipherment has not met the criteria of a successful decipherment.[10] Moreover, technical difficulties and conceptual problems have also undermined the proposed decipherment. For instance, as a linguist, Kaufman is used to working with living languages and seems to anticipate a relatively complete representation of language in ancient inscriptions.[11] Therefore, it is still too early to claim that the Epi-Olmec script has been fully deciphered, and more in-depth research is still needed.

[1] For more details see discussion in **4.2**.
[2] Marcus 1976: 44, 1980: 53-54, 1992: 35, 2020: 66; Flannery and Marcus 1976: 382, 1983: 57-58, 2003: 11803, 2015: 180–192; Flannery and Marcus and Kowalewski 1981: 80-81.
[3] Houston 2004: 292; Urcid 2005: 5; Justeson 2012.
[4] Whittaker 1983: 105.
[5] Cahn and Winter 1993: 60.
[6] Pohl et al. 2002:1984.
[7] Whittaker 1983: 104.
[8] For more details see discussion in **4.3**.
[9] Justeson and Kaufman 1993, 1997; Kaufman and Justeson 2001: 2.2, 2004: 1074, 2008: 196; Justeson 2012, 2018.
[10] Houston and Coe 2003: 151-152. For more details see discussions in **2.4** and **4.3**.
[11] Houston and Coe 2003: 154.

As discussed in **4.4**, the earliest securely dated examples of Maya writing come from San Bartolo, Guatemala, dating to ca. 300-200 BC, which is roughly contemporaneous with the earliest examples of other Mesoamerican writing systems, that is, Zapotec (ca. 500-200 BC) and epi-Olmec (ca. 300 BC). Moreover, these developed writing systems are found in geographically diverse locations, that is, the Valley of Oaxaca (Zapotec), Gulf coast (epi-Olmec) and northern Guatemala (Maya). For this reason, one possible explanation for the invention and development of writing in Mesoamerica is that a single archaic script emerged somewhere in southern Mesoamerica, perhaps the Olmec heartland, before ca. 300 BC and probably in the Middle Preclassic period. The abrupt emergence of Zapotec, epi-Olmec and Maya writing around 300 BC is perhaps to be ascribed to this archaic script or descendants of the same. However, although the most popular candidate for the archaic script is Olmec, an Olmec origin is undermined by the fact that there is no obvious writing attested for the Olmec region.

On the other hand, the possibility cannot be ruled out that writing was invented independently at the same time (ca. 300 BC or a little earlier) in these diverse areas. As discussed in **5.1**, writing is an invention rather than the product of a lengthy period of development. It may not have taken long for it to reach a developed form. Moreover, as discussed in **5.4**, the possibility still exists that early Mesoamerican writing was the result of stimulus diffusion from a region outside of Mesoamerica. Therefore, it is quite possible that the idea of writing reached these areas before ca. 300 BC through stimulus diffusion and that writing was subsequently invented. It may only have taken on or two centuries for full-fledged systems to develop from this initial stage.

5. Comparison of origins of early Chinese and Mesoamerican Writing

5.1 Writing as an invention

It is generally believed that the oracle-bone script of Late Shāng is the first fully-developed writing system in China.[1] But with regard to when Chinese writing first appeared, scholars' opinions vary and many Chinese scholars working on this topic argue that Chinese writing was invented long before the appearance of oracle-bone inscriptions.[2] Their dating of the first appearance of Chinese writing ranges from ca. 7000 BC to ca. 3000-2000 BC. From their perspective, from the time of its first appearance, Chinese writing "evolved" for thousands of years and eventually developed into a mature system in Late Shāng, capable of expressing language. The heatedly debated candidates for the earliest examples of Chinese writing are graphs found from the Jiǎhú 賈湖 (ca. 7000-5500 BC; **Fig. 3.1-1 & 2**), Bànpō 半坡 (ca. 4700-4100 BC; **Fig. 3.2-1**), late Dàwènkǒu 大汶口 (ca. 3100-2600 BC; **Fig. 3.2-9~11**) and Liángzhǔ 良渚 Culture (ca. 3300-2000 BC; **Fig. 3.3-1, 4 & 5**).[3]

However, the viewpoint held by these Chinese scholars are unreasonable. In their studies, Chinese writing is claimed to "evolve" for several thousand years after being invented, but no evidence of the alleged evolution has been provided. For example, engraved graphs found at Jiǎhú 賈湖 are argued to be the earliest examples of Chinese writing. These graphs have been interpreted by scholars on the basis of their similarities with the oracle-bone inscriptions, for instance, the graph  (M344: 18) is interpreted as mù 目 ('eye'), and the graph  (M335: 15) as rì 日 ('day; the sun') or hù 戶 ('door'). From their perspective, the Shāng oracle-bone signs are directly related to these Jiǎhú 賈湖 graphs, and the former is evolved from the latter. However, in the first place, these Jiǎhú 賈湖 graphs have not been demonstrated to be writing, because there is no evidence that these graphs represent language. Moreover, the relationship between the Jiǎhú 賈湖 graphs and oracle-bone inscriptions cannot be demonstrated, because the Jiǎhú 賈湖 graphs are isolated graphs without linguistic context, and the relationship cannot be built solely on the resemblance between isolated graphs. In addition, the time interval between these two is more than 5000 years. Over such a long period, there are no other examples of these graphs, such as  or  , so how the system of Jiǎhú 賈湖 graphs would have evolved over this 5000-year period cannot be discerned. As a result, the argument of an alleged lengthy period of evolution seems invalid. The same is true for graphs found in other Neolithic cultures, such as the Bànpō 半坡, late Dàwènkǒu 大汶口 and Liángzhǔ 良渚.[4]

[1] For the brief history and recent studies on oracle-bone inscription see discussions in **2.3**.
[2] For discussions on the origin of Chinese writing see **2.3**.
[3] For details see discussions in Chapter 3.
[4] For discussions on the materials preceding the oracle-bone inscriptions see Chapter 3.

Writing appears to be an invention rather than the final result of a lengthy period of development. According to the discussion in Chapter 3, none of the graphs found on the materials preceding oracle-bone inscriptions can be regarded as writing. The earliest secure examples of Chinese writing are attested at Èrlǐgǎng 二裏崗 (ca. 1600-1400 BC, Early Shāng). One of the two engraved bones bears 11 oracle-bone signs (**Fig. 3.4-2a**), among which the calendrical references *Yǐchǒu zhēn* 乙丑貞 and *Qīyuè* 七月 can be surely interpreted.[1] In Late Shāng texts, inscriptions usually began with the *qiáncí* 前辭 'preface' which provided information about the cyclical day of the divination, the name of the diviner, and sometimes the place of divination.[2] The month was sometimes recorded in a postface after the *mìngcí* 命辭 (the charge). The most common form of the preface is XX *bǔ* 卜 X *zhēn* 貞 'Crack-making on the day XX (the *gānzhī* cycle), X (the diviner) divined:...'. For example,

17. 乙卯卜，㱿貞：王𢀛土方征？(H 6442, Period I)

Yǐmǎo bǔ, Què zhēn: wáng huì Tǔfāng zhēng ?

Crack-making on the day *Yǐmǎo* 乙卯 (the 52nd in the *gānzhī* cycle), Què 㱿 (the diviner) divined: Should the king conduct a punitive expedition against the Tǔfāng 土方?[3]

5.1-1
Rubbing of oracle-bone H 6442 (left)

But the preface might be abbreviated in various ways and the preface of the engraved bone from Èrlǐgǎng 二裏崗 shows one of the abbreviated forms.[4] So the preface and postface of Èrlǐgǎng 二裏崗 oracle-bone can be interpreted as:

乙丑貞 *Yǐchǒu zhēn...*	On the day *Yǐchǒu* 乙丑(the 2nd in the *gānzhī* cycle), [the diviner] divined...
七月 *Qīyuè*	It was in the seventh month.

[1] For more details see discussion in **3.4**.
[2] For more details see discussion in **1.1.2**.
[3] Tǔfāng 土方 is one of the states hostile to the Shāng state.
[4] For more details on the engraved bones from Èrlǐgǎng 二裏崗 see the discussion in **3.4**.

Although scholars still have different views on the interpretation of some signs, they agree that the charge deals with some kind of sacrifice to the gods of land and grain[1] and the capture of enemies.[2] Therefore, it can be determined that the oracle-bone system had already been invented by Early Shāng (ca. 1600-1400 BC). Clearly, we have no idea of the first phase of Chinese writing, because when it first appeared at Èrlǐgǎng 二裏崗, it reflected the same characteristics as the oracle-bone inscriptions of Late Shāng, a fully-developed writing system: (1) Like the Late Shāng texts, the Èrlǐgǎng 二裏崗 text consists of the preface, the charge and the postface; (2) The signs are arranged in columns, and have the same reading order as Late Shāng inscriptions; (3) The signs have the same graphic forms as the Late Shāng signs (only a few have slight differences, which may reflect the varying shape of the sign in different periods);[3] (4) The word order is consistent with the Chinese language; (5) The inscriptions of the Èrlǐgǎng 二裏崗 and Late Shāng all deal with ritual activities.

Although the exact time when Chinese writing was first invented is not known, the oracle-bone script might not be too far removed from its initial stage of invention. One important supporting evidence is the large number of allographs in the oracle-bone inscriptions. It is estimated that more than 1000 oracle-bone signs have graphic variants and that each sign has three variants on average.[4] There are several different types of graphic variants, and, for instance, some graphic variants are combinations of different quantities of elements, such as **tuŋ-s* 𠂤 'numberous' (*zhòng* 眾) and **t-[k]ʰə(ŋ)ʔ* 𠙵 'tooth' (*chǐ* 齒):

zhòng 眾

H67 front

H32001 back

H32 front

H 31997

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chǐ 齒

H17306 back

H13652

H17300 front

H13467

[1] Lǐ Wéimíng 李維明 2003, 2006; Zhèng Jiéxiáng 鄭傑祥 2005: 6-7, 2008: 81-82.
[2] Cháng Yùzhī 常玉芝 2007: 99-100.
[3] For more details about the varying forms of signs see the discussion in Chapter 3.
[4] Liú Zhìjī 劉志基 2009; Chén Tíngzhū 陳婷珠 2010.

Some graphic variants are combinations of the same elements in a different order, such as **[ts]rək* 𠂤 'sun slanting to west; afternoon' (*zè* 昃) and **s.rəm* 𣎵 'dense trees; forest' (*sēn* 森):

zè 昃


H 20421


H 4415 front


H 21021


H 13312

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sēn 森


H 11323


Y 1288

Some graphic variants are written in opposite directions, such as **ni[ŋ]* 𠂉 'person' (*rén* 人) and **riŋ-s* 𠂤 'order; issue a command' (*lìng* 令):

rén 人


H 7312


H 6858

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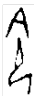
lìng 令


H 3049


H 3399

Therefore, in view of the large number and types of graphic variants,[1] it can be assumed that the Late Shāng writing system was not fixed or standardized and still in an early stage of development.

[1] For details on the allographs of oracle-bone inscriptions see the discussions in, such as Lǐ Pǔ 李圃 1997; Zhèng Zhènfēng 鄭振峰 2006; Shěn Jiànhuá 沈建華 and Cáo Jǐnyán 曹錦炎 2008; Liú Zhìjī 劉志基 2009; Chén Tíngzhū 陳婷珠 2010; Lǐ Zōngkūn 李宗焜 2012.

Similarly, there is no sign of the first phase of Mesoamerican writing systems. According to current evidence, the Mesoamerican writing systems that first appeared in the Late Preclassic are assumed to be not far removed from the time of their invention. As the first great civilization in Mesoamerica, the Olmecs (ca. 1200-600 BC) have long been believed to have been greatly influential on later Mesoamerican cultures. To date, no compelling example of Olmec writing has been found. As discussed in **4.1**, the heatedly debated candidates for consideration as Olmec writing, the Cascajal Block (ca. 1000-800 BC), the San Andrés seal (ca. 650 BC) and La Venta Monument 13 (ca. 600-400 BC or 400-200 BC), cannot be indisputedly regarded as writing. In the case of Monument 13, the brief (three-sign) sequence is late, since writing was already appeared at Monte Albán (ca. 500-200 BC). Monument 13 cannot be regarded as the first writing in Mesoamerica. And thus fails to establish Olmec primacy with regard to writing. Moreover, current evidence is not sufficient to argue that the Zapotec, Epi-Olmec and Maya writing systems are derived from Olmec iconography or writing, let alone that later Mesoamerican writing systems evolved from an Olmec predecessor.

Zapotec writing first appeared in the Valley of Oaxaca ca. 500-200 BC.[1] In this period, most texts were short in length, usually two to six glyphs, and associated with images on the monuments. The few texts that are relatively long have no accompanying image and occur on stelae. With regard to the texts in columns, the reading order is quite controversial: arguments have been made for top to bottom, bottom to top, left to right, and right to left.[2] Stelae 12, 15 and 17 of Building L, Monte Albán are good examples. Usually, a Zapotec linear text begins with date formulae, and the year date is almost always given first with other date information placed at the end.[3] On Stela 12 (**Fig. 5.1-2**), the first glyph is a year sign, and the last glyph is probably a day sign.[4] So the text should be read from top to bottom.

The first two glyphs in the right column on Stela 15 (**Fig. 5.1-3**) are very likely a day sign and numbers, followed by a trecena sign and number, and the last glyph in the left column is the bag glyph, which is usually a final glyph in a name clause, and may be a verbal or adjectival element approximately meaning “captured”;[5] or “death/ deceased person”.[6] So the text on the stela may record the capture of the prisoner on a certain day, and is supposed to be read from top to bottom and from right to left.

[1] Several scholars have argued that Monument 3 of San José Mogote is the earliest example of Zapotec writing, and date Monument 3 to ca. 600 BC. However, other scholars have pointed out that this dating is problematic, and assign it to a later date, ca. 200 BC-AD 200. For more discussions on San José Mogote Monument 3 see **4.2**.
[2] Urcid 2001: 417, 2005: 15; Marcus 2020: 84.
[3] Whittaker 1992: 15.
[4] Whittaker 1992: 18; Marcus 1992: 40, 2020: 97-100, 102-103, figure 6.51 & 6.52.
[5] Whittaker 1992: 18.
[6] Marcus 2020: 101.

Fig. 5.1-2
Text on Stela 12 of Building L, Monte Albán (left)[1]

Fig. 5.1-3
Text on Stela 15 of Building L, Monte Albán (right)[2]

The first two glyphs in the right column on Stela 17 (**Fig. 5.1-4**) are a day sign and a number, followed by a probable 20-day-period sign and number.[3] The lower sequence in the left column are a day sign and number, followed by a year sign, a year name and a number. So the text on Stela 17 is supposed to be read top to bottom and from right to left.[4] An alternative reading order proposed by Marcus begins with the year date and then the day date, which means that Stela 17 would have been read upwards and from left to right.[5] The problem with this is that the numeral coefficients would be still have to be read after the year and day names, which would result in a reading order that moves both up and down, phrase by phrase. Clearly, either the sign arrangement or the reading order of the earliest attested Zapotec texts is not standardized, so it is very likely that the development of the Zapotec script is still in an early stage in the Late Preclassic and not far from the time of its origin.

[1] Caso 1947: 44, figure 10; see also Marcus 1992: 39, 2.10, 2020: 102-103, fig. 6.51 & 6.52.
[2] Caso 1947: 47, figure 14; see also in Marcus 2020: 104, figure 6.54.
[3] Whittaker 1992: 18.
[4] Whittaker 1992: 18.
[5] Marcus 2020: 101.

Fig. 5.1-4
Text on Stela 17 of Building L, Monte Albán[1]

With regard to Maya writing, the earliest archaeologically dated examples (ca. 300-200 BC) have been discovered at San Bartolo, and other early texts, such as texts on small portable objects, mainly date to ca. 100 BC-AD 150. Although the formal development and elaboration of these texts suggest an earlier date of invention, they also show characteristics of the early development of writing, one of which is the limited use of rebus. Rebus is of great importance in script development, and phonetic signs form the basis of full systems of writing.[2] One of the earliest examples of rebus is attested in the use of a pocket gopher head (*baah*). In many Mayan languages, *baah* is the word for "pocket gopher", and the **BAAH** glyph is a depiction of this animal (**Fig. 5.1-5**).

Fig. 5.1-5 The variants of the **BAAH** glyph

Bah is a widespread noun root in Maya meaning "self" (and "body, person" in Chorti). It also appears as a part of some terms closely related to the concepts of imagery and representation in Mayan languages, such as *winbail*, "image", in Yucatec Maya.[3] Therefore, in some early Maya texts, the **BAAH** glyph is

[1] Caso 1947: 48, figure 15; see also in Marcus 2020: 105, fig. 6.55.
[2] DeFrancis 1989: 50; Houston 2004: 304.
[3] For more examples see Stuart 1996: 162; Houston and Stuart 1998.

used for its phonetic value to record "image", "body" or "head".[1] But the use of rebus is rare in early Maya writing, and homophones may have been more commonly used in the Classic period. Such limited use of rebus in early Maya writing indicates that Maya writing in the Late Preclassic was still in its initial stage of development.

Unlike Chinese and Mesoamerican writing, the earliest phase of writing in Mesopotamia and Egypt is clear. How long does it take to invent a writing system? The earliest phase of writing in Mesopotamia and Egypt appears to have lasted several hundred years. The world's earliest evidence of writing seems to come from Mesopotamia, and involves what is called "proto-cuneiform", which dates towards the end of the fourth millennium BC.[2] The majority of these early texts are administrative records. In the initial stage (Uruk IVa, ca. 3300-3200 BC), the texts are numerical notations and logograms that represent the objects of the transaction. Many scholars argue that the initial and primary purpose of proto-cuneiform is to communicate and store administrative data instead of representing a spoken language.[3] It took centuries to add features of grammar and syntax to the cuneiform system. From the first quarter of the third millennium, phonograms began to be increasingly significant in the system.[4] Then not until the second half of the third millennium did the sequence of signs begin to correspond with the linguistic sequence of speech.[5] Before writing was invented, there was a long history of using accounting devices (clay tokens) in Mesopotamia. Scholars, such as Schmandt-Besserat (1992, 2010), Englund (1998, 2004), Nissen (2003) and Robson (2007), have argued that the cuneiform script derived from these accounting devices. However, there is no clear evidence for the transformation from these precursors to the earliest writing. Therefore, the earliest writing in Mesopotamia appears to be an invention, and it took about 700 to 800 years to develop into a full writing system.

With regard to Egyptian writing, the earliest examples date to the end of the fourth millennium BC,[6] (that is, inscriptions from Tomb U-j at Abydos, or, as Stauder argued, place names embedded in complex visual compositions on hard-to-work prestige objects, alongside emblematic signs). The early development of writing in Egypt is supposed to be from the first appearance of the signs to the late 2nd Dynasty, ca. 2700 BC (King Djoser),[7] when the first known continuous text appeared.[8] By the mid-third millennium Egyptian

[1] Stuart 1996: 160-162; Houston and Stuart 1998; Houston 2004: 304; Mathews and Bíró: 2006; Montgomery and Helmke 2007; Stone and Zender 2011: 193; Coe and Houston 2015: Chapter 9. Various opinions on the translation of *baah* can be found in Macri and Looper 2003: 75-76.
[2] For different opinions on dating of the first appearance of the earliest writing in Mesopotamia see **2.1**.
[3] Englund 1998: 42; Nissen 2003: 71, 2015: 121; Cooper 2004: 80, 83; Michalowski 2014: 146.
[4] Englund 1998: 215; Woods 2010: 43; Michalowski 2014: 146.
[5] Cooper 2004: 81; Woods 2010: 44.
[6] For different opinions on dating of the first appearance of the earliest writing in Egypt see **2.2**.
[7] Kahl 2001: 125, 2003a: 127; Baines 2007: 117; Regulski 2018:986, 2016: 1.
[8] Kahl 2001: 125, 2003a: 127; Baines 2007: 117; Regulski 2016: 1, 2018: 986.

writing was able to record accurately the order of linguistic units.[1] No precursor of Egyptian writing is known to us, though the possibility that Egypt got the idea of writing through trade with Mesopotamia cannot be ruled out.[2] So it is very likely that the earliest Egyptian writing is an independent invention and that it took about 500 to 700 years to become a fully developed writing system.

Does all writing need several centuries for development? The traditional Cherokee script, known as the Cherokee syllabary, is the best example to show how quickly a writing system can be created from scratch. The Cherokee language is part of the Iroquoian language family,[3] which is centered on the east coast of the northern United States and southern Canada.[4] The Cherokee script was invented by Sequoyah (ᏏᏉᏯ *sikhwoya*) (ca. 1770-1843), also known by the English name George Guess (Gist, Guyst or Gyst). He was a monolingual speaker of Cherokee, and remained illiterate until he invented the syllabary.[5]

Sequoyah began to create a Cherokee script around 1809.[6] He was only exposed to the idea of writing, that is, that written signs can represent spoken language, but he had no idea of the relationships between letters and sounds. His initial concept of writing was that each word in the language could be represented by a graph and that these graphs could be transmitted across time and space.[7] In order to create a written form for the Cherokee language, Sequoyah made several attempts. He experimented first with a pictographic system, in which each word in the language was to be represented by an image. For instance, an image of a horse would not only represent the animal but also the word for the animal. However, such a pictographic system is inefficient, and requires a tremendous number of image-based signs, so Sequoyah quickly gave up his experiment with pictographs, that is, pictographic logograms.[8] His next attempt was to ascertain all the different sounds and sequences of sound in the Cherokee language with the assistance of his wife and children. In the first place, he attempted to represent these sounds with pictorial signs, but this approach failed due to the large number of signs such an open-ended system would require and the burden on memory that the system would demand of the learner.[9]

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[1] Stauder 2010: 146.
[2] For more details see discussions in **5.4**.
[3] For the grammar of Cherokee language see discussions in King 1975; Cook 1979; Scancarelli 1987; Montgomery-Anderson 2015.
[4] Duncan and Riggs 2003: 9; Montgomery-Anderson 2018: 169.
[5] Foreman 1938: 3; Walker and Sarbaugh 1993: 70-71; McLoughlin 1995: 39; Scancarelli 1996: 587; Montgomery-Anderson 2015: 4; Carroll 2017: 31.
[6] Foreman 1938: 4-5; Walker and Sarbaugh 1993: 71; Scancarelli 1996: 587; Cushman 2010: 29, 2011a: 255, 2011b: 625; Carroll 2017: 34-37; Montgomery-Anderson 2018: 170. Some scholars, such as Stan Hoig, believe that Sequoyah started to create the Cherokee Syllabary in 1812 (Hoig 1995: 32).
[7] Cushman 2010: 30.
[8] Hoig 1995: 32; Cushman 2010: 32.
[9] Foreman 1938: 22; Foster 1885: 97-98; Hoig 1995: 35; Cushman 2010: 32-33.

Sequoyah's final attempt was to break down the sounds of the Cherokee language into syllables and develop a system of signs for these syllables. In 1821, Sequoyah completed and demonstrated his syllabary in public (**Fig. 5.1-6**).[1] The Cherokee syllabary comprises of 85 signs,[2] and these signs represent syllables consisting of a vowel or a combination of a consonant and a vowel. For example, the word "Cherokee" is spelled as ᏣᎳᎩ *tsa-la-ki/ ja-la-ki.*[3] The sign Ꮝ is the only exception that simply represents the consonant /s/. The syllabary marks no distinctions of vowel length and tone, and aspiration is marked only occasionally.[4]

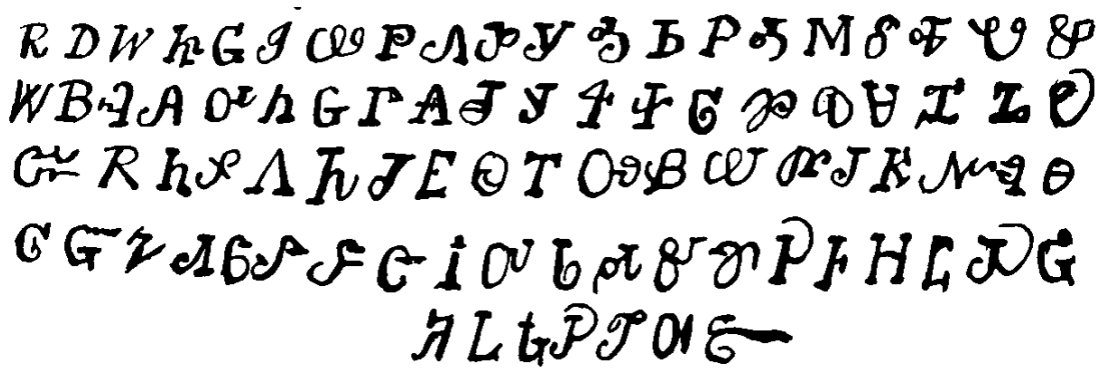


Fig. 5.1-6 Sequoyah's arrangement of the Cherokee syllabary[5]

In 1827, the syllabary was standardized in print.[6] The signs were made more suitable for typeface and rearranged following the orthographic rules of the Latin alphabet by Samuel A. Worcester (AD 1798-1859). This rearranged syllabary (**Fig. 5.1-7**) was published on 21 February 1828 in the first issue of *The Cherokee Phoenix*, the first Native American newspaper in Cherokee and English.[7] The signs in the first row of the syllabary chart are the six vowels used in the Cherokee language. Other syllables for consonants ending with the same vowel sound are included in the same column.[8] Compared with the current Cherokee syllabary (**Fig. 5.1-8**), Worcester's syllabary has only one discrepancy in the form of the sign that represents the syllable [do]: in the

[1] Foster 1885: 98; Foreman 1938: 11, 22-23; Walker and Sarbaugh 1993: 71; Scancarelli 1996: 587; Cushman 2010: 33-35; 2011a: 255, 2011b: 625; Carroll 2017: 34-37; Montgomery-Anderson 2015: 4, 2018: 170.
[2] The original syllabary consisted of 86 signs, but one sign was dropped later since there was no significant difference between this sign and two other ones in phonetic values.
[3] Montgomery-Anderson 2015: 93.
[4] Foreman 1938: 11; Scancarelli 1996: 590; Bender 2002: 25; Montgomery-Anderson 2015: 93-94, 2018: 171.
[5] Foster 1885: 112; for Sequoyah's arrangement of the Cherokee syllabary see also, for example, Scancarelli 1996: 589, figure 58.
[6] Foreman 1938: 14; Cushman 2011a: 255, 2011a: 256; 2011b: 625.
[7] Walker and Sarbaugh 1993: 73; Bender 2002: 4; Cushman 2010: 43, 2011b: 625.
[8] Cushman 2010: 625-626, 2011a: 266; Montgomery-Anderson 2018: 172.

current version, the form is V, but in the 1928 version, the form is Λ.[1] The Cherokee syllabary spread rapidly, and according to one estimate, the Cherokee literacy rate reached 90 percent in the early nineteenth century.[2]

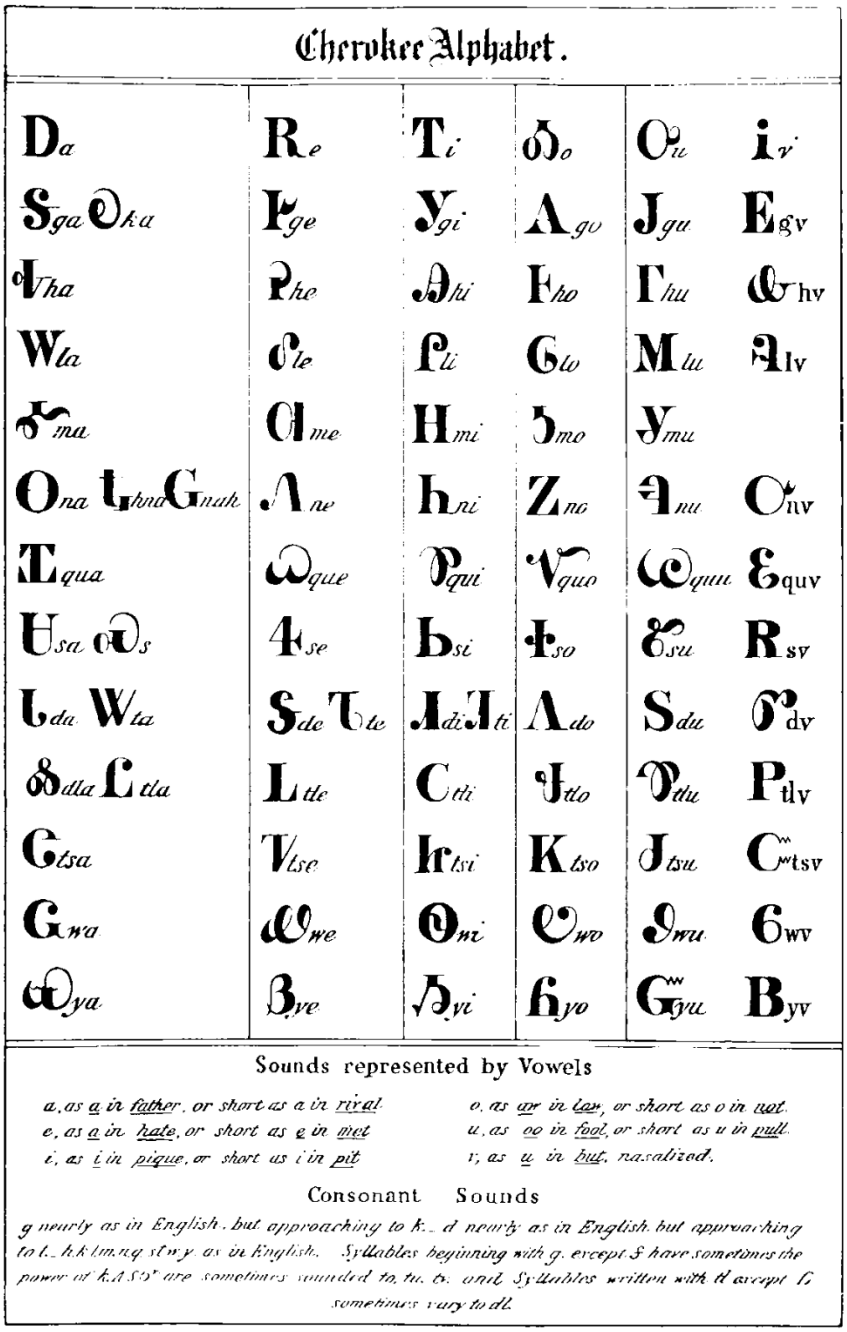


Fig. 5.1-7
Cherokee syllabary by Samuel A. Worcester[3]

[1] Walker and Sarbaugh 1993: 72-73. The Cherokee syllabary has undergone some modifications during its nearly 200-year existence; for the early history of the syllabary see Walker and Sarbaugh 1993: 70-94; for its recent history see Cushman 2011b.

[2] Montgomery-Anderson 2015: 5.

[3] Cushman 2011b: 626, figure 1; for the arrangement of the Cherokee syllabary by Samuel A. Worcester see also, e.g. Walker and Sarbaugh 1993: 76, figure 3, Bender 2002: 4, figure 1; or Cushman 2010: 43, figure 2.1, 2011a: 257, figure 1.

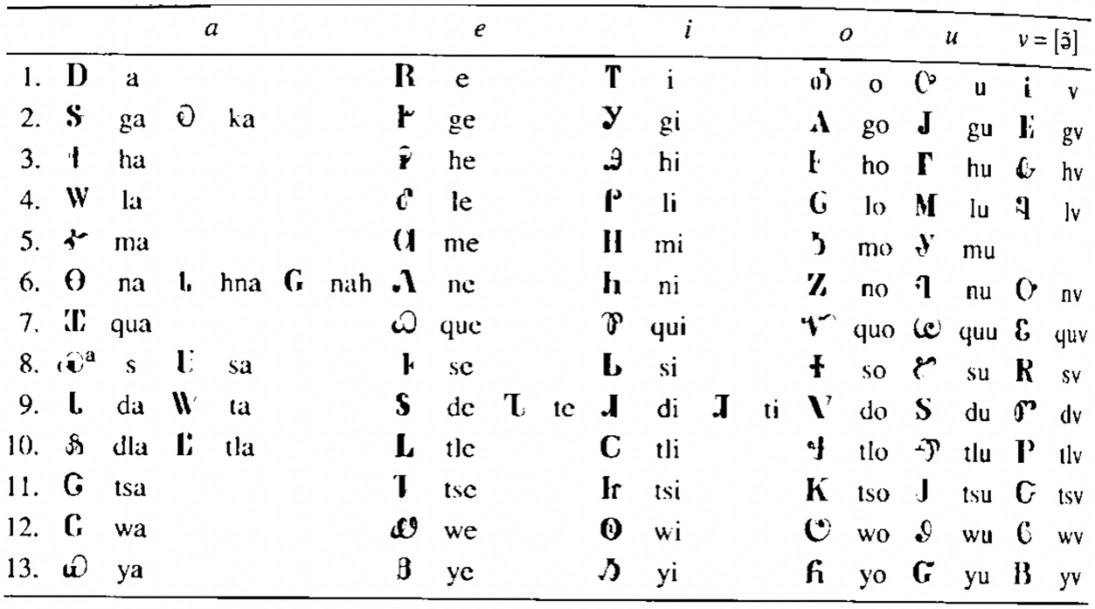


Fig. 5.1-8 The Cherokee syllabary[1]

As discussed above, the Cherokee script is the best-documented example of a community borrowing the idea of writing from outsiders and creating its own writing system from scratch. It took Sequoyah about twelve years to create the script for the Cherokee language. It can, therefore, be argued that when the inventor has been exposed to the idea of writing and begins to create a writing system, it can be invented relatively quickly. Independently invented writing systems should also have been created in the same way.

In conclusion, at the time when Chinese and Mesoamerican writing systems first appeared, they were already elaborated systems, and we have no clear idea of the first phase of these writing systems. Moreover, an evolutionary relationship to previous graphic recording systems cannot be demonstrated. Therefore, writing seems to be an invention rather than a product of a lengthy period of development. Then how long does it take to invent a writing system? The earliest writing in Mesopotamia and Egypt indicates a timespan of several hundred years, while the Cherokee script took only about twelve years. With regard to Chinese and Mesoamerican writing, the time required for the invention cannot be determined, but given their characteristics of the initial development, for example, the large number of allographs, the unfixed and non-standard arrangement of words and the rarity of rebus usage, it is highly probable that the earliest examples of Chinese and Mesoamerican writing are chronologically close to the time of their invention.

[1] Scancarelli 1996: 588, table 53.1.

5.2 The nature of early Chinese and Mesoamerican writings

It is generally accepted that writing is the graphic representation of language.[1] Scholars have in the past argued that some early scripts, such as Chinese and Egyptian, were "ideographic", that is, thoughts were expressed directly by the signs in the script without a relationship to, or the intervention of, language. But more recent studies on the early scripts increasingly reject this viewpoint.[2] All writing systems, including the early scripts, have a strong phonetic component, no matter how pictorial ("hieroglyphic") or iconic some of the signs may look. Writing systems fundamentally consist of logograms, morphograms and phonograms. A **logogram** is a semantic sign representing an entire word with or without affixes included in the sign value. A **morphogram**, on the other hand, is a semantic sign representing a discrete unit of meaning (morpheme), which may be a lexical morpheme, such as a noun, a verb or an adjective, or a grammatical morpheme, such as an affix, a clitic or a preposition. The vast majority of semantic signs (semasiograms) are logograms, signs representing whole words, even including affixes. A **phonogram** is a phonetic sign representing a sound or units of sound (phonemes), and the basic categories of phonograms are letters and syllabograms.[3]

5.2.1 Early Chinese writing

In modern Chinese, each sign represents a single morpheme and, therefore, can be called a morphogram. For example, in the word *tāmen* 他們 'they', the sign *tā* 他 represents the morpheme for 'he or she', and the sign *men* 们 is an affix for the plural. But early Chinese can probably be called logographic because each sign represents a word, regardless of how many morphemes it contains. For example, the oracle-bone sign **m-bi[t]-s* 𠂤 'nose' (*bí* 鼻) (see below) is a logogram representing one word consisting of three morphemes, that is, a prefix, a lexemic core, and a suffix. Early Chinese writing, such as oracle-bone inscriptions, consists of logograms, secondary logograms and pseudo-logograms.

5.2.1.1 Logograms

Logograms in the oracle-bone script are the representation of lexical morphemes without explicit indication of the pronunciation of the words represented. They can be divided into two main groups: (1) depiction of objects or parts of objects, and (2) depiction of attributes, states or actions.

[1] For more discussions on the definition of writing see **1.2**.
[2] DeFrancis 1989; Houston 2004; Whittaker 2011.
[3] Whittaker 2011: 936-937, and personal communication.

Moreover, a semantic or phonetic indicator may sometimes be embedded in a logogram to indicate the semantic category or the reading of the sign. In addition, there are some abstract logograms derived from numerical notation and iconography at the time the script was invented.

1. Depiction of items or parts of items:

oracle-bone sign	modern sign	Old Chinese[1]	modern pronouciation	meaning
	水	**s.tur?*	*shuǐ*	'water'
	鹿	**mə-rˤok*	*lù*	'deer'
	車	**[t.qʰ](r)A/ *C.q(r)a*	*chē*	'chariot'
	羊	**ɢaŋ*	*yáng*	'sheep'

2. Depiction of attributes, states or actions:

oracle-bone sign	modern sign	Old Chinese	modern pronouciation	meaning
	從	**[dz]oŋ*	*cóng*	'to follow'
	(Depiction of one person following another.)			
	獲	**m-qʷˤrak*	*huò*	'catch (v.)'
	(Depiction of a bird caught by one hand.)			
	及	**[m-k-]rəp*	*jí*	'reach to'
	(Depiction of one person reached by one hand.)			

[1] This is the Baxter-Sagart reconstruction (see especially Baxter and Sagart 2014, updated at http://ocbaxtersagart.lsait.lsa.umich.edu/ October 2020).

宿 **[s]uk* *sù* ‘spend the night’

(Depiction of one person sleeping on a bed in a house.)

3. Logograms with a semantic or phonetic indicator

A semantic or phonetic indicator may sometimes be embedded in a logogram to indicate the semantic category or the reading of the sign. For instance, the word **b(r)[ə]m-s*[1]/ **blums*[2] ‘phoenix’ is mostly written as  (鳳 *fèng*) in the oracle-bone inscriptions of Periods I and II, depicting a phoenix. Apart from representing the word **b(r)[ə]m-s/ *blums* ‘phoenix’ (鳳 *fèng*),[3] this PHOENIX sign is also used via rebus as a secondary logogram to write the nearly homophonous word **prəm*[4]/ **plum*[5] ‘wind’ (*fēng* 風), for example:

18. 卜：乙亥不風？
乙亥其風？ (H 10020, Period I)

Bǔ: Yǐhài bù fēng ?
Yǐhài qí fēng ?

Crack-making: Will it not be windy on the day *Yǐhài* 乙亥 (the 12th in the *gānzhī* cycle) ?
Will it be windy on the day *Yǐhài* 乙亥 (the 12th in the *gānzhī* cycle)?

19. 貞：翌壬辰不其雨？(H 12921 front)
壬辰，允不雨，風。 (H 12921 back, Period I)

Zhēn: Yì Rénchén bù qí yǔ?
Rénchén, yǔn bùyǔ, fēng.

[The diviner] divined: Will it not rain on the next day *Rénchén* 壬辰 (the 29th in the *gānzhī* cycle)?
It indeed didn't rain on the day *Rénchén* 壬辰 (the 29th in the *gānzhī* cycle), but it was windy.

[1] Behr 2021. Email from Behr to Whittaker on 20 Dec. 2021.
[2] Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 324.
[3] For more discussions about *fèng* 鳳 see Yú Xǐngwú 于省吾 1996: 1706-1714 (oracle-bone inscriptions); Jì Xiǎoshēng 季曉昇 2010: 309-310.
[4] Baxter and Sagart 2014: 195, 309, 310, 337, 2020: 29.
[5] Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 324.

But in later oracle-bone texts, a phonetic indicator 𠂤 is embedded in the PHOENIX sign  to indicate the phonetic value.[1] Many scholars have argued that the oracle-bone sign 𠂤 is a depiction of a tray or plate (with high legs), and it was created to represent the word **[b]ˤan*[2]/ **baan*[3]/ **bân*[4] 'tray, plate' (*pán* 盤),[5] However, this view is problematic, since there is little similarity in the reading of **prəm/ *plum* (*fēng* 風) and **[b]ˤan/ *baan/ *bân* (*pán* 盤) in old Chinese. Then it makes little sense to add the so-called TRAY sign (**[b]ˤan/ *baan/ *bân*) to the PHOENIX sign (**b(r)[ə]m-s/ *blums*) to cue the reading of the word **prəm/ *plum* 'wind' (*fēng* 風), so the original meaning of the sign 𠂤 is unlikely to be 'tray, plate'.

A more credible possibility is that the oracle-bone sign 𠂤 is the depiction of a sail to represent the word **bom*[6]/ **bam*[7] 'sail' (*fān* 帆).[8] But there is no example of this sign representing 'sail' found in the oracle-bone script. The sign for 'sail (n./v.)' was first attested in texts of Hàn Dynasty, for example:

① 然後方餘皇，連舸舟，張雲帆，施蜺幰。[9]

Ránhòu fāng yúhuáng, lián qióngzhōu, zhāng yúnfān, shī níchóu.

Then the big ship lined up with the boat, hoisted cloud-like sails, and spread iridescent curtains.

② 隨風張幔曰帆。[10]

Suífēng zhāngmàn yuē fān.

To hoist sails in the wind is called sailing.

---

[1] Lǐ Xiàodìng 李孝定 1970: 1366; Yú Xǐngwú 于省吾 1999: 1714; Bottéro 2004: 254; Xú Zhōngshū 徐中舒 2014: 428; Tāng Kějìng 湯可敬 2018: 523.

[2] Baxter and Sagart 2020: 82.

[3] Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 277.

[4] Schuessler 2009: 261.

[5] For discussions about *pán* 盤 see Yú Xǐngwú 于省吾 1996: 3166-3168 (oracle-bone inscriptions); Hé Línyí 何琳儀 1998: 1058 (in texts of Warring States period); Wáng Wényào 王文耀 1998: 284 (bronze inscriptions); Chén Chūshēng 陳初生 2004: 826 (bronze inscriptions); Tāng Kějìng 湯可敬 2018: 1224.

[6] Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 324..

[7] Schuessler 2009: 353.

[8] Karlgren 1964: 166; Hé Línyí 何琳儀 1998: 1058; Huáng Dékuān 黃德寬 2007: 3972; Whittaker 2021. Hé Línyí 何琳儀 (1998: 1058) and Huáng Dékuān 黃德寬 (2007: 3972) only argue that the sign may a drawing of sail. Whittaker's view is Personal communication on November 2021.

[9] *Hòuhàn shū* 60 • *Mǎ Róng lièzhuàn* (Fàn Yè 範曄 2012: 1964).

[10] *Shì míng* 7 • *Shì chuán* 釋名 7 • 釋船 (Liú Xīn 劉熙 2016: 112).

The SAIL sign (**bom/ *bam*) in the oracle-bone texts is in all likelihood a pseudo-logogram and was almost certainly first created to be used for a phonetic value,[1] to write homophonous words. So this is why the SAIL sign (**bom/ *bam*) was embedded in the PHOENIX sign (**b(r)[ə]m-s/ *blums*) to indicate the reading of the word **prəm/ *plum* 'wind' (*fēng* 風).

Moreover, except when working as a phonetic indicator, the SAIL sign was also used to write the name of an ancestor Pán Gēng 般/盤庚, the son of Zǔ Dīng 祖丁, also called Zǔ Gēng 祖庚 or Fù Gēng 父庚 in the oracle-bone texts. The word **bom/ *bam* 'sail' (*fān* 帆) and **baan*[2]*/ *bân*[3] (*pán* 般) or **[b]ʕan/ *baan/ *bân* (*pán* 盤) are nearly homophonous. In oracle-bone texts, Pán Gēng 般/盤庚 is sometimes written as  ,[4] but in most cases, it is written as  .[5] In this case, the two signs and were used to write the same word in oracle-bone texts. The right part of the sign depicts something held in a hand, which most likely refers to hoisting the sail or paddling. Firstly, the sign  was used to represent the word **phoog*[6] 'strike, beat (v.)' (*pū* 攴), in oracle-bone script.[7] For example:

20. 丙辰，攴禾。(H 22536, Period I)

Bǐngchén, pū hé.

On the day *Bǐngchén* 丙辰 (the 53th in the *gānzhī* cycle), 'beat' (thresh) the grain.

The sign *pū* 攴 might be phonetically and semantically related to the sign **pʕok*[8]*/ *poog*[9]  (*bǔ* 卜) 'divine (v.)'.[10] On the one hand, the upper part of the sign *pū* 攴 is similar to the sign *bǔ* 卜.[11] Moreover, on the other, they also have a similar pronunciation (that is, **phoog* and **pʕok/ *poog*) in Old Chinese. In addition, the sign *bǔ* 卜 is the depiction of the crack on the

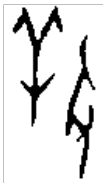
[1] See more discussion about pseudo-logogram in this chapter.
[2] Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 277.
[3] Schuessler 2009: 261.
[4] For example, B11006, D00699, H21538, H35775, H35779 and H35783.
[5] For instance, H19798, H23100 and H35773.
[6] Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 291.
[7] Yú Xǐngwú 于省吾 1999: 936; Cuī Héngshēng 崔恒昇 2001: 107.
[8] Baxter and Sagart 2014: 243-244, 2020: 8.
[9] Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 291.
[10] Personal communication with Whittaker in December 2021.
[11] Personal communication with Whittaker in December 2021.

oracle-bone for divination. In order to facilitate the cracking process, holes are made by striking and drilling before the oracle bones are burnt. And the HAND element might work as a semantic indicator to emphasize its semantic aspect.

Furthermore, the sign *pū* 攴 (HAND_DIVINE) also appears as a component of some oracle-bone signs, and the sign **mək* 𠂤 'herd (v.)' (*mù* 牧) is a good case in point.[1] In the oracle-bone script, the sign *mù* 牧 has two variants: one consists of the OX element and the HAND_DIVINE element, such as H 376 front, and the other consists of the SHEEP element and the HAND_DIVINE element, such as H 32982 (**Fig. 5.2-1**).

OX+ HAND_DIVINE SHEEP+ HAND_DIVINE

H 376 front



H 32982

Fig. 5.2-1
Variants of oracle-bone sign 牧 (*mù*)

The OX and SHEEP elements refer to the objects of herding, and the HAND_DIVINE element most likely depicts the tools used by the herder (for example, whips or branches), or the actions of herding. Therefore, the sign *pū* 攴 seems to be phonetically and semantically related to the sign *bǔ* 卜, 'divine (v.)', used to depict a certain kind of hand-held tool or related action in the oracle-bone texts. Then the right half of the sign **baan/ *bân* 𠬜 (*pán* 般) most likely refers to hoisting the sail or paddling.

It was in the bronze inscriptions that the sign  (*pán* 般), the same as its oracle-bone form, was first attested writing the word **[b]ˁan/ *baan/ *bân* 'tray, plate', such as the Zhēn *pán* 真盤 (JC 10091/ WJC 14435) and the Shàn Zǐbái *pán* 單子白盤 (JC 10070/ WJC 14384; **Fig. 5.2-2**):

[1] For more discussions about *mù* 牧 in the oracle-bone script see Xú Zhōngshū 徐中舒 2014: 428; Cuī Héngshēng 崔恒昇 2001: 337; Yú Xǐngwú 于省吾 1999: 1531-1533.

<02> 真乍(作)寶般(盤)，其萬年，子子孫孫永寶用。[1] (Zhēn *pán* 真盤, Early/Middle Western Zhōu)

Zhēn zuò bǎo pán, qí wànnián zǐzǐ sūnsūn yǒng bǎo yòng.

Zhēn 真 (personal name) had this treasured *pán* 般(盤) (tray) made; may his sons' sons and grandsons' grandsons for myriads of years eternally treasure and use it.

<03> 單子白乍(作)寶般(盤)。[2] (Shàn Zǐbái *pán* 單子白盤, Late Western Zhōu)

Shàn Zǐbái zuò bǎo pán.

Shàn Zǐbái 單子白 (personal name) had this treasured *pán* 般(盤) (tray) made.

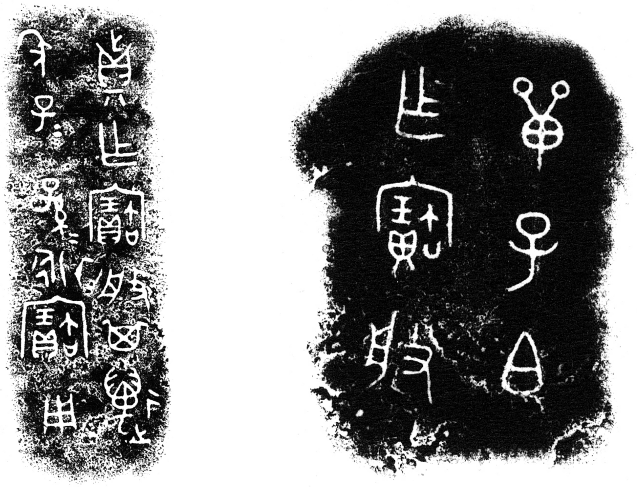


Fig. 5.2-2
Texts on the Zhēn *pán* 真盤 (left)[3] and Shàn Zǐbái *pán* 單子白盤 (right)[4]

In some cases, a semantic indicator **mraŋʔ* 𠙵 'vessel, bowl' (*mǐn* 皿) is added, and then the sign is written as 𥁕 (*pán* 盤), such as the Zēng Zhòng *pán* 曾仲盤 (JC 10097/ WJC 14430, Late Western Zhōu; **Fig. 5.2-3**):

[1] For more transcriptions see also Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001 (6): 92, 2007: 5417; Wú Zhènfēng 吳鎮烽 2012 (25): 455 (also details about excavation information and other collections).

[2] For more transcriptions see also Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001 (6): 84, 2007: 5409; Wú Zhènfēng 吳鎮烽 2012 (25): 397 (also details about excavation information and other collections).

[3] For pictures and rubbings see Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2007: 5417; Wú Zhènfēng 吳鎮烽 2012 (25): 455 (also details about excavation information and other collections).

[4] For pictures and rubbings see Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2007: 5409; Wú Zhènfēng 吳鎮烽 2012 (25): 397 (also details about excavation information and other collections).

<04> 曾仲自乍(作)旅盤,子子孫永寶用之。[1]

Zēng Zhòng zì zuò lǚ pán, zǐzǐ sūn yǒng bǎo yòng zhī.

Zēng Zhòng 曾仲 (personal name) himself had this display *pán* 盤 (tray) made, and may his grandsons' grandsons and sons' sons treasure and use it forever.

Fig. 5.2-3
Text on the Zēng Zhòng *pán* 曾仲盤 (left)[2]

In addition, Pán Gēng 盤庚 is recorded in a number of traditional Chinese texts, such as:

① 盤庚遷于殷，民不適有居。[3]

Pán Gēng qiān yú Yīn, mín bù shì yǒu jū.

盤庚 Pán Gēng moved the capital to Yīn 殷, but people were unwilling to move to that residence.

② 帝陽甲崩，弟盤庚立，是為帝盤庚。[4]

Dì Yáng Jiǎ bēng, dì Pán Gēng lì, shì wéi dì Pán Gēng.

King Yáng Jiǎ 陽甲 died, and his younger brother Pán Gēng 盤庚 succeeded to the throne, and became King Pán Gēng 盤庚.

And in some traditional texts, Pán Gēng 盤庚 is written as Pán Gēng 般庚，for example:

[1] For more transcriptions see also Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001 (6): 94, 2007: 5420; Wú Zhènfēng 吳鎮烽 2012 (25): 450 (also details about excavation information and other collections).
[2] For pictures and rubbings see Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2007: 5420; Wú Zhènfēng 吳鎮烽 2012 (25): 450 (also details about excavation information and other collections).
[3] *Shàngshū* 9 • *Pán Gēng* 尚書 9 • 盤庚 (Shànghǎi gǔjí chūbǎnshè 上海古籍出版社 1997: 168).
[4] *Shǐjì* 3 • *Yīn běnjì* 史記 3 • 殷本紀 (Sīmǎ Qiān 司馬遷 2014: 131).

> 昔成王徙洛，般庚遷殷，其所避就，皆陛下所明知也。[1]
>
> *Xī Chéngwáng xǐ Luò, Pán Gēng qiān Yīn, qí suǒ bì jiù, jiē bìxià suǒ míng zhī yě.*
>
> In the remote past, King Chéng 成 moved to Luò 洛, and Pán Gēng 般庚 moved to Yīn 殷. His Majesty knew exactly the reason for their avoiding to relocate.

Another piece of evidence showing the close relationship between the SAIL and TRAY signs (*pán* 般 and *pán* 盤) is that in later scripts, both TRAY signs have a BOAT element (**tu*  , *zhōu* 舟). Some scholars have argued that the BOAT element in the later TRAY signs is coincidental; that is, due to their similar graphic forms. In their views, the sign  in early scripts is the depiction of a tray, which is similar to the BOAT sign  in graphic form, so in later scripts the TRAY elements in the signs are all replaced by the BOAT element because of their resemblance.[2] However, as discussed above, it is not the TRAY element that was replaced by the BOAT element but an original SAIL element related to BOAT semantically and graphically that was depicted, and it is most likely that the sign  refers to 'sail' and 'boat' at the same time.

Furthermore, the signs in later scripts, such as *fān* 颿 (**bom*[3]), *fān* 颿, *fān* 䑺, *fān*  , *fān*  , were all used as alternates for the word 'sail' (*fān* 帆). For example:

> 樓船舉颿而過肆。[4]
>
> *Lóuchuán jǔfān ér guò sì.*
>
> A decorated multi-layered cruise ship raises its sails and passes various shops.

Each of these signs includes a WIND sign, which clearly indicates the close semantic and phonetic relationship between the SAIL sign and the WIND sign. So it is quite possible that the graph in question, as an indicator embedded in the PHOENIX sign to indicate the reading of the WIND sign in the oracle-bone texts, is the SAIL sign.

---

[1] *Hànshū* 75 • *Yì Fèng zhuàn* 漢書 75 • 翼奉傳 (Bān Gù 班固 1964: 3178).
[2] Lǐ Xiàodìng 李孝定 1970; Xú Zhōngshū 徐中舒 2014: 428; Tāng Kějìng 湯可敬 2018: 523.
[3] Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 324.
[4] *Wénxuǎn* 5 • *Zuǒ Tàichōng Wúdū fù* 文選 5 • 左太沖吴都賦 (Nán Dynasty, AD 420-589) (Xiāo Tǒng 蕭統 1986: 219).

In addition, in the bronze inscriptions, the SAIL sign was also used to write the nearly homophonous word **[b]rom*[1]/ **b(r)əm*[2]/ **bom*[3] 'altogether, in all' (*fán* 凡).[4] For example:

<05> 凡十又五夫。(Sànshì *Pán* 散氏盤, Late Western Zhōu, WJC 14542/ JC 10176)

Fán shíyòuwǔ fū.

There are fifteen people in total.

Therefore, the sign 𐤀 in the oracle-bone script is most likely to be the depiction of a sail representing the word **bom/ *bam* 'sail' (*fān* 帆). As a pseudo-logogram, it was almost certainly first created to be used as a phonetic value. And in the oracle-bone texts this SAIL sign (**bom/ *bam*) was embedded in the PHOENIX sign (**b(r)[ə]m-s/ *blums*) to indicate that it was to be read as the **prəm/ *plum* 'wind'. And it was also used to write homophonous (or nearly homophonous) words, such as **baan/ *bân* (*pán* 般), for the ancestor's name Pán Gēng 般/盤庚, and another form 𐤀 (*pán* 般) was a combination of the SAIL sign and a HAND_DIVINE element, together depicting the hoisting of the sail or paddling. In the bronze inscriptions, 𐤀 was first attested to represent the word **[b]ˤan/ *baan/ *bân* 'tray, plate' (*pán* 盤),[5] and in some cases, a semantic indicator **mraŋʔ* 𐤀 'vessel, bowl' (*mǐn* 皿) was added to emphasize its semantic aspect. Moreover, in the bronze inscriptions, the SAIL sign was also used to write the nearly homophonous word **[b]rom/ *b(r)əm/ *bom* 'altogether, in all' (*fán* 凡).[6] To conclude, the use of the SAIL sign 𐤀 in the early script can be summarized as follows (**Fig. 5.2-4**):[7]

[1] Baxter and Sagart 2020: 27.
[2] Gassmann and Behr 2011: 119.
[3] Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 324.
[4] For more discussions about *fán* 凡 see Zhōu Fǎgāo 周法高 1975: 7416-7420 (bronze inscriptions); Yú Xǐngwú 于省吾 1996: 2843-2850 (oracle-bone inscriptions); Hé Línyí 何琳儀 1998: 1422-1423 (in texts of Warring States period); Wáng Wényào 王文耀 1998: 30 (bronze inscriptions); Chén Chūshēng 陳初生 2004: 1085 (bronze inscriptions); Tāng Kějìng 湯可敬 2018: 1987.
[5] For discussions about *pán* 盤 see Yú Xǐngwú 于省吾 1996: 3166-3168 (oracle-bone inscriptions); Hé Línyí 何琳儀 1998: 1058 (in texts of Warring States period); Wáng Wényào 王文耀 1998: 284 (bronze inscriptions); Chén Chūshēng 陳初生 2004: 826 (bronze inscriptions); Tāng Kějìng 湯可敬 2018: 1224.
[6] For more discussions about *fán* 凡 see Zhōu Fǎgāo 周法高 1975: 7416-7420 (bronze inscriptions); Yú Xǐngwú 于省吾 1996: 2843-2850 (oracle-bone inscriptions); Hé Línyí 何琳儀 1998: 1422-1423 (in texts of Warring States period); Wáng Wényào 王文耀 1998: 30 (bronze inscriptions); Chén Chūshēng 陳初生 2004: 1085 (bronze inscriptions); Tāng Kějìng 湯可敬 2018: 1987.
[7] Personal communication with Whittaker in November 2021.

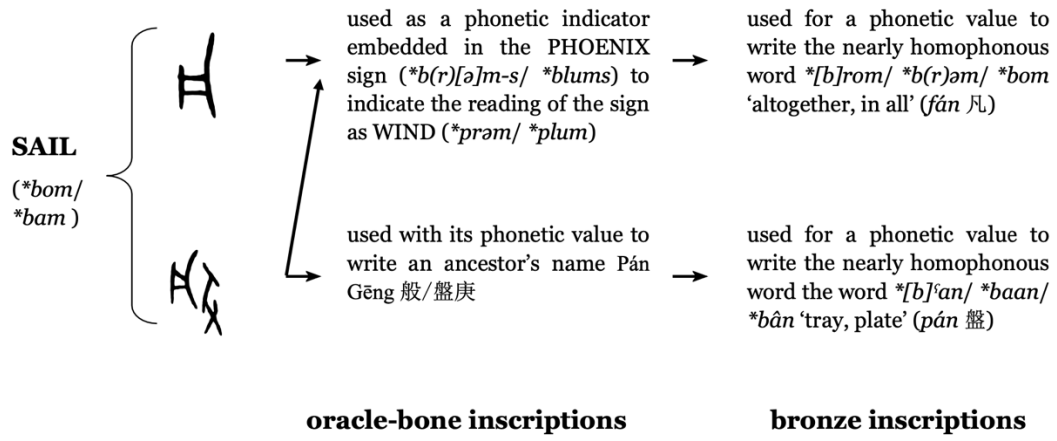
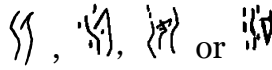


Fig. 5.2-4 The use of the SAIL sign in the early script

In some other cases, logograms are combined with semantic or phonetic elements, sharing the space of a single sign, to represent a word. These graphic elements work as a semantic or phonetic indicator to indicate the semantic category or the reading of the sign, which will become the most productive way to create unambiguous signs in the later development of the Chinese script, but in the oracle-bone script it was not yet applied systematically.[1] For instance, the word **[C.g]ˁaj*[2] 'river' (*hé* 河), is written as  in the oracle-bone texts. For example,

21. 己卯卜，出貞：今日王其往河？ (H 23786, Period II)

Jǐmǎo bǔ, Chū zhēn: jīnrì wáng qí wǎng hé?

Crack-making on the day *Jǐmǎo* 己卯 (the 16th in the *gānzhī* cycle), Chū 出 (the diviner) divined: Should the king go to the river (the Yellow River) today?

The logogram **s.tur?*  (*shuǐ* 水) 'water' indicates that the word belongs to the semantic category of water, while the sign  or  works as a phonetic indicator. Some scholars have argued that the sign represents the word **[k]ˁar*[3] 'stalk, branch; helve' (*kē* 柯) ,[4] but there is no example of this use that can be found in either oracle-bone or bronze inscriptions. Some scholars,

[1] Bottéro 2004: 254.
[2] Alternative reconstruction: **gaal* (Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 405).
[3] Alternative reconstruction: **kaal* (Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 404).
[4] Lǐ Xiàodìng 李孝定 1970: 1824; Chén Niánfú 陈年福 2001, 2007; Xú Zhōngshū 徐中舒 2014: 1185.

such as Bottéro,[1] has claimed that the phonetic indicator of the oracle-bone sign **[C.g]ˤaj*[2] 'river' (*hé* 河) is **[k]ʰˤa[j]ʔ*[3]  'may; acceptable' (*kě* 可), but all attested examples of *kě* 可 in early Chinese texts are written as (oracle-bone) or (bronze).[4] Although the sign does not appear on its own in the oracle-bone inscriptions, but rather as a component of the signs (*hé* 河) and (*hé* 何), it is probably an abbreviation or simplified form of the sign (*hé* 何), depicting a person carrying a branch or dagger-axe.[5]

Moreover, in bronze inscriptions, (*hé* 何) is written as  (Hé fù yǐ *Yǒu* 何父乙卣,[6] Late Shāng) or  (Hé zuò xiōng rì rén *Yǒu* 何作兄日壬卣,[7] Early or Middle Western Zhōu), which are the same as the oracle-bone form. In later bronze texts, a phonetic indicator **[k]ʰˤa[j]ʔ* 'may; acceptable' (*kě* 可), is added to the sign, written as  (Hé guǐ *Gài* 何簋蓋,[8] Late Western Zhōu). In the Warring States period, the sign became  (Yí'ān *Gē* 宜安戈). The word **[C.g]ˤaj* 'river' (*hé* 河) in bronze texts is written as  (Tóng *Guǐ* 同簋,[9] Middle Western Zhōu), which consists of *hé* 何 (with *kě* 可 as the phonetic indicator) and *shuǐ* 水. Therefore, in the oracle-bone and bronze texts,

[1] Bottéro 2004: 254.
[2] Alternative reconstruction: **gaal* (Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 405).
[3] Alternative reconstruction: **khaalʔ* (Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 404).
[4] For discussions about *kě* 可 see Zhōu Fǎgāo 周法高 1975: 2885-2987 (bronze inscriptions); Yú Xǐngwú 于省吾 1996: 2631-2632 (oracle-bone inscriptions); Hé Línyí 何琳儀 1998: 849-850 (in texts of Warring States period); Wáng Wényào 王文耀 1998: 79 (bronze inscriptions); Chén Chūshēng 陳初生 2004: 505 (bronze inscriptions); Jì Xiǎoshēng 季曉昇 2010: 400-401; Tāng Kějìng 湯可敬 2018: 672.
[5] For discussions about *hé* 何 see Yú Xǐngwú 于省吾 1996: 104-107 (oracle-bone inscriptions); Hé Línyí 何琳儀 1998: 853 (in texts of Warring States period); Wáng Wényào 王文耀 1998: 165 (bronze inscriptions); Chén Chūshēng 陳初生 2004: 770 (bronze inscriptions); Jì Xiǎoshēng 季曉昇 2010: 827-828; Tāng Kějìng 湯可敬 2018: 1133.
[6] For pictures, rubbings and transcriptions of Hé fù yǐ *Yǒu* 何父乙卣 (JC 04910/ WJC 12762) see Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2007: 3140; Wú Zhènfēng 吳鎮烽 2012 (23): 208 (also details about excavation information and other collections).
[7] For pictures, rubbings and transcriptions of Hé zuò xiōng rì rén *Yǒu* 何作兄日壬卣 (JC 05339) see Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2007: 3332.
[8] For pictures, rubbings and transcriptions of Hé guǐ *Gài* 何簋蓋 (JC 03761) see Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2007: 1993.
[9] For pictures, rubbings and transcriptions of Tóng *Guǐ* 同簋(JC 04271) see Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2007: 2602.

the phonetic indicator of the sign **[C.g]ˤaj*  (*hé* 河) is  (*hé* 何).[1]

Scholars have argued that the sign was created to represent the word **[g]ˤaj?*[2] 'to carry' (*hè* 荷).[3] However, there is no example of this sign representing 'to carry' found in the oracle-bone and bronze inscriptions. This sign is in all likelihood a pseudo-logogram and was almost certainly created in order to use its phonetic value to write nearly homophonous words, mainly representing the name of a person **[g]ˤaj*[4] (*hé* 何), especially a diviner in oracle-bone inscriptions, for instance:

22. 乙酉卜，何貞：王其田，亡災？ (H 28440, Period III)

Yǐyǒu bǔ, Hé zhēn: wáng qí tián, wáng zāi?

Crack-making on the day *Yǐyǒu* 乙酉 (the 22rd in the *gānzhī* cycle), Hé 何 (the diviner) divined: Will there not be a disaster if the king goes hunting?

23. 癸亥卜，何貞：旬亡禍？ (B 9975, Period III)

Guǐhài bǔ, Hé zhēn: Xún wáng huò?

Crack-making on the day *Guǐhài* 癸亥 (the 60th in the *gānzhī* cycle), Hé 何 (the diviner) divined: Will there be no disaster/distress in the next ten-day week?

Another example is the word **[ŋ](r)a*[5] 'to fish' (*yú* 漁),[6] mostly written a in the oracle-bone texts, which consists of the logograms **s.tur?* 'water'

[1] For more discussions about *hé* 河 see Zhōu Fǎgāo 周法高 1975: 6287 (bronze inscriptions); Yú Xǐngwú 于省吾 1996: 1281-1291 (oracle-bone inscriptions); Hé Línyí 何琳儀 1998: 853 (in texts of Warring States period); Wáng Wényào 王文耀 1998: 215 (bronze inscriptions); Chén Chūshēng 陳初生 2004: 956 (bronze inscriptions); Jì Xiǎoshēng 季曉昇 2010: 827-828; Tāng Kějìng 湯可敬 2018: 1547.

[2] Alternative reconstruction: **gaal?* (Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 405).

[3] Lǐ Xiàodìng 李孝定 1970: 1824; Sūn Hǎibō 孙海波 1980: 212; Xú Zhōngshū 徐中舒 2014: 884; Tāng Kějìng 湯可敬 2018: 1133.

[4] Alternative reconstruction: **gaal* (Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 405).

[5] Alternative reconstruction: ** ŋa* (Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 560).

[6] For more discussions about *yú* 漁 see Zhōu Fǎgāo 周法高 1975: 6481-6483 (bronze inscriptions); Yú Xǐngwú 于省吾 1996: 1753-1754 (oracle-bone inscriptions); Wáng Wényào 王文耀 1998: 417 (bronze inscriptions); Chén Chūshēng 陳初生 2004: 983 (bronze inscriptions); Jì Xiǎoshēng 季曉昇 2010: 855; Tāng Kějìng 湯可敬 2018: 1702.

(*shuǐ* 水) and **[r.ŋ]a*[1] 𩵦 'fish (n.)' (*yú* 魚). The WATER indicates that it is semantically related to water. The FISH works as a graphic **syllepsis**, in which a single word is used in two senses or functions simultaneously in language.[2] On the one hand, except for representing the word **[r.ŋ]a* 𩵦 'fish (n.)' (*yú* 魚), the FISH is also used as a rebus to write the nearly homophonous word **[ŋ](r)a* 'to fish' (*yú* 漁) in the oracle-bone texts. For instance:

24. 丁酉卜，賓貞：來乙巳魚(漁)? (H 223, Period I)

Dīngyǒu bǔ, Bīn zhēn: Lái Yǐsì yú?

Crack-making on the day *Dīngyǒu* 丁酉 (the 34th in the *gānzhī* cycle), Bīn 賓 (the diviner) divined: [Will the king] go fishing on the next day *Yǐsì* 乙巳 (the 42nd in the *gānzhī* cycle)?

25. 貞：其風，十月，才(在)甫魚(漁)? (H 7894, Period I-II)

Zhēn: Qí fēng, shíyuè, zài Fǔ yú?

Divined: It will be windy in the tenth month. [Will the king] go fishing at Fǔ 甫?

On the other hand, two examples (that is, H10475 and H10476)of the word **[ŋ](r)a* 'to fish' (*yú* 漁) are written as WATER_(FOUR×FISH)  in the oracle-bone texts of Period I:

26. …王漁? 十月。 (H 10475, Period I-II)

… wáng yú ? shí yuè.

… [will/ should] the king go fishing? The tenth month.

Moreover, in the bronze inscriptions of the same period the word **[ŋ](r)a* 'to fish' (*yú* 漁) is also written as WATER_(FOUR×FISH), and the Zǐ Yú *zūn* 子漁尊 (JC 05542) and Zǐ Yú *jiǎ* 子漁斝 (JC 09174) (**Fig. 5.2-5**) of Shāng period are good examples. In later oracle-bone texts, the sign was also written as  (H32781), depicting a fishing net together with fish. So the FISH works as a semantic element indicating the object of the verb.

[1] Alternative reconstruction: **ŋ(r)a* (Gassmann and Behr 2011: 177); ** ŋa* (Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 560).
[2] Whittaker 2021: 137.

Therefore, the FISH in the sign **[ŋ](r)a* 'to fish' (*yú* 漁) has a dual function: it works as the phonetic element of the logogram, and meanwhile represents the object of the verb. So scholars, such as Bottéro who argued that the sign **[ŋ](r)a* 'to fish' (*yú* 漁) is a compound graph with a semantic and a phonetic element,[1] have clearly ignored the semantic function of the fish element in the sign.

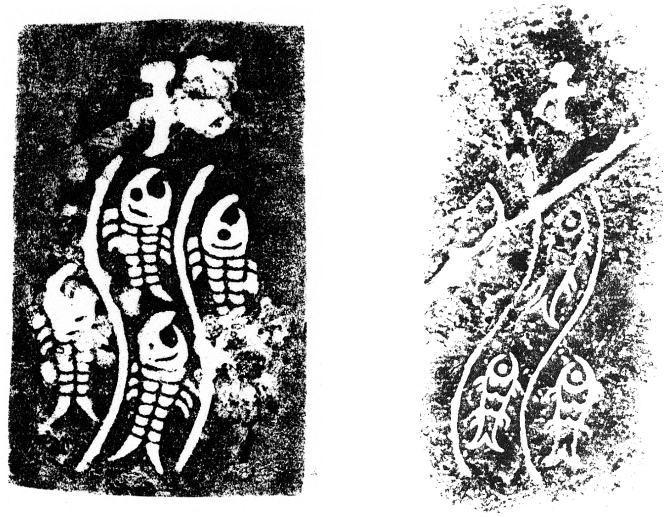


Fig. 5.2-5
Texts on Zǐ Yú *zūn* 子漁尊 (left)[2] and Zǐ Yú *jiǎ* 子漁斚 (right)[3]

4. Logograms derived from numerical notation and iconography

In addition, there are some logograms in the oracle-bone inscriptions that are not pictorial but abstract in form. These are special subsets of logograms derived from numerical notation and iconography at the time the script was invented. The numeral signs and the *gānzhī* signs are good examples:

(1) Examples of numeral signs:

oracle-bone sign	modern sign	Old Chinese	modern pronouciation	meaning
—	一	**ʔi[t]*	*yī*	'one'

[1] Bottéro 2004: 254.
[2] For pictures, rubbings and transcriptions see Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2007: 3539; Wú Zhènfēng 吳鎮烽 2012 (20): 253 (also details about excavation information and other collections).
[3] For pictures, rubbings and transcriptions see Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2007: 4860; Wú Zhènfēng 吳鎮烽 2012 (20): 80 (also details about excavation information and other collections).

	四	**s.li[j]-s*	*sì*	‘four’
	五	**C.ŋˤaʔ*	*wǔ*	‘five’

(2) Examples of *gānzhī* signs：

oracle-bone sign	modern sign	Old Chinese	modern pronouciation	meaning
	甲	**[k]ˤr[a]p*	*jiǎ*	‘first heavenly stem’
	癸	**kʷijʔ*	*guǐ*	‘tenth heavenly stem’

5.2.1.2 Secondary logograms: logograms derived via rebus

In the oracle-bone script, many secondary logograms are derived by rebus usage from existing logograms. That is, their potential applications as phonograms with values derived from the phonetic part of the logographic value are quickly stunted by their limited use for only one or two specific homophones. For example:

1.  **C.m(r)[u]k* (*mù* 目) — ‘eye’ → primary logogram; ‘spy (v.), monitor (v.)’; ‘the name of person or state’ → secondary logogram (derived phonographically)

The oracle-bone sign  is a depiction of an eye, and appears in about one hundred individual inscriptions,[1] around half of which can be read with

[1] This statistic is based on the oracle bones collected by the following ten collections: *Jiǎgǔwén héjí* 甲骨文合集 (H) (Guō Mòruò 郭沫若 1978-1982); *Jiǎgǔwén héjí bǔbiān* 甲骨文合集補編 (B) (Péng Bāngjiǒng 彭邦炯 et al. 1999); *Sū Dé Měi Rì suǒjiàn jiǎgǔjí* 蘇德美日所見甲骨集 (S) (Hú Hòuxuān 胡厚宣 1988); *Dōngjīng dàxué dōngyáng wénhuà yánjiū suǒcáng jiǎgǔ wénzì* 東京大學東洋文化研究所藏甲骨文字 (D) (Sōngwán dàoxióng 松丸道雄 1983); *Xiǎotún nándì jiǎgǔ* 小屯南地甲骨 (T) (Zhōngguó

certainty. Three usages of this EYE sign are attested in these inscriptions:

(1) its function as a logogram, used as a noun meaning 'eye', for example:

27. 貞：王其疾目？[1]
貞：王弗疾目？ (H 456 front, Period I)

Zhēn: wáng qí jí mù?
Zhēn: wáng fú jí mù?

[The diviner] divined: Will the king ail (in his) eye(s)?
[The diviner] divined: Will the king not ail (in his) eye(s)?

28. 唯[祖]辛害王目？ (H 1748, Period I)

Wéi Zǔ Xīn hài wáng mù?

Will the ancestor Zǔ Xīn 祖辛 hurt the king's eye(s)?

29. 癸巳卜，㱿貞：子漁疾目，祼祰于父乙？ (H 13619, Period I)

Guǐsì bǔ, Què zhēn : Zǐ Yú jí mù, guàn gào yú Fù Yǐ?

Crack-making on the day *Guǐsì* 癸巳 (the 30th in the *gānzhī* cycle), Què 㱿 (the diviner) divined: Zǐ Yú 子漁 has ailing eye(s), should [the king] offer *guàn* 祼 and *gào* 祰 sacrifices to the ancestor Fù Yǐ 父乙?

30. [...]未卜，爭貞：祰王目于祖丁？ (H 13626, Period I)

[...] *wèi bǔ, Zhēng zhēn: gào wáng mù yú Zǔ Dīng?*

Crack-making on the day [...]*wèi* 未, Zhēng 爭 (the diviner) divined: should [the king] offer the *gào* 祰 sacrifice to the ancestor Zǔ Dīng 祖丁 for the king's eye(s)?

(2) its function as a phonogram used as a verb (a secondary logogram) meaning 'spy' or 'monitor':

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shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1980-1983); *Yīngguó suǒcáng jiǎgǔjí* 英國所藏甲骨集 (Y) (Lǐ Xuéqín 李學勤 et al. 1982); *Huáitèshì děng shōucáng jiǎgǔ wénjí* 懷特氏等收藏甲骨文集 (W) (1979); *Tiānlǐ dàxué fùshǔ tiānlǐ cānkǎoguǎn cáng jiǎgǔ wénzì* 天理大學附屬天理參考館藏甲骨文字 (L) (Tiānlǐ dàxué 天理大學 1987); *Yīnxū huāyuánzhuāng dōngdì jiǎgǔ* 殷墟花園莊東地甲骨 (HD) (Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001); *Yīnxū xiǎotún cūnzhōng cūnnán jiǎgǔ* 殷墟小屯村中村南甲骨 (C) (Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2012).

[1] Takashima argues that *jí* 疾 in this paired inscriptions is a transitive verb meaning "to ail", and his translation is as follows: 貞王其疾目。Tested: His Majesty might ail (in his) eyes./ 貞王弗疾目。Tested: His Majesty might not ail (in his) eyes (Takashima 2019: 69).

31. 貞：呼目𠂤方？ (H 6194, Period I)

Zhēn: hū mù Gōngfāng?

[The diviner] divined: [Should the king] summon [someone] to monitor Gōngfāng 𠂤方 (one of the hostile countries of late Period I, to the west of the Shāng state)?[1]

32. [貞:] 呼[目]𠂤方？
貞：勿呼目𠂤方？ (Y 566, Period I)

[Zhēn:] Hū [mù] Gōngfāng?
Zhēn: Wù hū mù Gōngfāng?

[Divined:] [Should the king] summon [someone to monitor] Gōngfāng 𠂤方?
[The diviner] divined: [Should the king] not summon [someone] to monitor Gōngfāng 𠂤方?

(3) its function as a phonogram used as a noun (a secondary logogram) referring to the name of a person or state:

33. 庚午卜，賓貞：子目娩，嘉？
貞：子目娩，不其嘉？
王占曰：唯茲…嘉。(H 14034 front, Period I)

Gēngwǔ bǔ, Bīn zhēn: Zǐ Mù miǎn, jiā?
Zhēn: Zǐ Mù miǎn, bù qí jiā?
Wáng zhān yuē : Wéi zī … jiā.

Crack-making on the day *Gēngwǔ* 庚午 (the 7th in the *gānzhī* cycle), Bīn 賓 (the diviner) divined: Would it be good that Zǐ Mù 子目 gives birth to a child?
[The diviner] divined: Would it not be good that Zǐ Mù 子目 gives birth to a child?
The king prognosticated and proclaimed: It is this, which…will it be good.

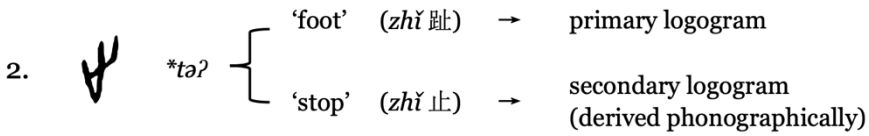
34. 貞：呼雀圍目？ (H 6946 front, Period I)

Zhēn: hū Què wéi Mù?

[The diviner] divined: [Should the king] summon Què 雀 (personal name) to besiege Mù 目?

[1] With regard to the geographic location, most scholars believed that Gōngfāng 𠂤方 was located to the west of the Shāng state, but the exact location is still controversial: the Hétào 河套 area (Guō Mòruò 郭沫若 1983); the north of Shǎnxī province (Hú Hòuxuān 胡厚宣 2002: 158-172); between Ānyì 安邑 of Shānxī province and Jǐyuán 濟源 of Hénán province (Chén Mèngjiā 陳夢家 1988: 274); the north of Shǎnxī province or the Hétào 河套 area (Shima Kunio 1975, 2006: 384); the southern part of the border of Shānxī province and Shǎnxī province (Zhōng Bǎishēng 鐘柏生 1989); the plateau areas of Shānxī province and Shǎnxī province (Sūn Yàbīng 孫亞冰 2010: 259-263).

Among these readable inscriptions, at least 35 of them belong to the first period of Late Shāng, that is, the reign of King Wǔ Dīng 武丁.[1] The three usages of this EYE sign are all attested in this period. In about 20 inscriptions, the EYE sign was used as a logogram to write the word **C.m(r)[u]k* 'eye' (*mù* 目). Since the sign is the depiction of an eye, it is very likely that this sign was created to write the word 'eye'. And then the sign was used as a rebus to write homophonous words **C.m(r)[u]k* 'spy (v.); monitor (v.)' (*mù* 目), or 'the name of a person or state'. But it is worth noting that in the examples of the name of a person or state, whether the EYE sign was used as a rebus phonogram or as a logogram is still open to discussion. This is due to the fact that the person or state may have a name having something to do with the eye, for example, the person may come from a lineage whose emblem is the eye.



The oracle-bone sign 𠂤 is the depiction of a foot, and it appears in about 70 individual inscriptions, most of which are incomplete. Only about 20 inscriptions can be read with certainty. Two usages of this FOOT sign are attested in these inscriptions:

(1) functioning as a logogram, and used as a noun, meaning 'foot', for instance:

35. 貞：疾止(趾)，唯屮害？(H 13683, Period I)

Zhēn: jí zhǐ, wéi yǒu hài?

[The diviner] divined: [The king has] an ailing foot (or feet); will there be mishaps?

36. 貞：疾止(趾)，于妣庚禦？ (H 13689, Period I)

Zhēn: jí zhǐ, yú Bǐ Gēng yù?

[The diviner] divined: [The king has] an ailing foot (or feet); should [the king] offer a *yù* 禦 sacrifice to the ancestor's consort Gēng 庚?

[1] It is generally accepted that oracle-bone inscriptions can be divided into five periods, that is (1) the first period: the reign of King Wǔ Dīng 武丁; (2) the second period: the reign of King Zǔ Gēng 祖庚 and Zǔ Jiǎ 祖甲; (3) the third period: the reign of King Lǐn Xīn 廩辛 and Kāng Dīng 康丁; (4) the fourth period: the reign of King Wǔ Yǐ 武乙 and Wén Dīng 文丁; (5) the fifth period: the reign of King Dì Yǐ 帝乙 and Dì Xīn 帝辛. For more details on the periodization of oracle-bone inscriptions see **2.3.1**.

37. 貞：疾止(趾)，禦于妣己？ (Y 1124, Period I)

Zhēn: jí zhǐ, yù yú Bǐ Jǐ?

[The diviner] divined: [The king has] an ailing foot (or feet); should [the king] offer a *yù* 禦 sacrifice to the ancestor's consort Jǐ 己?

(2) functioning as a phonogram, used as a verb (a secondary logogram) meaning 'stop':

38. 癸亥卜，貞：旬，二月。乙丑夕雨？丁卯明雨？戊小采日雨?
止。己明啟。 (H 21016, Period I)

Guǐhài bǔ, zhēn: xún, èryuè. Yǐchǒu xī yǔ? Dīngmǎo míng yǔ? Wù xiǎocǎi rì yǔ? Zhǐ. Jǐ míng qǐ.

Crack-making on the day *Guǐhài* 癸亥 (the 60th in the *gānzhī* cycle), [the diviner] divined: the next ten-day week of the 2nd month. Will it rain on the evening of the day *Yǐchǒu* 乙丑 (the 2nd in the *gānzhī* cycle)? Will it rain at dawn of the day *Dīngmǎo* 丁卯 (the 4th in the *gānzhī* cycle)? Will it rain from dawn to dusk on the day *Wù* 戊 (the 5th in the *tiāngān* cycle)? [The rain] stopped. It brightened up at dawn of the day *Jǐ* 己 (the 6th in the *tiāngān* cycle).

In these readable inscriptions, at least fifteen of them belong to Period I, the reign of King Wǔ Dīng 武丁. The two usages of this sign are both attested in this period. The FOOT sign was used as a logogram to write the word **təʔ* 'foot' (*zhǐ* 趾), a noun meaning 'foot', in fourteen inscriptions of this period, and there is only one readable example of the sign used as a rebus to write the word **təʔ* 'stop' (*zhǐ* 止). Due to the fact that the sign is the depiction of a foot, it is very likely that this sign was first created to write the word 'foot', and then used as a rebus to write the homophonous word **təʔ* (*zhǐ* 止), a verb meaning 'stop'.

3.		**m-bi[t]-s*	'nose'	(*bí* 鼻)	→	primary logogram
		**s.[b]i[t]-s*	'from, since'; 'self, oneself'	(*zì* 自)	→	secondary logogram (derived phonographically)

The oracle-bone sign  , depicting of a nose, appears in about 1,500 individual inscriptions, and about 1,000 of them can be read with certainty. Three usages of this NOSE sign are attested in these inscriptions:

(1) functioning as a logogram, and used as a noun, meaning 'nose'; only two examples can be found in inscriptions on the front of H 11506 (**Fig. 1.1-2**):

39. 貞: 有疾自(鼻), 隹(唯)𠂤(有)害?
貞: 有疾自(鼻), 不隹(唯)𠂤(有)害?

Zhēn: yǒu jí bí, wéi (wéi) yǒu hài?
Zhēn: yǒu jí bí, bù wéi (wéi) yǒu hài?

[The diviner] divined: [The king] has an ailing nose; will there be mishaps?
[The diviner] divined: [The king] has an ailing nose; will there be no mishaps?[1]

(2) functioning as a phonogram (or as a secondary logogram), used as a preposition, meaning 'from, since'. The inscriptions mainly touch on the following topics:

① the sacrifice offered to the ancestors:

40. 貞: 禦自唐、大甲、大丁、祖乙百羌、百牢? (H 300, Period I)

Zhēn: yù zì Táng, Dà Jiǎ, Dà Dīng, Zǔ Yǐ bǎi Qiāng, bǎi láo?

[The diviner] divined: should [the king] offer a *yù* 禦 sacrifice to the ancestors from Táng 唐 to Dà Jiǎ 大甲, Dà Dīng 大丁, Zǔ Yǐ 祖乙 with one hundred Qiāng 羌 (captives from the hostile state Qiāng 羌) and one hundred *láo* 牢 (a group of animals)?

41. 甲子卜，王：自大乙至祖乙祝? (H 19820, Period I)

Jiǎzǐ bǔ, wáng: zì Dà Yǐ zhì Zǔ Yǐ zhù?

Crack-making on the day *Jiǎzǐ* 甲子 (the 1st in the *gānzhī* cycle), the king [divined]: should [the king] offer *zhù* 祝 sacrifice to the ancestors from Dà Yǐ 大乙 to Zǔ Yǐ 祖乙?

② the time or direction of the rainfall:

42. 壬寅卜, 殼貞: 自今至于丙午雨?
壬寅卜, 殼貞: 自今至于丙午不其雨? (H 667 front, Period I)

Rényín bǔ, Què zhēn: zì jīn zhìyú Bǐngwǔ yǔ?
Rényín bǔ, Què zhēn: zì jīn zhìyú Bǐngwǔ bù qí yǔ?

Crack-making on the day *Rényín* 壬寅 (the 39th in the *gānzhī* cycle), Què 殼 (the diviner) divined: Will it rain from today to the day *Bǐngwǔ* 丙午 (the 43rd in the *gānzhī* cycle)?

[1] For more about this paired inscription see discussions in Takashima 2019: 25, 123.

Crack-making on the day *Rényín* 壬寅 (the 39th in the *gānzhī* cycle), Què 殼 (the diviner) divined: Will it not rain from today to the day *Bǐngwǔ* 丙午 (the 43rd in the *gānzhī* cycle)?

43. 癸卯卜：今日雨？
其自西來雨?
其自东來雨?
其自北來雨?
其自南來雨？ (H 12870, Period I)

Guǐmǎo bǔ: jīnrì yǔ?
Qí zì nán lái yǔ?
Qí zì dōng lái yǔ?
Qí zì xī lái yǔ?
Qí zì běi lái yǔ?

Crack-making on the day *Guǐmǎo* 癸卯 (the 40th in the *gānzhī* cycle), [the diviner divined]: Will it rain today?
[The diviner divined:] Will it rain from the west?
[The diviner divined:] Will it rain from the east?
[The diviner divined:] Will it rain from the north?
[The diviner divined:] Will it rain from the south?

③ the source of difficulties and enemies:

44. 貞：屮來羌自西？ (H 6596, Period I)

Zhēn: yǒu lái Qiāng zì xī?

[The diviner] divined: Will there be [the enemy] Qiāng 羌 from the west?

45. 貞：亡來艱自方 (H 6668 front, Period I)

Zhēn: wáng lái jiān zì fāng?

[The diviner] divined: Will there be no difficulty from lateral territories?

46. 貞：亡來艱自南 (H 7093, Period I)

Zhēn: wáng lái jiān zì nán?

[The diviner] divined: Will there be no difficulty from the south?

(3) functioning as a phonogram (or secondary logogram), used as a pronoun, meaning ‘self, oneself’:

47. 壬戌卜，爭貞：𢀛王自往  ？ (H 787, Period I)

Rénxū bǔ, Zhēng zhēn: wéi wáng zì wǎng *?*

Crack-making on the day *Rénxū* 壬戌 (the 59th in the *gānzhī* cycle), Zhēng 爭 (the diviner) divined: Should the king go to (?, place name) by himself?

48. 貞：𢀛王自往西？ (H 6928 front, Period I)

Zhēn: wéi wáng zì wǎng xī?

[The diviner] divined: Should the king go to the west by himself?

49. 庚戌，貞：𢀛王自征刀方？ (H 33036, Period II)

Gēngxū, zhēn: wéi wáng zì zhēng Dāofāng?

[Crack-making] on the day *Gēngxū* 庚戌 (the 47th in the *gānzhī* cycle), [the diviner divined]: Should the king himself conduct a punitive expedition against the Dāofāng 刀方 (one of the countries hostile to the Shāng state)?

Among these readable inscriptions, at least 600 of them belong to the first period of Late Shāng and the three usages of this NOSE sign are all attested in this period. In the two inscriptions on the front of H 11506, the NOSE sign was used as a logogram to write the word **m-bi[t]-s* 'nose' (*bí* 鼻). Since the sign is the depiction of a nose, it is likely that this sign was first created to write the word 'nose'. After that, it was used as a rebus to write the semi-homophonous word **s.[b]i[t]-s* (*zì* 自), a preposition meaning 'from, since' or a pronoun meaning 'self, oneself'. However, there are only two examples on a single piece of oracle-bone (that is, H 11506 front) where the sign was used to write the word **m-bi[t]-s* 'nose' (*bí* 鼻), while 25 examples show the sign used to write the word **s.[b]i[t]-s* 'self, oneself' (*zì* 自). The rest of the examples, about 570 in number, are all signs that used to write the word **s.[b]i[t]-s* 'since, from' (*zì* 自). Thus, it cannot be ruled out that the sign was first created to be used for a phonetic value, that is, to represent the word **s.[b]i[t]-s* 'since, from' (*zì* 自). And the usage of the homophonous word **s.[b]i[t]-s* 'self, oneself' (*zì* 自) and the word **m-bi[t]-s* 'nose' (*bí* 鼻) came later. In this case, the sign is more of a pseudo-logogram (see below) than secondary logogram.

5.2.1.3 Pseudo-logograms (cants)

Cants, a term derived from heraldry, refer to pseudo-logographic signs in a writing system that are created solely for a phonetic purpose.[1] Whittaker has pointed out a good example of such pseudo-logograms: the Central Mexican SHOULDER sign (**Fig. 5.2-6**). Whittaker argues that the SHOULDER sign has

[1] Whittaker 2021: 178.

always been assumed to be a logogram, **ACOL(LI)**, representing Nahuatl *àcolli*, 'shoulder'. But shoulders are not a topic in elite texts, so the SHOULDER sign in place names should not have a semantic connection with shoulders.

Fig. 5.2-6
The Aztec SHOULDER sign[1]

Moreover, the *Acol-* in the place names, such as Acolman, Acolhuacan (**Fig. 5.2-7**), is recorded as *Ācōl-* in Horacio Carochi's grammar of the Nahuatl language, a compound of *ā-* 'water' and *cōl-* 'bend, curve', referring to the curve of the lakeshore. Therefore, the SHOULDER sign was created to provide an alternative to the logogram of a curvy stream, serving a phonetic purpose.

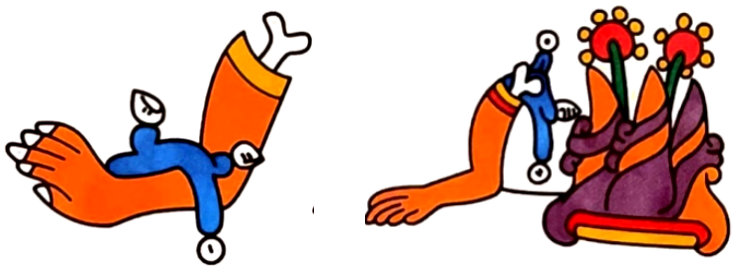


Fig. 5.2-7
Acolman (left) and Acolhuacan (right) in the Aztec Codex Mendoza[2]

Such pseudo-logograms created for phonetic values can also be found in oracle-bone inscriptions. The most frequently mentioned example is the sign 𠀉 (*qí* 其), depiction of a dustpan.[3] The word for the dustpan is **k(r)ə* (*jī* 箕).

This DUSTPAN sign was created to write the semi-homophonous word **gə* (*qí* 其), used as a modal adverb (examples see discussions of H 00456 front, H 00667 front, H 12870 in this chapter) or a third-person pronoun.[4] For example:

50. 庚寅卜，王：余燎于其配？ (Y 1864, Period I)

Gēngyín bǔ, wáng: yú liáo yú qí pèi?

Crack-making on the day *Gēngyín* 庚寅 (the 27th in the *gānzhī* cycle), the king [divined]: Should I hold a *liáo* 燎 sacrifice for his (**gə* 其) spouse?

[1] Whittaker 2021: 181.
[2] Whittaker 2021: 178.
[3] Xú Zhōngshū 徐中舒 2014: 487, Tāng Kějìng 湯可敬 2018: 658.
[4] For more details on the use of *qí* 其 as modal particles in oracle-bone inscriptions see Zhāng Yùjīn 張玉金 1994: 140-175.

Since the sign is the depiction of a dustpan, many Chinese epigraphers have argued that its original meaning was 'dustpan', and it was "borrowed" to write the semi-homophonous word **gə* (*qí* 其).[1] However, there is no example can be found in oracle-bone or bronze inscriptions that this sign is used to represent a dustpan, so this so-called "loan graph" should be a cant that is created for a phonetic purpose.

Another example of cant is the sign  , depicting two people back to back.

The word for this is **m-pˁək-s* 'turn the back on (v.)' or **pˁək-s* 'the back (n.)' (*bèi* 背). But there is no example can be found in oracle-bone or bronze inscriptions that this sign is used to represent these meanings. This sign should be a cant, first created to write the semi-homophonous word **pˁək* 'north' (*běi* 北). For example:

51. 己酉卜，㱿：王隹北羌伐？ (H 6626, Period I)

Jǐyǒu bǔ , Què: wáng huì běi Qiāng fá?

Crack-making on the day *Jǐyǒu* 己酉 (the 46th in the *gānzhī* cycle), Què 㱿 (the diviner) [divined]: Should the king send an expedition against the Northern Qiāng 羌 (one of the states hostile to the Shāng state)?

52. 己巳王卜，貞：[今]歲商受[年]？王占曰：吉。
東土受年？
南土受年？吉。
西土受年？吉。
北土受年？吉。(H 36975, Period V)

Jǐsì wáng bǔ, zhēn: [Jīn] suì Shāng shòu [nián]? Wáng zhān yuē: Jí.
Dōng tǔ shòu nián?
Nán tǔ shòu nián? Jí.
Xī tǔ shòu nián? Jí.
Běi tǔ shòu nián? Jí.

Crack-making on the day *Jǐsì* 己巳 (the 6th in the *gānzhī* cycle), the king divined: Will the Shāng receive (abundant) harvest [this] year? The king prognosticated and proclaimed: Auspicious.
Will the (Shāng) land to the east receive (abundant) harvest?
Will the (Shāng) land to the south receive (abundant) harvest? Auspicious.
Will the (Shāng) land to the west receive (abundant) harvest? Auspicious.
Will the (Shāng) land to the north receive (abundant) harvest? Auspicious.

[1] Zhào Chéng 趙誠 1986: 286; Yú Xíngwú 于省吾 1999: 2810; Qiú Xīguī 裘錫圭 2000, 2013; Cuī Héngshēng 崔恒昇 2001: 326; Xú Zhōngshū 徐中舒 2014: 487; Tāng Kějìng 湯可敬 2018: 658.

The oracle-bone sign  is a depiction of wing. The word for this is **ɢʷrəp* 'wing' (*yì* 翼). But there is no example can be found in oracle-bone or bronze inscriptions that this sign is used to represent this meaning. In fact, this WING sign was almost certainly first created to be used for a phonetic value, to write the homophonous word **ɢʷrəp* 'next day' (*yì* 翌). For instance:

53. 貞: 翌甲寅其雨?
貞: 翌甲寅不雨? (H 156, Period I)

Zhēn: yì Jiǎyín qí yǔ?
Zhēn: yì Jiǎyín bù yǔ?

[The diviner] divined: Will it rain on the next day *Jiǎyín* 甲寅 (the 51st in the *gānzhī* cycle)?
[The diviner] divined: Will it rain on the next day *Jiǎyín* 甲寅 (the 51st in the *gānzhī* cycle)?

54. 癸酉卜, 殼貞: 翌乙亥侑于祖乙? (H 1534 front, Period I)

Guǐyǒu bǔ, Què zhēn: yì Yǐhài yòu yú zǔyǐ?

Crack-making on the day *Guǐyǒu* 癸酉 (the 10th in the *gānzhī* cycle), Què殼 (the diviner) divined: should [the king] conduct the sacrifice of *yòu* 侑 to the ancestor Yǐ 乙 on the next day *Yǐhài* 乙亥 (the 12th in the *gānzhī* cycle)?

Oracle-bone logograms like the above should be all regarded as cants which are created solely to serve a phonetic value. Therefore, "the standard evolutionary scheme in which logograms are invented first, then at a later stage phonograms, is here turned on its head".[1]

In Chinese studies, a loangraph/loan graph (*jiǎjièzì* 假借字) refers to a homophonous or nearly homophonous sign that is "borrowed" to write another word.[2] These signs can be divided into two groups: (1) *běn yǒu qí zì* 本有其字 (that is, loangraphs which originally had orthographs; also known as 通假) and (2) *běn wú qí zì* 本无其字 (that is, loangraphs without an orthograph). With regard to the first group, for a certain word, there is already a sign to write it, which is the so-called orthograph (*běnzì* 本字), but in some cases, this word is written by a homophonous (or semi-homophonous) sign. For example, in Hàn Dynasty, there was already a sign *fú* 服 to write the word **[b]ək* 'respect, admire; subdue, submit', but in *Shǐjì* 史記 this word was written with a homophonous sign **[b]ək* 'lie prostrate, lean over' (*fú* 伏). For instance,

[1] Whittaker 2021: 181.

[2] Liú Yòuxīn 劉又辛 1985, 1988, 2000; Zhān Yínxīn 詹鄞鑫 1991; Qiú Xīguī 裘錫圭 1988, 2000: 261, 2013: 174; Jiǎng Shàoyú 蔣紹愚 2005.

騎皆伏曰: 如大王言。[1]

Qí jiē fú yuē: rú dàwáng yán.

The cavalrymen all said respectfully, "It's just as the king said."

The use of this kind of loangraphs primarily appears in later times, and the situation of oracle-bone inscriptions belongs to the second group, consisting of secondary logograms and pseudo-logograms. On the basis of above discussions, however, the term loangraph (*jiǎjièzì* 假借字) used by Chinese scholars is, to some extent, problematic. This is due to the fact that *jiǎjiè* 假借 means "borrow", so the premise of this term is that sign has already existed and represented a word before it was "borrowed" as rebus to write a homophonous (or semi-homophonous) word. There is nothing wrong with using this term to describe a secondary logogram, since they are derived by rebus usage from existing logograms. For instance, the FOOT sign was derived phonographically from the logogram **təʔ* 'foot' (*zhǐ* 趾) to write the homophonous word **təʔ* 'stop' (*zhǐ* 止). However, some logograms, that is, pseudo-logograms, in oracle-bone inscriptions seem to have been created solely for a phonetic purpose. The most frequent cited example is the DUSTPAN sign. Chinese scholars argue that the original meaning of this sign is "dustpan" (**k(r)ə* 箕) and it was borrowed to write the the semi-homophonous word **gə* (*qí* 其), used as a modal adverb or a third-person pronoun. However, according to oracle-bone inscriptions, this sign was in fact created for a phonetic purpose. There is no example can be found in the earliest Chinese texts that it used to write the word **k(r)ə* 'dustpan' (*jī* 箕). Later, probably in the Warring States period, the BAMBOO element 𥫱 (*zhú* 竹), indicating the semantic aspect, was added to the pseudo-logogram **gə* 其 to write the the word **k(r)ə* 'dustpan' (*jī* 箕). For example,

齊嬰兒謠曰: 大冠若箕，脩劍拄頤。[2]

Qí yīngéryáo yuē: dà guàn ruò jī, xiū jiàn zhǔ yí.

There is a nursery rhyme circulating in *Qí* State: The big hat is like a dustpan, and the long sword leans on the chin.

[1] *Shǐjì* 7 • *Xiàng Yǔ běnjì* 史記 7 • 項羽本紀 (Hàn Dynasty) (Sīmǎ Qiān 司馬遷 2014: 423).
[2] *Zhànguó cè* 13 • *Qí liù* 戰國策 13 • 齊六 (ca. the Warring States period) (Liú Xiàng 劉向 1995: 467).

5.2.2 Early Mesoamerican writings

As discussed in Chapter 4, according to Justeson and Kaufman's studies, epi-Olmec writing consists of (1) logograms, representing lexical items or their stems, such as *tuki* 'turtle' (MS 158);[1] and (2) syllabograms, representing CV and CVC syllables, such as *yaj* (MS88),[2] as well as grammatical suffixes, such as *-wɨ* 'completive independent' (MS 20).[3] In the epi-Olmec script, logograms and syllabograms are often combined, and the phonetic signs spell out part or all of the logogram, or of grammatical elements attached to it. The phonetic signs placed in front of the logograms spell the initial sounds of the logogram, and phonetic signs placed behind the logograms spell the final sounds.[4]

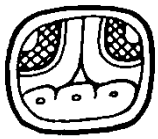
With regard to Maya writing, many scholars have argued that Maya hieroglyphic signs are logosyllabic in nature, consisting of logograms and syllabograms.[5] However, more precisely, Maya script is morphosyllabic in nature,[6] consisting of morphograms and syllabograms.[7] A morphogram is a semantic sign representing a morpheme, as opposed to a logogram, which represents a lexeme or a lexemic unit in a compound noun, but not a prefix or suffix.

1. Morphograms

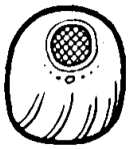
Morphogramsare attested in the earliest archaeologically dated Maya text,[8] the San Bartolo glyph block, dating to ca. 300-200 BC. The glyph pA7[9] on the block appears to be an early form of the sign **AJAW.**[10] Morphograms in Maya script represent concrete words and bound morphemes, conforming to CVC (ʔVC) or CVCVC (ʔVCVC) roots of Maya language.[11] For example:

[1] Kaufman and Justeson 1993: 1707, 2001: 2.4, 2004: 1075-1076, 2008: 197.
[2] Kaufman and Justeson 2001: 2.6, 2004: 1076, 2008: 198.
[3] Kaufman and Justeson 2001: 2.9.
[4] Kaufman and Justeson 2001: 2.10.
[5] Coe and Van Stone 2005: 18[5]; Bricker 2008: 168; Palka 2010: 225; Stone and Zender 2011: 11-12; Grube 2012: Chapter 64; Justeson 2012: 836; Johnson 2013: 34-44; Coe and Houston 2015: 263-271; Law and Stuart 2017: 130; Matsumoto and Carter 2020: 602.
[6] Weingarten 2011: 16-17; Gronemeyer 2014: 8.
[7] Gronemeyer 2014: 8, 485-489; Prager et al. 2018: 67.
[8] For more discussions about Maya morphograms see Stuart and Houston 1994; Stuart 1998; Stuart et al. 1999; Lacadena and Wichmann 2004, 2005; Gronemeyer 2014: 458-492. For critiques on the morphosyllabic model (Houston, Robertson and Stuart 2001) see discussions in Wichmann 2006; Wald 2007: 153-176; Gronemeyer 2011: 286-287, 2014: 490-492.
[9] For details about glyph pA7 on the San Bartolo block see discussion in **5.3.2**.
[10] Saturno et al. 2006: 1282; Houston 2006: 1249; Palka 2010: 227; Grube 2012: 845; Justeson 2012: 835; Coe and Houston 2015: 89; Law 2015: 168-169. For more details see discussions in **4.4**.
[11] Gronemeyer 2014: 8, 486-487; Prager et al. 2018: 67.

(1) Lexical morpheme:



AK'AB'
ak'ab'
'darkness(n.)'



HA'
ha'
'water (n.)'

K'UK'
k'uk'
'quetzal'

PAKAL
pakal
'shield'

CH'AM
ch'am
'grasp (v.)'

CHOK
chok
'scatter, throw (v.)'

K'AL
k'al
'tie, close (v.)'

HUL
hul
'arrive (v.)'

CHAK
chak
'red; great(adj.)'

K'AN
k'an
'yellow; precious (adj.)'

LAKAM
lakam
'big (adj.)'

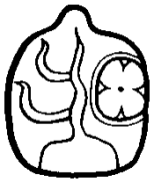
YAX
yax
'green, blue(adj.)'[1]

(2) Grammatical morphemes:

① Plural suffix:

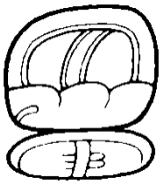
The plural suffix *–tak* is written by the CVC root sign **TAK** (or **TAAK**).[2] Sometimes the sign **TAK** (or **TAAK**) is "phonemically complemented" (better, indicated) by /**ki**/, or by a full syllabic substitution /**ta-ki**/.[3] These writing patterns clearly indicate that the **TAK** (or **TAAK**) sign behaves as a morphogram,[4] since it can be fully substituted by syllabograms and can have "phonetic complements" (better, indicators).[5]

[1] For dicussions of **K'UK'** and **YAX** see also **1.2.**
[2] Coe and Van Stone 2005: 28; Gronemeyer 2011: 325-326, 2014: 9; Law and Stuart 2017: 145-146.
[3] Coe and Van Stone 2005: 28; Gronemeyer 2011: 325-326.
[4] Gronemeyer calls **TAK** a "true logogram", but it is, in fact, a morphogram by his definition, since it represents a non-lexical morpheme.
[5] Gronemeyer 2011: 326.



TAK
-tak
'plural suffix'

TAK-ki
-tak
'plural suffix'



ta-ki
-tak
'plural suffix'

ta-ki
-tak
'plural suffix'

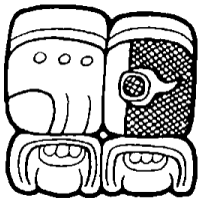
② Preposition:

The preposition *tan* is written by the CVC root sign **TAN** (or **TAHN**),[1] a morphogram meaning 'in the center of, within', which generally appears in locative expression referring to interior spaces, such as caves. For example:

TAN
tan
'in the center of, within'

TAN-na
tan
'in the center of, within'

TAN CH'EN-na
tan ch'en
'in the center of/ within the cave'



TAN-na CH'EN-na
tan ch'en
'in the center of/ within the cave'

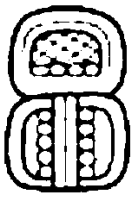
[1] Johnson 2013: 121-122; Law and Stuart 2017: 161-162.

2. Syllabograms

Syllabograms in the Maya script represent consonant-vowel (CV) syllables (including ʔV).[1] These CV syllables can be strung together to spell word-bases and derivational affixes. The most common word type in Classic Maya is consonant-vowel-consonant (CVC), which are written with two CV syllabograms with the last vowel suppressed.[2] For example:

b'a-na
b'an
'scatter (v.)'

ch'o-ko
ch'ok
'youth, heir (n.)'



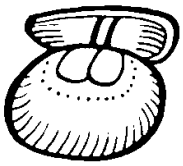
pa-sa
pas
'open (v.); dawn (n.)'

la-ka
lak
'plate (n.)'

ku-chu
kuch
'burden(n.); carry (v.)'

tzu-ku
tzuk
'partition (n.)'

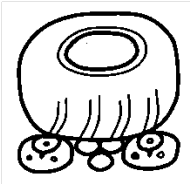
tz'a-pa
tz'ap
'plant (v.)'



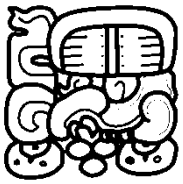
tz'i-b'a
tz'ib'
'write, paint (v.)'

With regard to the derivational affixes, the adjectival suffix *–Vl* (V for vowel) is a good case in point. Adjectives in Classic Mayan are divided into pure adjectives, such as **LAKAM** *lakam* 'big', **CHAK** *chak* 'red, great', and derived adjectives that are simply nouns with a *-Vl* suffix. The vowel in the suffix usually follows the rule of synharmony and is the same as the preceding vowel in the noun.[3] For example, *ha'al* meaning 'wet' is an adjective derived from the noun *ha'*, 'water'; *k'ahk'al* meaning 'fiery' comes from the noun *k'ahk'*, 'fire'.

[1] Coe and Van Stone 2005: 18; Bricker 2008: 168; Johnson 2013: 36; Gronemeyer 2014: 8; Law and Stuart 2017: 130; Prager et al. 2018: 67.
[2] For the rule of synharmonic and disharmonic spelling see **4.4**.
[3] Coe and Van Stone 2005: 18; Johnson 2013: 152; Law and Stuart 2017: 160-161.



HA'-la
ha'al
'watery, wet (adj.)'



K'AK'-la
k'ahk'al
'fiery (adj.)'

Syllabograms are attested in Late Preclassic Maya texts. For example, on the jadeite pectoral ornament at Dumbarton Oaks, glyph C6 represents **ya-AK'AB'**, *y-ak'ab'*, "his darkness". The syllabic sign *ya-* represents a grammatical affix, that is, an ergative (prefixed) pronoun.[1]

Syllabic signs can also be added to morphograms as phonetic indicators to aid their reading. These syllabic signs typically represent the initial consonant and vowel or the final vowel (and consonant) of the morphogram.[2] For instance:

wi-WITS
wits
'hill, mountain'

TUUN-ni
tuun
'stone'

wi-WINIK-ki
winik
'man, human'

ji-JIX[3]
jix
'jaguar (n.)'

AJAW-wa
ajaw
'lord (n.)'

Ka-KALOMTE'-te'
Kalomte'
'an elite or royal title'[4]

[1] Houston 2000: 145; Mora-Marín 2001: 209; Matsumoto and Carter 2020: 602. For details about the jadeite pectoral ornament at Dumbarton Oaks see the discussion in **5.3.2**.
[2] Grube 1990: 25-26, 63-69, 2010; Coe and Van Stone 2005: 24-25; Mora-Marín 2008: 198-200; Gronemeyer 2014: 8; Prager et al. 2018: 67.
[3] Alternative: **hi-HIX** *jix* 'jaguar (n.)'.
[4] For details see discussions in **5.3.2**.

5.3 What was the original purpose or function of writing?

The earliest evidence of writing in the world seems to appear in Mesopotamia, dating to the end of the fourth millennium BC.[1] The majority of these early texts are administrative documents dealing with economic transactions, which consist of numerical notations and logograms that represent the objects of the transaction. Scholars believe that when writing was first invented in Mesopotamia, the primary purpose of proto-cuneiform was to communicate and store administrative data instead of representing texts in a spoken language.[2] With regard to Egypt, the earliest examples of writing come from Tomb U-j at Abydos, dating to the end of the fourth millennium BC.[3] The majority of texts are short notations about the origin and quantity of deliveries. For this reason, some scholars claim that writing in Egypt was originally invented for administrative and economic purposes.[4]

However, the earliest writings in China and Mesoamerica seem related to religious purposes rather than administrative activities. For example, the earliest examples of writing in China are attested primarily in the context of divination. But some scholars prefer to see an administrative purpose, and in their opinion, administrative texts were recorded on perishable materials, such as wood or bamboo slips, bark or palm leaves, in early China and Mesoamerica.[5] Then, is there a universal utilitarian basis of all writing? What was the original purpose or function of writing? The original purpose or function of early Chinese and Mesoamerican writing will be discussed in detail in this chapter.

5.3.1 Early Chinese writing

1. Oracle-bone inscriptions (*jiǎgǔwén* 甲骨文)

Oracle-bone script is the earliest writing system appear in China. The earliest secure examples of oracle-bone writing, two engraved bones, are attested at Èrlǐgǎng 二裏崗 (ca. 1600-1400 BC, Early Shāng).[6] One of the engraved bones records a divination made on the day *Yǐchǒu* 乙丑 (the 2nd in the 60-day *gānzhī* cycle) of the seventh month, dealing with some kind of sacrifice to the gods of land and grain[7] or the capture of enemies.[1]

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[1] For different opinions on the dating of the first appearance of the earliest writing in Mesopotamia see **2.1**.
[2] Englund 1998: 42; Nissen 2003: 71, 2015: 121; Cooper 2004: 80, 83; Wengrow 2011: 99; Michalowski 2014: 146; Law et al. 2015: 212-213.
[3] For different opinions on the dating of the earliest writing in Egypt see **2.2.**
[4] Dreyer 1998: 89, 145, 2003: 124, 2008: 18; Kahl 2002: 66-67; Macarthur 2010: 121.
[5] Postgate et al. 1995; Bagley 2004: 234-237; Keightley 2006: 183-184; Wang 2014, 2015: 144-146.
[6] For more details see the discussion in Chapter 3.
[7] Lǐ Wéimíng 李維明 2003, 2006; Zhèng Jiéxiáng 鄭傑祥 2005: 6-7, 2008: 81-82.

With regard to the inscriptions of Late Shāng, as discussed in **2.5.3**, inscriptions of the Shī 師 group are the earliest inscriptions, including inscriptions ranging from the early Wǔ Dīng 武丁 period to the late Wǔ Dīng 武丁 period. The theme most involved in these inscriptions is the king's sacrifices to the ancestors. For the entire corpus of oracle-bone inscriptions of Late Shāng, the vast majority of them are records of divination, inquiring about a wide variety of topics,[2] such as sacrifices to ancestors,[3] agriculture,[4] military campaigns,[5] sickness,[6] hunting,[7] child bearing and childbirth,[8] weather,[9] excursions,[10] distress or trouble[11] and the outlook for the night and the next ten-day week (*xún* 旬).[12] For example:

(1) agriculture

55. 乙丑卜，王貞：今歲受年？十二月。(H 9650, Period I)

Yǐchǒu bǔ, wáng zhēn: Jīnsuì shòunián? Shí'èr yuè.

Crack-making on the day *Yǐchǒu* 乙丑 (the 2nd in the 60-day *gānzhī* cycle), the king divined: Will there be a harvest this year? The twelfth month.

56. 貞：商不其受年？三月。 (H 9666, Period I)

zhēn: Shāng bù qí shòunián? Sānyuè.

[The diviner] divined: Will there be no harvest in Shāng? The third month.

(2) childbirth and childbearing

57. 丁巳卜，爭貞：婦好娩，不其嘉？十月。(H 14005, Period I)

Dīngsì bǔ, Zhēng zhēn: Fù Hǎo miǎn, bù qí jiā? Shíyuè.

Crack-making on the day *Dīngsì* 丁巳 (the 54th in the 60-day *gānzhī* cycle),

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[1] Cháng Yùzhī 常玉芝 2007: 99-100. For more details on the engraved bones from Èrlǐgǎng 二裏崗 see the discussion in **3.4**.

[2] For more discussions of the topic of the divination inscription see also Keightley 1978: 33-35; 陳夢家 1988: 42; Gāo Míng 高明 1996: 234; Wú Hàokūn 吳浩坤 and Pān Yōu 潘悠 2018: 74-75; Huáng Dékuān 黃德寬 2019:132.

[3] For examples of inscriptions on sacrifices to ancestors see H 300, H 1534 front, H 19820, Y 1864 in **5.2.1**; H 1336 front in **5.3.2**.

[4] For examples of inscriptions on agriculture see H 9745, H 33242 H 33243 in **3.2.1**; H 22536 in **5.2.1**.

[5] For examples of inscriptions on military campaigns see H 6194, H 6442, H 6596, H 6626, H 6946, H 33036, Y 566 in **5.2.1**.

[6] For examples of inscriptions on sickness see H 456 front, H 1748, H 11506, H 13619, H 13626, H 13683, H 13689, Y 1124 in **5.2.1**.

[7] For examples of inscriptions on hunting see H 223, H 7894, H 10475, H 28440 in **5.2.1**.

[8] For examples of inscriptions on child bearing and childbirth see H 14034 front in **5.2.1**.

[9] For examples of inscriptions on weather see H 156, H 667 front, H 10020, H 12870, H 12921 back, H 21016 in **5.2.1**.

[10] For examples of inscriptions on excursions see H 787, H 23786 in **5.2.1**.

[11] For examples of inscriptions on distress or trouble see H 6668 front, H 6928 front, H 7093 in **5.2.1**.

[12] For examples of inscriptions on the outlook for the night and the next ten-day week see B 9975 in **5.2.1**.

Zhēng 爭 (The diviner) divined: Would it be not good that Lady Hǎo 好 gives birth to a child? The tenth month.

58. 庚子卜，殼貞：婦好有子？三月。(H 13926, Period I)

Gēngzǐ bǔ, Què zhēn: Fù Hǎo yǒu zǐ? Sānyuè.

Crack-making on the day *Gēngzǐ* 庚子 (the 37th in the 60-day *gānzhī* cycle), Què 殼 (the diviner) divined: Would Lady Hǎo 好 have a child?

(3) hunting

59. 丙寅卜，內：王其逐兕，獲? (B 1152, Period I)

Bǐngyín bǔ, Nèi: Wáng qí zhú sì, huò?

Crack-making on the day *Bǐngyín* 丙寅 (the 3rd in the 60-day *gānzhī* cycle), Nèi 內 (the diviner) [divined]: [If the king] chases rhinoceros(s), [will he] catch [some]?

60. 己未卜，亘貞：逐豕，獲? (H 10228 front, Period I)

Jǐwèi bǔ, Gèn zhēn: zhú shǐ, huò?

Crack-making on the day *Jǐwèi* 己未 (the 56th in the 60-day *gānzhī* cycle), Gèn 亘 (the diviner) divined: [If the king] chases boar(s), [will he] catch [some]?

61. 貞：弗其獲豕？ (H 10246, Period I)

zhēn: fú qí huò shǐ?

[The diviner] divined: Would [the king] not catch a boar?

(4) outlook for the next ten-day week

62. 癸未卜，古貞：旬亡禍？十一月。
癸卯卜，賓貞：旬亡禍？六月。
癸丑卜，爭貞：旬亡禍？ (H 16696, Period I)

Guǐwèi bǔ, Gǔ zhēn: xún wáng huò? Shíyī yuè.
Guǐmǎo bǔ, Bīn zhēn: xún wáng huò? Liùyuè.
Guǐchǒu bǔ, Zhēng zhēn: xún wáng huò?

Crack-making on the day *Guǐwèi* 癸未 (the 20th in the 60-day *gānzhī* cycle), Gǔ 古 (the diviner) divined: Will there be no disaster/distress in the next ten-day week? The eleventh month.
Crack-making on the day *Guǐmǎo* 癸卯 (the 40th in the 60-day *gānzhī* cycle), Bīn 賓 (the diviner) divined: Will there be no disaster/distress in the next ten-day week? The sixth month.

> Crack-making on the day *Guǐchǒu* 癸丑 (the 50th in the 60-day *gānzhī* cycle), Zhēng 爭 (the diviner) divined: Will there be no disaster/distress in the next ten-day week?

Clearly, divination and royal ancestors are of great importance in Shāng kingship and administration, and writing figured prominently in the rituals to the ancestors. Shāng kings inquired the opinions of their ancestors through divination to legitimize the kingship and administration. In other words, Shāng administration cannot be carried out without divination. Therefore, the invention of writing in China should be attributed to the combination of divination and administration.[1]

There are a small number of Shāng texts on human or animal bones (such as tiger, deer and rhinoceros) that are not divinatory in content, dating to the end of Late Shāng period, that is, the reign of kings Dì Yǐ 帝乙 and Dì Xīn 帝辛.[2] These texts record (1) the list of the 60-day *gānzhī* cycle (such as H 38001, H38006, H38007, H 38079, H37986, Y02569, Y 02571, B 11038); (2) the order of ancestors in sacrificial offering (such as H 35406，H 39455); and (3) commemorative events, and the two most frequently mentioned examples are Xiǎochén Qiáng *gǔbǎn* 小臣牆骨板[3] and Zǎi Fēng *gǔ* 宰豐骨 (**Fig. 5.3.1-1**)[4]. The style and content of these commemorative inscriptions share more features with contemporary bronze inscriptions, such as the Xiǎochén Yú *zūn* 小臣艅尊 (**Fig. 5.3.1-4**).[5]

> 63. 壬午，王田于麥麓，獲商戠兕。王賜宰豐。 寢小𠂤兕。在五月。唯王六祀，肜日 (B 11299 back)
>
> *Rénwǔ, wáng tián yú Màilù, huò shāng zhí sì, wáng cì Zǎi Fēng, Qǐn Xiǎo (?) kuàng, zài wǔyuè, wéi wáng liù sì róng rì.*
>
> On the day *Rénwǔ* 壬午 (the 19th in the 60-day *gānzhī* cycle), the king caught a striped red-yellow rhino. The king rewarded Zǎi Fēng 宰豐 (personal name). The award was given through Qǐn Xiǎo (?) 寢小𠂤 (personal name). It was the fifth month. It was the king's sixth ritual cycle, the *róng* 肜-sacrifice day.

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[1] For more details see discussions in **2.5**.

[2] Qiú Xīguī 裘錫圭 2000: 62-64, 2013: 47-48; Sòng Zhènháo 宋鎮豪 2010: 621-630; Wáng Yǔxìn 王宇信 and Wèi Jiànzhèn 魏建震 2010: 93-106; Wáng Yǔxìn 王宇信 2015: 110-116.

[3] For details on Xiǎochén Qiáng *gǔbǎn* 小臣牆骨板 see discussions in Liú Zhāo 劉釗 2009: 4-10, 2013: 38-47; Sòng Zhènháo 宋鎮豪 2010: 627; Lǐ Xuéqín 李學勤 2011: 49-53; Wáng Jìnfēng 王進鋒 2013: 54-61; Zhāng Huáitōng 張懷通 2013; Huáng Tiānshù 黃天樹 2016: 18-22; Zhū Fènghàn 朱鳳瀚 2016: 4-10; Chén Guāngyǔ 陳光宇 2018: 21-29; Fāng Zhìsōng 方稚松 2019: 40-48. For photo and rubbing see Zhōngguó guójiā bówùguǎn 中國國家博物館 2007: 119, 264; Guō Mòruò 郭沫若 1978-1982: H 36481.

[4] For more discussions see Zhōngguó guójiā bówùguǎn 中國國家博物館 2007: 265; Sūn Yàbīng 孫亞冰 2008; Sòng Zhènháo 宋鎮豪 2010: 624-625.

[5] For details see disussions in this chapter.

Fig. 5.3.1-1
The Zǎi Fēng *gǔ* 宰豐骨 (left) and its text (right)[1]

Apart from Shāng oracle-bone inscriptions, there are also a small number of oracle-bone inscriptions from Western Zhōu. The term *Xīzhōu jiǎgǔ* 西周甲骨 "the oracle-bones of Western Zhōu" in Chinese epigraphy normally refers to the oracle-bones unearthed in rites of the Zhōu dynasty. Among them, there are about 300-330 oracle-bones bearing inscriptions, 289 of which are from Fèngchú 鳳雛 site of Qíshān 岐山, Shǎnxī province, and known as *Zhōuyuán jiǎgǔ* 周原甲骨 in Chinese epigraphy.[2] It is worth noting that not all of these oracle bones belong to the Western Zhōu period, and a small part of them should be slightly earlier than the Western Zhōu period, probably contemporary to the end of Late Shāng.[3] The oracle-bone inscriptions of the Western Zhōu period are also records of divinations,[4] touching on topics about, such as, sacrifices, harvests, hunting and military campaigns.

[1] Zhōngguó guójiā bówùguǎn 中國國家博物館 2007: 120, 265; rubbing see also Péng Bāngjiǒng 彭邦炯, Xiè Jì 謝濟 and 馬季凡 Mǎ Jìfán: B11299.

[2] Wáng Yǔxìn 王宇信 2015: 305; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 69; Xǔ Zǐxiāo 許子瀟 2017: 8. For more details about the excavation time and quantities of these oracle bones in different sites see Mén Yì 門藝 2005: 1-2; Xǔ Zǐxiāo 許子瀟 2017: 1-7.

[3] With regard to the periodization of these inscriptions, scholars have not yet reached a consensus. For more discussions see Lǐ Xuéqín 李學勤 and Wáng Yǔxìn 王宇信 1980, Lǐ Xuéqín 李學勤 1981; Xú xītái 徐錫臺 1981, 1987: 154; Chén Quánfāng 陳全方 1982; Wáng Yǔxìn 王宇信 1984, 1986; Zhū Qíxiáng 朱歧祥 1997; Xǔ Zǐxiāo 許子瀟 2017: 379-381,

[4] For more studies on collections, grammar, transliterations of Western Zhōu oracle-bone inscriptions see Wáng Yǔxìn 王宇信 1984; Xú xītái 徐錫臺 1990; Zhū Qíxiáng 朱歧祥 1997; Cáowěi 曹瑋 2002, 2003; Chén Quánfāng 陳全方 et al. 2003; Mén Yì 門藝 2005; Xǔ Zǐxiāo 許子瀟 2017.

2. Bronze inscriptions (*jīnwén* 金文)

Bronze inscriptions is another form of writing that appeared in the Shāng period.[1] The bronze vessels bearing inscriptions first appeared in the Middle or Late Shāng period.[2] These earliest examples of bronze inscriptions are simple inscriptions, the vast majority of which include only one to several signs, and only about one hundred vessels bear more than ten signs.[3] These simple inscriptions record the clan name[4] or the name of the person for whom the bronze vessel was cast, presumably intended to be used in ritual activities, sacrifices to ancestors in particular,[5] such as, the Fù Hǎo *dǐng* 婦好鼎 (WJC 493/ JC 1326; **Fig. 5.3.1-2**) and the Zǔ Xī *yǒu* 祖辛卣 (WJC 12664/ JC 4821; **Fig. 5.3.1-3**).

Fig. 5.3.1-2
The Fù Hǎo *dǐng* 婦好鼎 (left) and its text (above)[6]

This can be confirmed by oracle-bone inscriptions. Fù Hǎo 婦好 appears in oracle-bone texts as the name of the consort of King Wǔ Dīng 武丁.[1] For

[1] For basic information of bronze inscriptions see **1.1.3**.
[2] Qiú Xīguī 裘錫圭 2000: 62, 2013: 47; Wáng Huī 王輝 2006: 3; 白冰 Bái Bīng 2009: 6; Shaughnessy 2011: 379; Wú Zhènfēng 吳鎮烽 2012; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 71.
[3] The statistics are derived from the two series of most comprehensive collections of bronze inscriptions of the Shāng and Zhōu periods, that is, Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994, 2007 and Wú Zhènfēng 吳鎮烽 2012, 2016, 2020.
[4] For recent discussions of clan names in bronze inscriptions see Wáng Chángfēng 王長豐 2015.
[5] Dǒng Yànyàn 董豔豔 2003; Wáng Huī 王輝 2006: 3-4; Chén Yīngjié 陳英傑 2008: 16; Shaughnessy 2011: 379; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 71. For details about the pattern of Shāng bronze inscriptions see the discussion in Chén Yīngjié 陳英傑 2008: 16-31.
[6] Wú Zhènfēng 吳鎮烽 2012 (1): 385. For a rubbing of the inscription of the Fù Hǎo *dǐng* 婦好鼎 see also: Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 1326, 2007: 908. For a transcription see also Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (2): 46; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2007: 908; Zhāng Guìguāng 張桂光 2010: 219.

example, H 13927 and H 14000 (see details in this chapter) are inscriptions from Period I, that is, the reign of King Wǔ Dīng 武丁, dealing with childbirth and childbearing of Fù Hǎo 婦好, King Wǔ Dīng 武丁's consort. The Fù Hǎo *dǐng* 婦好鼎 was excavated at Xiǎotún 小屯 site of Ānyáng 安陽, Hénán province, dating to the reign of King Wǔ Dīng 武丁.[2] So the Fù Hǎo *dǐng* 婦好鼎 was very likely a ritual bronze vessel made for Fù Hǎo 婦好, King Wǔ Dīng 武丁's consort.

Likewise, Zǔ Xīn 祖辛 appears in oracle-bone inscriptions as the ancestor of Shāng kings. For instance, H 1336 comes from the period of King Wǔ Dīng 武丁, and the diviner made a divination to enquire about a sacrifice to the ancestor Xīn 辛. So it is very likely that the Zǔ Xī *yǒu* 祖辛卣, excavated at Chǔqiū 褚邱, Huīxiàn 輝縣, Hénán province in 1965,[3] was a ritual bronze vessel made for the ancestor Xīn 辛 in the reign of King Wǔ Dīng 武丁.

Fig. 5.3.1-3
The Zǔ Xī *yǒu* 祖辛卣 (left) and its text (above)[4]

[1] For discussions of the Fù Hǎo 婦好 and related bronze inscriptions see Wáng Yǔxìn 王宇信, Zhāng Yǒngshān 張永山 and Yáng Shēngnán 楊昇南 1977: 1-22; Lǐ Xuéqín 李學勤 1977: 32-37; Zhèng Zhènxiāng 鄭振香 1983: 716-725; Zhāng Zhènglǎng 張政烺 1983: 714-715; Zhèng Zhènxiāng 鄭振香 and Chén Zhìdá 陳志達 1985: 940-947; Lín Jǐngmíng 林景明 1993: 10-11; Cáo Dìngyún 曹定雲 1993, 1995; Hán Jiāngsū 韓江蘇 2010: 99-104; Jù Lónghuì 具隆會 2019: 12-16.

[2] Wú Zhènfēng 吳鎮烽 2012 (1): 385.

[3] Wú Zhènfēng 吳鎮烽 2012 (23): 126.

[4] Wú Zhènfēng 吳鎮烽 2012 (23): 126 (also details on excavations and other collections). For a rubbing of the text of the Zǔ Xī *yǒu* 祖辛卣 see also: Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 4821, 2007: 3100. For a transcription of the text see also Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (4): 21; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2007: 3100. Zhāng Guìguāng 張桂光 2010: 801. For discussions see Wáng Shǒuqiān 王守謙 1979: 79; Zhāng Jùnrú 張俊儒 2015: 25-30.

64. 壬子卜，殼貞：來辛酉𡆥于且（祖）辛？ (H 1336 front, Period I)

Rénzǐ bǔ, Què zhēn: lái Xīnyǒu yòu yú Zǔ Xīn?

Crack-making on the day *Rénzǐ* 壬子 (the 49th in the 60-day *gānzhī* cycle), Què 殼 (the diviner) divined: Should [the king] make a *yòu* 𡆥 sacrifice for the ancestor Xīn 辛 on the next day, *Xīnyǒu* 辛酉 (the 58th in the 60-day *gānzhī* cycle)?

Inscriptions on bronze vessels become longer by the end of the Shāng period.[1] Such texts primarily commemorate an award for meritorious services, and the Xiǎochén Yú *zūn* 小臣艅尊 (also known as the Xiǎochén Yú Xī *zūn* 小臣艅犀尊 or Xiǎochén Yú *zūn* 小臣俞尊) (WJC 11785/ JC 5990; **Fig. 5.3.1-4**), probably dating to the reign of King Dì Yǐ 帝乙, is a good case in point:

Fig. 5.3.1-4
The Xiǎochén Yú *zūn* 小臣艅尊 (above) and its text (right)[2]

<06>	丁巳，王省夒祖， 王賜小臣艅夒貝。 唯王来征人方。唯 王十祀又五。肜日。[3]	*Dīngsì, wáng xǐng Kuí zǔ,* *wáng cì xiǎochén Yú Kuí bèi.* *Wéi wáng lái zhēng Rénfāng. Wéi* *wáng shí sì yòu wǔ. Róng rì.*

[1] Bái Bīng 白冰 2009: 7; Shaughnessy 2011: 379; Feng Li 2018: 20.

[2] Wú Zhènfēng 吳鎮烽 2012 (21): 255-256 (also details on excavations and other collections). For a rubbing of the Xiǎochén Yú *zūn* 小臣艅尊 see also Mǎ Chéngyuán 馬承源 1982: 69, 1986: 4, 1988: 2; Yán Yīpíng 嚴一萍 1983: no. 4866; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 5990, 2007: 3684; Huáng Dékuān 黃德寬 2019: 220.

[3] For a transcription see also Mǎ Chéngyuán 馬承源 1982: 69, 1988: 2 (also includes word commentaries); Jiàoyùbù rénwén shèhuì kēxué zhòngdiǎn yánjiū jīdì 教育部人文社會科學重點研究基地 et al. 2001: 114; Zhāng Yàchū 張亞初 2001: 114; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (4): 263, 2007: 3684; Zhāng Guìguāng 張桂光 2010: 990; Shaughnessy 2011: 380

> On the day *Dīngsì* 丁巳 (the 54th in the 60-day *gānzhī* cycle), the king inspected the temple in Kuí 夔 (place name). The king awarded Minor Vassal Yú 俞 (personal name) [an unspecified number of] *bèi* 貝 'cowries' from Kuí 夔. This was either when the king was coming from attacking [or on the way to attack] the Rénfāng 人方. It was the king's fifteenth ritual cycle, the *róng* 肜-sacrifice day.

There are also texts dealing with sacrificial rituals and military campaigns in the Late Shāng period. For example, the text of the Zuòcè Bān *yǎn* 作冊般甗 (also known as the Fú zuò fù Yǐ *yǎn* 服作父乙甗, Wáng yí Rén *yǎn* 王宜人甗, or Bān *yǎn* 般甗) (WJC 3347/ JC 944; **Fig. 5.3.1-5**),[1] dating to the reign of King Dì Yǐ 帝乙 or 帝辛 Dì Xīn, records the king making the sacrifices before sending troops against the Rénfāng 人方.

Fig. 5.3.1-5
The Zuòcè Bān *yǎn* 作冊般甗 (left) and its text (right)[2]

(in English); Wú Zhènfēng 吳鎮烽 2012 (21): 255 (also details on excavations and other collections); Huáng Dékuān 黃德寬 2019: 220-221 (also includes word commentaries).

[1] For discussions of the Zuòcè bān *yǎn* 作冊般甗 see Mǎ Chéngyuán 馬承源 1982: 6; Yáo Sūjié 姚蘇傑 2012: 85-87; Cháo Fúlín 晁福林 2023: 5-22.

[2] Wú Zhènfēng 吳鎮烽 2012 (7): 227 (also details on excavations and other collections). For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 1661; Mǎ Chéngyuán 馬承源 1986: 6, 1988: 6, Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 944, 2007: 750; Běnshū biānxiězǔ 本書編寫組 2003: 633; Féng Shí 馮時 2016: 549; Liú Xiáng 劉翔 et al. 2017: 57.

<07>	王宜人方無𢦏， 咸，王賞作冊般貝， 用作父己尊。來冊。[1]	*Wáng yí Rénfāng Wúwù,* *Xián, wáng shǎng zuòcè Bān bèi,* *yòng zuò fù Jǐ zūn. Lái cè.*

The king made the *yí* 宜 sacrifice with the leader *Wúwù* 無𢦏 (personal name) of the Rénfāng 人方. After the sacrifice, the king awarded the scribe of the interior, Bān 般 (personal name), [an unspecified number of] *bèi* 貝 'cowries'. [Bān 般] had this treasured vessel made for his father Jǐ 己. This was what happened when the king returned from the cè 冊 (place name).

Furthermore, the text on the bottom of the Sì sì Bìqí *hú* 四祀邲其壺 (also known as the Sìnián Bìqí *yǒu* 四年邲其卣 or Sìnián Bìqí *hú* 四年邲其壺) (WJC12429/ JC 5413; **Fig. 5.3.1-6**), dating to the reign of King Dì Xīn 帝辛, records different sacrifices made by the king on three consecutive days.

Fig. 5.3.1-6
The Sì sì Bìqí *hú* 四祀邲其壺 (left) and its text (right)[2]

[1] For a transcription see also Mǎ Chéngyuán 馬承源 1988: 6 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (1): 593, 2007: 750; Běnshū biānxiězǔ 本書編寫組 2003: 633-634; Zhāng Guìguāng 張桂光 2010: 174; Wú Zhènfēng 吳鎮烽 2012 (7): 227; Féng Shí 馮時 2016: 549-550 (with word commentaries).

[2] Wú Zhènfēng 吳鎮烽 2012 (22): 373-374 (also details on excavations and other collections). For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 5492; Mǎ Chéngyuán 馬承源 1986: 8, 1988: 9; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 5413, 2007: 3385; Běnshū biānxiězǔ 本書編寫組 2003: 586; Huáng Dékuān 黃德寬 2019: 222.

<08>	乙巳，王曰: “尊	*Yǐsì, wáng yuē: “Zūn*
	文武帝乙宜。”	*Wénwǔdì Yǐ yí.”*
	在召大廳。遘	*Zài Zhàodàtīng. Gòu*
	乙翌日。丙午，  ?[1]。	*Yǐ yì rì. Bǐngwǔ, ? .*
	丁未，  ?[2]。己酉，王	*Dīngwèi, ? . Jǐyǒu, wáng*
	在梌，邶其賜貝。	*zài Tú, Bìqí cì bèi.*
	在四月，唯王四祀，翌日。[3]	*Zài sìyuè, wéi wáng sì sì, yì rì.*

On the day *Yǐsì* 乙巳 (the 42nd in the 60-day *gānzhī* cycle), the king said: “[We make] the *yí* 宜 sacrifice for King Dì Yǐ 帝乙.” The sacrifice was made at Zhàodàtīng 召大廳 (palace name). [But the day] coincided with the day of the *yì* 翌 sacrifice for King Dàyǐ 大乙.[4] On the day *Bǐngwǔ* 丙午 (the 43rd in the 60-day *gānzhī* cycle), [the king] made the ? sacrifice. On the day *Dīngwèi* 丁未 (the 44th in the 60-day *gānzhī* cycle), [the king] made the ? sacrifice. On the day *Jǐyǒu* 己酉 (the 46th in the 60-day *gānzhī* cycle), the king was at Tú 梌 (place name) and [he] awarded Bìqí 邶其 (personal name) [an unspecified number of] *bèi* 貝 ‘cowries’. It was the fourth month, the king’s fifteenth ritual cycle, the *yì* 翌-sacrifice day.

In the Western Zhōu period, bronze inscriptions enjoyed increasing popularity and were the most widely available sources of writing. The Zhōu united with other feudal lords to conquer the Shāng and established the Zhōu Dynasty. In the Western Zhōu period, inscriptions on the bronze ritual vessels were used to publicize the kings’ virtuous policies and maintain their dominance. The bronze texts deal with, such as, royal awards, investiture ceremonies, sacrificial rituals and military campaigns. For example, the text on the Lì *guǐ* 利簋 (WJC 5111/ JC 4131; **Fig. 5.3.1-7**) records King Wǔ 武 of Zhōu’s conquest of the Shāng and reward to the general who participated in the military campaign.[5]

[1] Unknown sign.
[2] Unknown sign.
[3] For transcriptions see also Mǎ Chéngyuán 馬承源 1988: 9 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (4): 157, 2007: 3384; Běnshū biānxiězǔ 本書編寫組 2003: 586-587; Zhāng Guìguāng 張桂光 2010: 912; Wú Zhènfēng 吳鎮烽 2012 (22): 373; Liú Xiáng 劉翔 et al. 2017: 57-58 (also includes word commentaries); Huáng Dékuān 黃德寬 2019: 223-224 (also includes word commentaries).
[4] Dàyǐ 大乙 is also known as Chéng Tāng 成湯 or Tāng 湯, the founder of the Shāng dynasty.
[5] For works of Lì *guǐ* 利簋 see footnote in **2.3.4**.

Fig. 5.3.1-7
The Lì *guǐ* 利簋 (above) and its text (right)[1]

<09>	珷征商,[2] 唯甲子朝歲	*Wǔ zhēng Shāng, wéi Jiǎzǐ zhāo suì*
	星。克昏, 夙有商。辛未,	*xīng. Kè hūn, sù yǒu Shāng. Xīnwèi,*
	王在 ?[3] 師, 賜有事利	*wáng zài ? shī, cì yǒushì Lì*
	金。用作 ?[4] 公寶尊彝。[5]	*jīn. Yòng zuò ? gōng bǎo zūn yí.*

King Wǔ 武 of Zhōu attacked the Shāng when Suìxīng 歲星 (Jupiter) appeared that morning on the day *Jiǎzǐ* 甲子 (the 1st in the 60-day *gānzhī* cycle). [He] quickly defeated "muddle-headed" King Zhòu 紂 of Shāng and occupied the Shāng state. On the day of *Xīnwèi* 辛未 (the 8th in the 60-day *gānzhī* cycle), King Wǔ 武 was at ? shī 師 (place name) and awarded General Lì 利 (personal name) who participated in the military campaign with bronze. Lì 利 had this treasured vessel made for ? gōng 公 (personal name).

[1] Wú Zhènfēng 吳鎮烽 2012 (11): 41-42 (with details on excavations and other collections). For a rubbing see also Mǎ Chéngyuán 馬承源 1982: 71; 1986: 17, 1988: 14; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 4131, 2007: 2306; Gāo Míng 高明 1996: 372; Běnshū biānxiězǔ 本書編寫組 2003: 61; Féng Shí 馮時 2016: 557; Liú Xiáng 劉翔 et al. 2017: 59; Huáng Dékuān 黃德寬 2019: 225.

[2] Wǔ 珷 is the combination of wǔ 武 and wáng 王, and in bronze inscriptions it refers specifically to King Wǔ 武 of the Western Zhōu, the founder of the Zhōu Dynasty.

[3] Unknown sign.

[4] Unknown sign.

[5] For a transcription see also Mǎ Chéngyuán 馬承源 1988: 13-14 (also includes word commentaries); Gāo Míng 高明 1996: 372 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (3): 287, 2007: 2306; Běnshū biānxiězǔ 本書編寫組 2003: 61-62; 趙誠 Zhào Chéng 2003: 216; Zhāng Guìguāng 張桂光 2010: 627; Wú Zhènfēng 吳鎮烽 2012 (11): 41; Féng Shí 馮時 2016: 557-559 (with word commentaries); Liú Xiáng 劉翔 et al. 2017: 59-60 (with word commentaries); Huáng Dékuān 黃德寬 2019: 225-226 (with word commentaries).

The text on the Yú *jué* 盂爵 (WJC 8585/ JC 9104; **Fig. 5.3.1-8**) records the sacrifice made by King Kāng 康 of the Early Western Zhōu period.

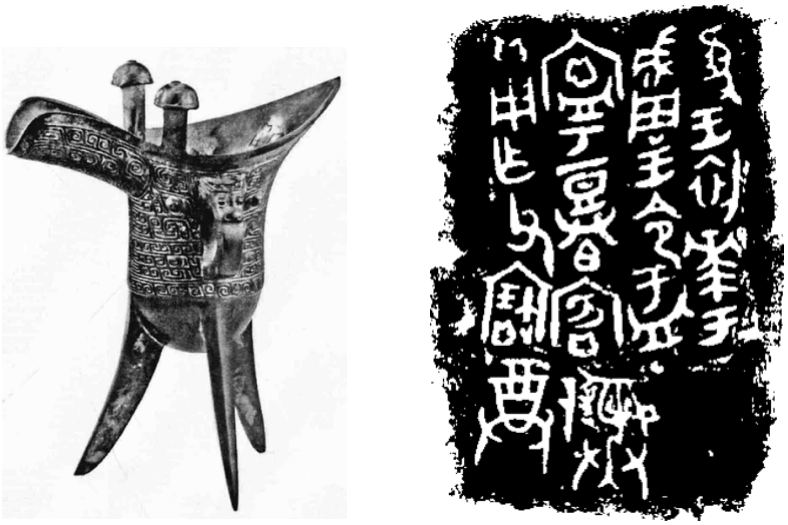

Fig. 5.3.1-8
The Yú *jué* 盂爵 (left) and its text (right)[1]

<10>	唯王初𡙇[2]于	*Wéi wáng chū hū yú*
	成周，王令盂	*Chéng Zhōu, wáng lìng Yú*
	寧鄧伯，寶	*níng Dèng bó, bǎo*
	貝。用作父寶尊彝。[3]	*bèi. Yòng zuò fù bǎo zūn yí.*

The king [Kāng 康] made the fú 祓 sacrifice at Chéng Zhōu 成周 (place name, Luòyì 洛邑, present-day Luòyáng 洛阳) for the first time [to remove misfortune and pray for good fortune]. The king ordered Yú 盂 (personal name) to greet the Elder of Dèng 鄧 (place name). Elder Dèng presented Yú 盂 [an unspecified number of] *bèi* 貝 'cowries' as a gift. [Yú 盂] had this treasured vessel made for his father.

[1] Wú Zhènfēng 吳鎮烽 2012 (17): 135 (with details on excavations and other collections). For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 4204; Mǎ Chéngyuán 馬承源 1986: 37, 1988: 44; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 9104, 2007: 4839; Běnshū biānxiězǔ 本書編寫組 2003: 513.

[2] *Hū* 𡙇 refers to the sacrifice that removes misfortune and prays for good fortune. It is traditionally written *fú* 祓.

[3] For transcriptions see also Mǎ Chéngyuán 馬承源 1988: 44 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (5): 305, 2007: 4839; Běnshū biānxiězǔ 本書編寫組 2003: 513-514; Zhāng Guìguāng 張桂光 2010: 1390; Wú Zhènfēng 吳鎮烽 2012 (17): 135.

By the end of the Western Zhōu period, the royal award and investiture ceremonies became a matter of routine,[1] and the bronze inscriptions became formulaic.[2] These texts normally consist of four parts: (1) a date and place notation; (2) the account of some event; (3) the record of gifts awarded; and (4) the dedication of the vessel.[3] The text on the Jiàn *guǐ* 諫簋 (WJC 5336/ JC 4285; **Fig. 5.3.1-9**),[4] dating to the reign of King Xiào 孝，late Western Zhōu period, is a good case in point.

According to the text on the Jiàn *guǐ* 諫簋, the investiture ceremony of the Western Zhōu period normally includes the following procedures: (1) The Zhōu king takes his seat. (2) The person, to whom the title is awarded, is accompanied by relevant officials into the temple and stands in the middle of the court. (3) The scribe of the palace reads the document of investiture, which consists of two parts: one is the appointment of the position, and the other is the list of rewarded items. (4) The person accepts the appointment.

Fig. 5.3.1-9

The Jiàn *guǐ* 諫簋 (left) and its text (below)[5]

[1] For a recent discussion of the rituals and ceremonies of the Western Zhōu see 李春豔 Lǐ Chūnyàn 2016.

[2] Shaughnessy 1992, 1997: 63-64, 2013: 70-71; Wáng Huī 王輝 2006: 4)

[3] For more details see discussions in **1.1.2**.

[4] For discussions of the Jiàn *guǐ* 諫簋 see Yáng Wénshān 楊文山 2005: 20-29; Xiè Míngwén 謝明文 2014: 46-54.

[5] Wú Zhènfēng 吳鎮烽 2012 (12): 55-57. For a rubbing see also also Yán Yīpíng 嚴一萍 1983: no. 2796; Mǎ Chéngyuán 馬承源 1986: 169, 1988: 151; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 4285, 2007: 2624; Běnshū biānxiězǔ 本書編寫組 2003: 195; Lù Huìliáng 陸惠良 and Yú Lì 于麗 2011: 256-257.

<11> (1) 唯五年三月初吉庚寅，王在
周師彔宮。(2) 旦，王格太室，即位。
司馬共佑諫，入門，立中廷。王
呼內史敖冊命諫，曰: “先王既
命汝纘司王囿，汝謀不有昏，
毋敢不善。今余唯或嗣命汝，
(3) 賜汝勒。”(4) 諫拜稽首，敢對揚天
子丕顯休。用作朕文考惠伯
尊簋，諫其萬年子子孫孫永寶用。[1]

[1] For a transcription see also Mǎ Chéngyuán 馬承源 1988: 152 (also includes word commentaries); Jiàoyùbù rénwén shèhuì kēxué zhòngdiǎn yánjiū jīdì 教育部人文社會科學重點研究基地 et al. 2001: 322; Zhāng Yàchū 張亞初 2001: 81; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (3): 401, 2007: 2624-2625; Běnshū biānxiězǔ 本書編寫組 2003: 195; Zhāng Guìguāng 張桂光 2010: 681-682; Lù Huìliáng 陸惠良 and Yú Lì 于麗 2011: 256-257 (also includes translations into modern Chinese and English); Wú Zhènfēng 吳鎮烽 2012 (12): 55 (with details on excavations and other collections).

(1) *Wéi wǔ nián sānyuè chūjí Gēngyín, wáng zài Zhōushīlù gōng*. (2) *Dàn, wáng gé tàishì, jí wèi. Sīmǎ Gòng yòu Jiàn, rù mén, lì zhōngtíng. Wáng hū nèi shǐ Áo cè mìng Jiàn, yuē: "xiānwáng jì mìng rǔ zuǎn sī wáng yòu, rǔ móu bù yǒu hūn, wú gǎn bùshàn. Jīn yú wéi huò sì mìng rǔ,* (3) *cì rǔ lè."* (4) *Jiàn bài jī shǒu, gǎn duì yáng tiān zǐ pī xiǎn xiū. Yòng zuò zhēn wén kǎo Huìbó zūn guǐ, Jiàn qí wànnián zǐzǐ sūnsūn yǒng bǎo yòng*.

(1) It was the fifth year of the reign of the king, the third month, first auspiciousness (*chūjí* 初吉), on the day *Gēngyín* 庚寅 (the 27th in the 60-day *gānzhī* cycle). The king was at the Zhōushīlù 周師彔 palace. (2) At dawn, the king came to the Grand Chamber [of the ancestral temple] and took his seat. The military administrator Gòng 共 (personal name) accompanied Jiàn 諫 (the owner of the vessel), entered and stood in the middle of the court. The king called out to the interior scribe Áo 敖 to read the letter of appointment to Jiàn 諫, saying: "[In the past] my father ordered you to take charge of the royal garden. There is nothing wrong with your thinking, and there is nothing that did not be taken seriously. Today I appoint you according to my father's appointment and (3) award you a horse bridle and bit." (4) Jiàn 諫 bowed and touched his head to the ground, daring in response to extol the Son of Heaven's beneficence. Herewith he makes for his cultured deceased father Huìbó 惠伯 this treasured *guǐ* 簋 (tureen). May Jiàn 諫's sons' sons and grandsons' grandsons for ten thousand years eternally treasure and use it.

As discussed above, in the bronze inscriptions of the Western Zhōu period, the kings figure prominently in the texts. But after the removal of the capital eastward to Luòyì 洛邑 (present-day Luòyáng 洛阳) ca. 770 BC, the power of the royal family of Zhōu declined rapidly. The Zhōu kings are seldom mentioned in bronze texts, but are replaced by feudal lords.[1] Bronze inscriptions in this period were primarily used to display the honor and status of the owner or his family. There are about 1000 bronze inscriptions coming from the Spring and Autumn period (ca. 771-476 BC)[2] and about 1980 bronze inscriptions from the Warring States period.[3]

In the Spring and Autumn period, the vast majority of bronze vessels were for personal use.[4] The inscriptions indicated, for example, the owner of the vessels, which shows the status of the owner and the marriage relationship between the two states. For instance, the texts on the Hán wáng Shìyě *gē* 邗王

[1] Mattos 1997: 85-86, 2013: 89-90; Qiú Xīguī 裘錫圭 2000, 2013: 50; Chén Jié 陈絜 2006: 138; Wáng Huī 王輝 2006: 10; Chén Lì 陳立 2012: 1; Fán Jùnlì 樊俊利 2018: 1; Huáng Dékuān 黃德寬 2019: 216.
[2] Luó Wèidōng 羅衛東 2005: 2.
[3] Fán Jùnlì 樊俊利 2018: 2.
[4] Féng Shí 馮時 2016: 524; Huáng Dékuān 黃德寬 2019: 216.

是埜戈[1] (WJC 17076/ JC 11263; **Fig. 5.3.1-10**) as well as the Cài zǐ *yí* 蔡子匜 (WJC 14881/ JC 10196; **Fig. 5.3.1-11**) indicate the owner of the vessel and its function for personal use.

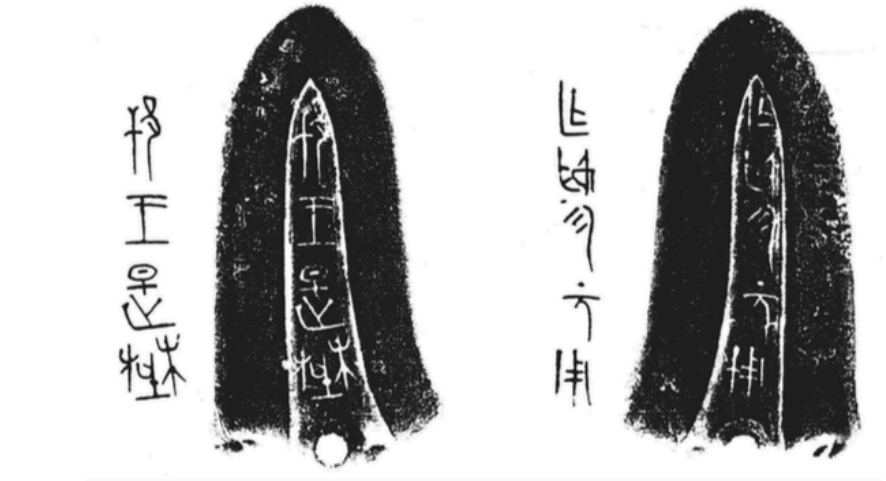

Fig. 5.3.1-10
The Hán wáng Shìyě *gē* 邗王是埜戈 (left) and its text (above)[2]

<12>	邗王是埜，	*Hán wáng Shìyě,*
	作为元用。[3]	*zuò wéi yuán yòng*.

King Shìyě 是埜 of Wú 吴 [state] had [this dagger-axe] made for his personal use.

[1] For discussions of the Hán wáng Shìyě *gē* 邗王是埜戈 see Lǐ Xiàtíng 李夏廷 2008: 76-80; Bái Bīng 白冰 2009: 172.

[2] Wú Zhènfēng 吳鎮烽 2012 (32): 120 (with details on excavations sand other collections). For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 7500; Mǎ Chéngyuán 馬承源 1987: 334, 1990: 364; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 11263, 2007: 6052.

[3] For a transcription see also Mǎ Chéngyuán 馬承源 1990: 364 (also includes word commentaries). Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (6): 485, 2007: 6052; Zhāng Guìguāng 張桂光 2010: 1715; Wú Zhènfēng 吳鎮烽 2012 (32): 120.

Fig. 5.3.1-11
The Cài zǐ *yí* 蔡子匜 (above) and its text (right)[1]

<13>	蔡子佗自	*Cài zǐ Tuó zì*
	作會匜。[2]	*zuò huì yí.*

The son of the feudal lord of Cài 蔡 [state] had a an *yí*-aquamanile (匜) made on his own initiative.

The text on the Càihóu *pán* 蔡侯盤 (also known as the Wéi zhòng jī dān *pán* 鄬仲姬丹盤) (WJC 14519; **Fig. 5.3.1-12**) reflects a dynastic marriage between the two states Cài 蔡 and Chǔ 楚 in the Spring and Autumn period.[3]

<14>	唯王正月初	*Wéi wáng zhēngyuè chū*
	吉丁亥，蔡侯	*jí Dīnghài, Cài hóu*
	作媵鄬仲姬	*zuò yìng Wéi zhòng jī*
	丹盥盤，用祈	*dān guàn pán, yòng qí*
	眉寿万年无	*méi shòu wànnián wú*
	疆子子孫孫永寶	*jiāng zǐzǐ sūnsūn yǒng bǎo*
	用之。[4]	*yòng zhī.*

[1] Wú Zhènfēng 吳鎮烽 2012 (26): 260 (with details on excavations and other collections). For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 6813; Mǎ Chéngyuán 馬承源 1987: 334, 1990: 364; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 10196, 2007: 5494.

[2] For a transcription see also Mǎ Chéngyuán 馬承源 1990: 364 (also includes word commentaries); Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (6): 139, 2007: 5494; Zhāng Guìguāng 張桂光 2010: 1567; Wú Zhènfēng 吳鎮烽 2012 (26): 260.

[3] For more discussions of the marriage alliance between the Cài 蔡 and other states in the Spring and Autumn period see Huáng Jǐnqián 黃錦前 2020: 85-91.

[4] For a transcription see also Liú Yǔ 劉雨 and Lú Yán 盧岩 2002 (2): 15; Wú Zhènfēng 吳鎮烽 2012 (25): 556 (with details on excavations and other collections); Huáng Jǐnqián 黃錦前 2020: 86.

It was the first month, first auspiciousness (*chūjí* 初吉), on the day *Dīnghài* 丁亥 (the 24th in the 60-day *gānzhī* cycle). The feudal lord of Cài 蔡 had a *guàn*-washing basin (盥盤) made for Lady *Wéi zhòng jī dān* 鄬仲姬丹 (from the Chǔ 楚 state) for her marriage. May she live long for ten thousand years, and may her sons' sons and grandsons' grandsons treasure and use it forever.

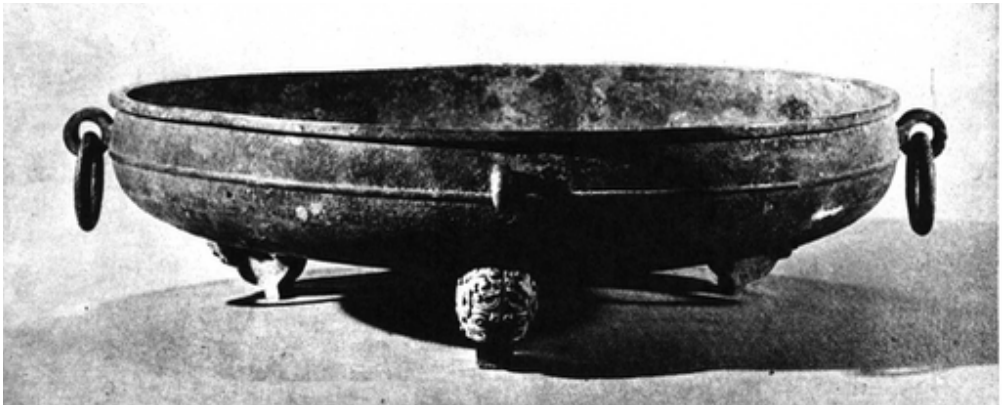

Fig. 5.3.1-12
The Càihóu *pán* 蔡侯盤 (above) and its text (left)[1]

[1] Wú Zhènfēng 吳鎮烽 2012 (25): 556. For a rubbing see also Hénánshěng wénwù yánjiūsuǒ 河南省文物研究所, Hénánshěng Dānjiāngkùqū kǎogǔ fājuéduì 河南省丹江庫區考古發掘隊 and Xīchuānxiàn bówùguǎn 淅川縣博物館 1991: photo: Figure 82-1; rubbing: 229: fig. 170-2; Liú Yǔ 劉雨 and Lú Yán 盧岩 2002 (2): 15.

In the Warring States period, bronze inscriptions were used more often in recording the years of manufacture as well as the names of those responsible for their manufacture.[1] The Zhùkè *dòu* 鑄客豆 (also known as the Wáng hòu liùshì *dòu* 王後六室豆) (WJC 6135/ JC 4675; **Fig. 5.3.1-13**), dating to the late Warring States period is a good case in point.

Fig. 5.3.1-13
The Zhùkè *dòu* 鑄客豆 (left) and its text (right)[2]

<15> 鑄客為王後六室為之。[3]

Zhùkè wèi wáng hòu liùshì wéi zhī.

The metalworker made [it] for the six chambers of the queen mother [of the Chǔ 楚 state].

Another example is the Gōngzhū zuǒguān *dǐng* 公朱左官鼎 (also known as the Yě yì *dǐng* 冶意鼎) (WJC 2256/ JC 2701; **Fig. 5.3.1-14**), unearthed at Líntóng 臨潼 in Shǎnxī province in 1960, dating to the middle or late Warring States period.[4] The texts on the vessel body and lid record the year of manufacture as well as the names of those responsible for its manufacture.

[1] Mattos 1997: 86, 2013: 90-92; Luó Wèidōng 羅衛東 2005: 1; Chén Jié 陈絜 2006: 139-140; Wáng Huī 王輝 2006: 11; Qiú Xīguī 裘錫圭 2013: 58; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 112-113; Fán Jùnlì 樊俊利 2018: 1.

[2] Wú Zhènfēng 吳鎮烽 2012 (13): 383. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 3105; Mǎ Chéngyuán 馬承源 1987: 434, 1990: 441; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 3105, 2007: 4675.

[3] For a transcription see also Mǎ Chéngyuán 馬承源 1990: 441 (also includes word commentaries). Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (3): 598, 2007: 3037; Zhāng Guìguāng 張桂光 2010: 776; Wú Zhènfēng 吳鎮烽 2012 (13): 383 (with details on excavations and other collections).

[4] Huáng Shèngzhāng 黃盛璋 1981: 39-44; 1989: 29; Wú Zhènfēng 吳鎮烽 2012(4): 484.

Fig. 5.3.1-14
The Gōngzhū zuǒguān *dǐng* 公朱左官鼎 (left) and its text (below)[1]

Lid

Vessel body

<16> The text on the lid: 公朱左官

Gōngzhū(chú) Zuǒguān

The Zuǒguān 左官 (official title) of the palace kitchen

[1] Wú Zhènfēng 吳鎮烽 2012(4): 484. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 1205; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 2701, 2007: 1382.

The text on the vessel body:

> 十一年十一月乙巳朔, 左官冶大夫杕命冶慒鑄鼎, 容一斛。[1]
>
> *Shíyīnián shíyīyuè Yǐsì shuò, zuǒguān yědàfū Dì mìng yě Cáo zhùdǐng, róng yīhú.*
>
> In the eleventh year [of the reign of the king], the eleventh month, on the day *Yǐsì* 乙巳 (the 42rd in the 60-day *gānzhī* cycle), the first day of the month. Dì 杕 who is in charge of casting with the title *Zuǒguān* 左官 ordered the metalworker named Cáo 慒 to cast a *dǐng* 鼎 (bronze tripod vessel) which has the capacity of one *hú* 斛 (capacity unit, about 2000 ml).

Before the Spring and Autumn period, the vast majority of the bronze inscriptions were cast on the bronze vessels (such as the Xiǎochén Yú *zūn* 小臣艅尊 and Jiàn *guǐ* 諫簋 discussed above), but after the middle of the Warring States period, they were engraved with a knife after the vessels were made.[2] The texts on, such as, the Zhùkè *dòu* 鑄客豆 and the Gōngzhū (chú) zuǒguān *dǐng* 公朱左官鼎 discussed above are good examples.

In addition, during the late Spring and Autumn period and the Warring States period, inscriptions were more often displayed on the outer surface of bronze vessels.[3] The Hǔfú 虎符, a tiger-shaped tally issued to generals as imperial authorization for troop movement, is a good case in point. For example, the text of the Dù hǔfú 杜虎符 (WJC19177/ JC 12109; **Fig. 5.3.1-15**),[4] unearthed at Xī'ān 西安 in Shǎnxī province in 1973, dating to the middle Warring States period, is displayed on the outer surface, indicating how it works.

Fig. 5.3.1-15
The Dù hǔfú 杜虎符[5]

[1] For a transcription see also Zhāng Yàchū 張亞初 2001: 45; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (2): 319, 2007: 1382; Zhāng Guìguāng 張桂光 2010: 402; Wú Zhènfēng 吳鎮烽 2012 (4): 484 (also details on excavations and other collections).

[2] Qiú Xīguī 裘錫圭 2000: 79; 2013: 58.

[3] Mattos 1997: 121, 2013: 120-122.

[4] For discussions of the Dù hǔfú 杜虎符 see Hēi Guāng 黑光 1979: 93-94; MǎFēibǎi 馬非百 1982: 85; Zhū Jiéyuán 朱捷元 1983: 53-55; Hú Shùnlì 胡順利 1983: 88; Dài Yīngxīn 戴應新 1983: 1012-1013; Chén Zūnxiáng 陳尊祥 1985: 25-29; Zēng Wéihuá 曾維華 1998: 79-80; Yàn Xīnzhì 晏新志 2018: 74-79.

[5] Wú Zhènfēng 吳鎮烽 2012(34): 551. For a rubbing see also Yán Yīpíng 嚴一萍 1983: no. 7887; Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 1994: no. 12109, 2007: 6600.

<17>	兵甲之符。右在君，	*bīng jiǎ zhī fú. Yòu zài jūn,*
	左在杜。	*zuǒ zài Dù.*
	凡興士被甲,	*Fán xīng shì bèi jiǎ,*
	用兵五十人以上，	*yòng bīng wǔshírén yǐshàng,*
	必會君符，	*bì huì jūn fú,*
	乃敢行之。	*nǎi gǎn xíng zhī.*
	燔隧之事，	*fán suì zhī shì,*
	雖毋會符，行也。[1]	*suī wù huì fú, xíng yě.*

The right half of the tiger-shaped tally is held by the lord, and the left half is held by the general of Dù 杜 area. If more than 50 people are to be mobilized, the general's half tally must meet with the lord's to mobilize the troops. In the event of lightening up the beacon fires, even if there is no match with [the tally half of the lord], you may mobilize the troops.

3. Covenant texts (*méngshū* 盟書 or *zǎishū* 載書)

In 1965, about 650 jade or stone fragments bearing texts written with a brush were unearthed from some 400 sacrificial pits in the southeast of Hóumǎ 侯馬, Shānxī province. Texts on these fragments were recordings of covenants, dating to the late Spring and Autumn or the beginning of the Warring States period,[2] known as the *Hóumǎ méngshū* 侯馬盟書.[3] Each covenant is written on a single jade or stone tablet and submitted to the covenant lord. A large number of these texts were used in appeals where the individual covenantor turned to the powerful spirits of the ancestors who should supervise him to fulfill his oath, that is, to serve the covenant lord and to exclude the named enemies.[4] The covenant texts of this sort were also discovered at Wēnxiàn 溫縣 of Hénán province during the late 1970s and the early 1980s, which is known as the *Wēnxiàn méngshū* 溫縣盟書.[5]

[1] For a transcription see also Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2001c (6): 777, 2007: 3384; Zhāng Guìguāng 張桂光 2010: 912; Wú Zhènfēng 吳鎮烽 2012 (34): 551 (also details on excavations and other collections).

[2] Scholars disagree on the precise date of these texts; see more discussions in Gāo Zhì 高智 2015.

[3] Shānxīshěng wénwù gōngzuò wěiyuánhuì 山西省文物工作委員會 1976; Gāo Míng 高明 1996: 419-426; Weld 1997: 125, 2013: 124; Liú Yún 劉雲 2012: 29; Qiú Xīguī 裘錫圭 2013: 51; Féng Shí 馮時 2016: 674-676; Zhāng Hàn 張頷 et al. 2016, 2018; Hé Línyí 何琳儀 2017: 3; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 97.

[4] Weld 1997: 125, 2013: 124-125; Gāo Zhì 高智 2015. For important studies of the *Hóumǎ méngshū* 侯馬盟書 in the last 50 years see Gāo Zhì 高智 2015.

[5] Hénánshěng wénwù yánjiū 河南省文物研究 1983: 78-89; Weld 1997: 126, 2013: 125; Qiú Xīguī 裘錫圭 2000: 69, 2013: 51; Féng Shí 馮時 2016: 676-677. The covenant texts (known as the *Qìnyáng méngshū* 沁陽盟書 or the *Qìn yáng yùjiǎn* 沁陽玉簡) discovered during the 1930s and 1940s belong also to the *Wēnxiàn méngshū* 溫縣盟書. For more discussions see Chén Mèngjiā 陳夢家 1966: 277-281; Zhāng Hàn 張頷 1979: 100-101.

4. Seal inscriptions (璽印文字 *xǐyìn wénzì*)

Seal inscriptions refer to signs on seals. There are about 6,000 pre-Qin seal inscriptions.[1] According to traditional texts, the use of official seals in China had already begun during the Spring and Autumn period (or the Shāng period),[2] but none of the pre-Qin seals discovered so far can be firmly dated to the Spring and Autumn period. Instead, the vast majority of these seals belong to the Warring States period.[3] Pre-Qin seals consist of official seals (*guānfāng xǐyìn* 官方璽印) and personal seals (*sīrén xǐyìn* 私人璽印). Inscriptions on official seals are the official titles, the names of institutions, and the names of the official vessels. These seals are the certificate of the official appointment and the authority.[4] For example:

Fig. 5.3.1-16
The official seal *Jìdū Sīgōng* 薊都司工[5]

薊都司工 *Jìdū Sīgōng*

薊都 *Jìdū*: the capital of Yān 燕, a state of the Warring States period
司工 *Sīgōng*: an official in charge of land, water conservancy and construction

With regard to personal seals, seals with personal names are the most numerous, normally inscribing the person's full names, given names or family names, which approximates the signature of the owner. The following two personal seals (**Fig. 5.3.1-17**) are a good case in point.

[1] Zhuāng Xīnxīng 莊新興 2003: 1. For collections of seal inscriptions see Luó Fúyí 羅福頤 1981a, 1981b; for seals newly unearthed in the 20th century see Zhōu Xiǎolù 周曉陸 2010; for a brief history of the studies on seal inscriptions see Cáo Jǐnyán 曹錦炎 2017: 25-39; Xiāo Yì 蕭毅 2017: 3-5. For more discussions for seals inscriptions see Luó Fúyí 羅福頤 1981c, Chén Guāngtián 陳光田 2009 and Cáo Jǐnyán 曹錦炎 2017.
[2] Cáo Jǐnyán 曹錦炎 2017: 13-17.
[3] Qiú Xīguī 裘錫圭 2000: 80-81, 2013: 59; Zhuāng Xīnxīng 莊新興 2003: 1-2; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 98; Hé Línyí 何琳儀 2017: 10.
[4] Gāo Míng 高明 1996: 457-458; Zhuāng Xīnxīng 莊新興 2003: 1-2; Féng Shí 馮時 2016: 684; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 99; Cáo Jǐnyán 曹錦炎 2017: 46-48; Xiāo Yì 蕭毅 2017: 1-2; Huáng Dékuān 黃德寬 2019: 381-382.
[5] For a rubbing see Luó Fúyí 羅福頤 1981: 14, figure 0082; Xiāo Yì 蕭毅 2017: 25 (with annotations).

(1) 

西方疾 *Xīfāng Jí*[1]

西方 *Xīfāng*: compound surname
疾 *Jí*: given name

(2) 

王慶忌 *Wáng Qìngjì*[2]

王 *Wáng*: surname
慶忌 *Qìngjì*: given name

Fig. 5.3.1-17
Personal seals and their texts

There is also a kind of seal inscribed with idioms or auspicious words, for instance (**Fig. 5.3.1-18**):

(1) 

敬事得志 *jìngshì dézhì*[3]

敬事 *jìngshì*: to serve cautiously and respectfully
得志 *dézhì*: to get what you want

(2) 

長生 *chángshēng*[4]

長生 *chángshēng*: longevity of life

Fig. 5.3.1-18
Seals inscribed with idioms or auspicious words

In addition, most pottery inscriptions, usually recording the name of the potter, the area or institute of its manufacture, in the Warring States period were made with seals before the firing of the pottery vessels. So most pottery inscriptions[5] in this period are actually seal inscriptions.[1]

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[1] For rubbings and photos see Luó Fúyí 羅福頤 1981: 366, figure 3966; Zhōngguó xǐyìn zhuànkè quánjí biānjí wěiyuánhuì 中国璽印篆刻全集编辑委员会 1999 (2): 20, figure 131; Xiāo Yì 蕭毅 2017: 135 (with annotations).

[2] For rubbings see Luó Fúyí 羅福頤 1981: 509, figure 5587; Lài Fēi 賴非 1998: 97, figure 180; Xiāo Yì 蕭毅 2017: 165 (with annotations).

[3] For rubbings see Luó Fúyí 羅福頤 1981: 443, figure 4889; Hán Tiānhéng 韓天衡 and Sūn Wèizǔ 孫慰祖 2002: 10, figure 51; Xiāo Yì 蕭毅 2017: 264 (with annotations).

[4] For rubbing and photo see Sūzhōu bówùguǎn 蘇州博物館 2010: 45, figure 40; Xiāo Yì 蕭毅 2017: 219 (with annotations).

[5] For collections of pottery inscriptions see Gāo Míng 高明 1990; Gāo Míng 高明 and Gě Yīnghuì 葛英會

5. Coin inscriptions (*huòbì wénzì* 貨幣文字)

Coin inscriptions refer to signs on minted coins, also known as *huàwén* 化文 or *quánwén* 泉文. Minted coins began to be used in the Spring and Autumn period, and by the Warring States period they were circulated in large quantities.[2] Most of the pre-Qin coins discovered so far are bronze coins dating to the Warring States period, bearing the names of the places where they were put into circulation, or graphs indicating the weight or value.[3] For example,

(1) 

安陽 *Ānyáng*:

A place name in the Yān 燕 or Zhào 趙 state[4]

(2) 

半兩 *bàn liǎng*:

The value of half a currency unit (from the Qín 秦 state)[5]

Fig. 5.3.1-19
Minted coins of the Warring States period

1991; Xú Gǔfǔ 徐穀甫 and Wáng Yánlín 王延林 1996; for newly unearthed pottery inscriptions see Xú Zàiguó 徐再國 2018.

[1] Qiú Xīguī 裘錫圭 2000: 80-81, 2013: 59; Zhuāng Xīnxīng 莊新興 2003: 11; Cáo Jǐnyán 曹錦炎 2017: 57-65; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 100-107; Hé Línyí 何琳儀 2017: 10.

[2] For collections of coin inscriptions see Shāng Chéngzuò 商承祚, Wáng Guìchén 王貴忱 and Tán Dìhuá 譚棣華 1983; Wāng Qìngshēng 汪慶生 1986; Zhāng Hàn 張頷 1986; Zhōngguó qiánbì dàcídiǎn biānzuǎn wěiyuánhuì 中國錢幣大辭典編纂委員會 1995 and for more discussions see Qiú Xīguī 裘錫圭 1978; Zhū Huá 朱華 1994; Zhào Déxīn 趙德馨 1995; Zhāng Chí 張弛 1997; Huáng Xīquán 黃錫全 2001a, 2001b; Hé Línyí 何琳儀 2002; Wú Liángbǎo 吳良寶 2005; Wáng Xiàntáng 王獻唐 2006.

[3] Qiú Xīguī 裘錫圭 2000: 80, 2013: 59; Wú Liángbǎo 吳良寶 2005: 2; Chén Lì 陳立 2013; Féng Shí 馮時 2016: 700; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 107-112; Hé Línyí 何琳儀 2017: 10.

[4] For a illustration see Wāng Qìngzhèng 汪慶正 1988: 557, figure 2290-2316; Zhōngguó qiánbì dàcídiǎn biānzuǎn wěiyuánhuì 中國錢幣大辭典編纂委員會 1998a: 251; Wú Liángbǎo 吳良寶 2005: 206, figure 8-10. For discussions see Qiú Xīguī 裘錫圭 1978: 78; Zhōngguó qiánbì dàcídiǎn biānzuǎn wěiyuánhuì 中國錢幣大辭典編纂委員會 1998: 250-253; Hé Línyí 何琳儀 2002: 33-36; Wú Liángbǎo 吳良寶 2002: 334, 2005: 205-206; Wáng Xiàntáng 王獻唐 2006: 31-33. Scholars like Xú Bǐngkūn 徐秉琨 1985; Huáng Xīquán 黃錫全 (2001: 166-168) provide an alternative reading Yáng'ān 陽安.

[5] For a rubbing see Wāng Qìngzhèng 汪慶正 1988: 1062, figure 4282; Zhōngguó qiánbì dàcídiǎn biānzuǎn wěiyuánhuì 中國錢幣大辭典編纂委員會 1998b: 4-77; Huáng Xīquán 黃錫全 2001: 325: figure 102; Wú Liángbǎo 吳良寶 2005: 256, figure 9-6. For discussions see Jiǎng Ruòshì 蔣若是 1989, 1994: 85-96; Zhōngguó qiánbì dàcídiǎn biānzuǎn wěiyuánhuì 中國錢幣大辭典編纂委員會 1998b: 3-78; Huáng Xīquán 黃錫全 2001: 324-326; Wú Liángbǎo 吳良寶 2005: 255-258.

6. Bamboo and silk manuscripts *jiǎnbó wénzì* 簡帛文字[1]

The silk manuscript discovered at Zǐdànkù 子彈庫 of Chángshā 長沙 in Húnán province is the earliest and the only complete silk manuscript so far that dates to the Warring States period. It contains over 900 signs written with a brush, together with colored drawings. The text concerns myths related to astronomical phenomena and the four seasons.[2]

Among the materials of the Warring States period, bamboo and wood slips are most common.[3] The earliest bamboo and wood slips bearing writing discovered to date are from the Warring States period,[4] the vast majority of which are from the Chǔ 楚 state (an area roughly covering present-day Húnán, Húběi, Hénán provinces).[5] The contents of these texts can be divided into four main categories:[6]

(1) Official documents, represented by the Bāoshān 包山 manuscript.[7] Most of these documents are official archives of case and trial records, such as BS 15-16:

> 僕以告君王，君王囑仆于子左尹，子左尹囑之新造迅尹丹，命为僕至典。[8]
>
> *Pú yǐ gào jūnwáng, jūnwáng zhǔ pú yú zǐ Zuǒyǐn, zǐ Zuǒyǐn zhǔ zhī Xīnzào Xùnyǐn Dān, mìng wéi pú zhìdiǎn.*

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[1] Important periodicals and websites for the bamboo and silk manuscript are: *Jiǎnbó yánjiū* 簡帛研究 and *Jiǎnbó yìcóng* 簡帛譯叢 by Zhōngguó shèhuì kēxuéyuàn jiǎnbó yánjiū zhōngxīn 中國社會科學院簡帛研究中心, *Guójì jiǎnbó yánjiū tōngxùn* 國際簡帛研究通訊 by Guójì rúxué liánéhuì guójì jiǎnbó yánjiū zhōngxīn 國際儒學聯合會國際簡帛研究中心 (http://www. bamboosilk.org), *Chūtǔ wénxiàn yǔ gǔwénzì yánjiū* 出土文獻與古文字研究 by Fùdàn dàxué chūtǔ wénxiàn yǔ gǔwénzì yánjiū zhōngxīn 複旦大學出土文獻與古文字研究中心 (http://www.fdgwz.org.cn/), *Jiǎnbó* 簡帛 by Wǔhàn dàxué jiǎnbó yánjiū zhōngxīn 武漢大學簡帛研究中心 (http://m.bsm.org.cn/), and *Chūtǔ wénxiàn* 出土文獻 by Qīnghuá dàxué chūtǔ wénxiàn yánjiū yǔ bǎohù zhōngxīn 清華大學出土文獻研究與保護中心.

[2] Qiú Xīguī 裘錫圭 2000: 81-82, 2013: 60; Zhāng Xiǎnchéng 張顯成 2004: 56; Féng Shí 馮時 2016: 664-665; Hé Línyí 何琳儀 2017: 22; Cài Xiānjīn 蔡先金 2017: 6; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 82; Huáng Dékuān 黃德寬 2019: 335-336. For a transcription with word commentaries see Féng Shí 馮時 2016: 739-757.

[3] Fán Jùnlì 樊俊利 2018: 2; Huáng Dékuān 黃德寬 2019: 322.

[4] Huáng Dékuān 黃德寬 2019: 322.

[5] Qiú Xīguī 裘錫圭 2000: 81, 2013: 59-60; Chén Lì 陳立 2012: 11; Chén Wěi 陳偉 2012: 2; Hé Línyí 何琳儀 2017: 21; Fán Jùnlì 樊俊利 2018: 2; Xú Jùngāng 徐俊剛 2018: 16.

[6] Qiú Xīguī 裘錫圭 2000: 81-82, 2013: 59-60; Zhāng Xiǎnchéng 張顯成 2004: 226; Chén Wěi 陳偉 2012: 3; Chén Shìhuī 陳世輝 and Tāng Yúhuì 湯餘惠 2017: 89.

[7] Bāoshān 包山 manuscript were unearthed at the Bāoshān 包山 grave of Jīngmén 荊門 in Héběi province in 1986-1987.

[8] For photos of BS 15-16 see Húběishěng jīngshā kǎogǔduì 湖北省荊沙考古隊 1991b: figure 7-8. For transcriptions see Húběishěng jīngshā kǎogǔduì 湖北省荊沙考古隊 1981b: 17-18; Liú Xìnfāng 劉信芳 2003: 23; Chén Wěi 陳偉 2009: 11; Zhū Xiǎoxuě 朱曉雪 2013: 394. For more discussions see Chén Wěi 陳偉 1996: 57-59; Liú Xìnfāng 劉信芳 2003: 25-26; Chén Wěi 陳偉 2009: 13; Zhū Xiǎoxuě 朱曉雪 2013: 402-403.

> I appeal to the king (of the Chǔ 楚 state). The king handed me over. The king forwarded the complaint to Zuǒyǐn 左尹 (name of an offical, probably the prime minister) and ordered the prime minister to handle it. Zuǒyǐn 左尹 handed the case to Xīnzào Xùnyǐn 新造迅尹 (name of an official, probably related to the lawsuit) named Dān 丹. He asked me to show my name registration as a basis for the verdict.

(2) Records of divinations or divinatory texts concerning dates (known as *rìshū* 日書 in Chinese).[1] Illness is a common topic for divinations, which can be seen in manuscripts, such as the Wàngshān 望山 manuscript,[2] the Xīncài 新蔡 manuscript and the Bāoshān 包山 manuscript.[3] The following example is from BS 223,[4] and the divination was made for a patient who had heart disease (*xīnjí* 心疾), no strength (*shǎoqì* 少氣), and could not eat (*bù nèishí* 不內食):

> 既有病，病心疾，少氣，不內食，尚毋有恙。
>
> *Jì yǒubìng, bìng xīnjí, shǎoqì, bù nèishí, shàng wú yǒuyàng.*

(3) Records of the funerary objects buried with the person (known as *qiǎncè* 遣策 or *fèngshū* 賵书 in Chinese) can be seen in manuscripts, such as the Zēnghóu Yǐ 曾侯乙 manuscript,[5] the Yángjiāwān 楊家灣 manuscript,[6] and the Xìnyáng 信陽 manuscript.[7] For example, according to the excavation report, two grass mats and four bamboo mats were unearthed from Bāoshān 包山 grave no. 2, and they were all edged with tough silk.[8] The record on BS 263 should be the description of these mats:

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[1] For more discussions of divinations in bamboo manuscripts see Lǐ Líng 李零 1993; Chén Wěi 陳偉 2012: 215-272.

[2] The Wàngshān 望山 manuscript were unearthed at Wàngshān 望山 grave no. 2 of Jiānglíng 江陵 in Húběi province in 1965-1966.

[3] The Xīncài 新蔡 manuscript were unearthed at the Píngchēyú jūn 平車輿君 grave of Xīncài 新蔡 in Hénán province in 1994.

[4] For more discussions of BS 223 see Chén Wěi 陳偉 2012: 219-220; Féng Huá 馮華 2012: 6-7.

[5] The Zēnghóu Yǐ 曾侯乙 manuscript were unearthed at the Zēnghóu Yǐ 曾侯乙 grave of Suízhōu in Húběi province in 1978. For photos see Húběishěng bówùguǎn 湖北省博物館 1989; Zhāng Guāngyù 張光裕 et al. 1997. For transcriptions and discussions see Zhāng Guāngyù 張光裕 et al. 1997; Chén Wěi 陳偉 2009: 340-373; Péng Yǔ 鵬宇 2010; Xiāo Shèngzhōng 蕭聖中 2011.

[6] The Yángjiāwān 楊家灣 manuscript were unearthed at Yángjiāwān 楊家灣 grave no.6 of Chángshā in Húnán province in 1954. For photos and drawings see Shāng Chéngzuò 商承祚 1995: 267-273; Húnánshěng bówùguǎn 湖南省博物館 et al. 2000. For inscriptions and discussions see Shāng Chéngzuò 商承祚 1995: 267-273; Chén Wěi 陳偉 2009: 475-476.

[7] The Xìnyáng 信陽 manuscript was unearthed in Chángtáiguān 長臺關 grave no.1 of Xìnyáng 信陽 in Hénán province in 1956. For photos and drawings see Hénánshěng wénhuàjú wénwù gōngzuòduì 河南省文化局文物工作隊 1959; Hénánshěng wénwù yánjiūsuǒ 河南省文物研究所 1986; Shāng Chéngzuò 商承祚 1995: 135-180. For inscriptions and discussions see Hénánshěng wénwù yánjiūsuǒ 河南省文物研究所 1986; Shāng Chéngzuò 商承祚 1995: 135-180; Chén Wěi 陳偉 2009: 374-393.

[8] Húběishěng jīngshā kǎogǔduì 湖北省荊沙考古隊 1991b(1): 166.

一寢席，二俾席，一跪席，二莞席，皆有綉。[1]

Yī qǐnxí, èr bǐxí, yī guìxí, èr guǎnxí, jiēyǒu xiù.

One sleeping mat, two mats for keeping out the wind, one mat for squatting, and two mats for sacrifice, all of them edged with tough silk.

Also, four bronze scoops and two bronze ladles (**Fig. 5.3.1-20**) were found in Wàngshān 望山 grave no. 2. The record on Wàngshān 望山 47 should be the description of these bronze vessels:

四金匕，二金勺。[2]

Sì jīnbǐ, èr jīnsháo.

Four bronze scoops, and two bronze ladles.

Fig. 5.3.1-20

The bronze scoop (left; WM2: T121) and ladles (right; WM2: T64, T65) of Wàngshān 望山 grave no. 2[3]

(4) Literary works. Among these four categories, literary works account for a larger proportion, mainly dating to the middle and late Warring States period. These literary works can be divided into four categories: prose, poems, myths,

[1] For a photo of BS 263 see Húběishěng jīngshā kǎogǔduì 湖北省荊沙考古隊 1991b: figure 113. For transcriptions see Húběishěng jīngshā kǎogǔduì 湖北省荊沙考古隊 1991b: 38; Liú Xìnfāng 劉信芳 2003: 268; Chén Wěi 陳偉 2009: 120; Zhū Xiǎoxuě 朱曉雪 2013: 703. For more discussions see Húběishěng jīngshā kǎogǔduì 湖北省荊沙考古隊 1991b: 63; Liú Xìnfāng 劉信芳 2003: 282-283; Chén Wěi 陳偉 2009: 127; Zhū Xiǎoxuě 朱曉雪 2013: 713-710.

[2] For more discussions of Wàngshān 望山 47 see Húběishěng wénwù kǎogǔ yánjiūsuǒ 湖北省文物考古研究所 et al. 1995: 125; Shāng Chéngzuò 商承祚 1995: 102; Chén Wěi 陳偉 2009: 297.

[3] Húběishěng wénwù kǎogǔ yánjiūsuǒ 湖北省文物考古研究所 1996: figure 70-3 & 4.

and novels, among which prose accounts for the vast majority, and the proportion of poetry, myth and novel is relatively small. For example,

① Prose

Examples mainly come from the Guōdiàn 郭店,[1] Shàngbó 上博[2] and Qīnghuá 清華 manuscripts.[3] The Guōdiàn 郭店 manuscript includes about 730 bamboo slips bearing graphs, consisting of 18 Taoist or Confucian works, such as *Lǎozǐ* 老子,[4] *Tàiyī shēngshuǐ* 太一生水,[5] *Lǔ Mùgōng wèn Zǐsī* 魯穆公問子思,[6] *Zhōngxìn zhīdào* 忠信之道[7] and *Xìng zì mìng chū* 性自命出.[8] The Shàngbó 上博 manuscript, which consists of about 1200 bamboo slips bearing graphs, contains ca. 100 literary works, such as *Kǒngzǐ shīlùn* 孔子詩論,[9] *Xìngqíng lùn* 性情論,[10] *Róngchéng shì* 容成氏,[11] *Zhōuyì* 周易,[12] *Lǔbāng dàhàn* 魯邦大旱[13] and *Cáomò zhī chén* 曹沫之陳.[14] The Qīnghuá 清華 manuscript includes about 2300 bamboo slips bearing graphs, consisting of more than 60 literary works, such as *Bǎoxùn* 保訓,[15] *Xìnián* 系年,[16] *Mìngxùn*

[1] The Guōdiàn 郭店 manuscript was unearthed at Guōdiàn 郭店 grave no. 1 of Jīngmén 荊門 in Húběi province in 1993.

[2] The Shàngbó 上博 manuscript was bought by the Shānghai Museum from Hongkong in 1994. These bamboo slips include about 1200 bamboo slips (over 35,000 characters), and are all literary works.

[3] The Qīnghuá 清華 manuscript was collected by Qīnghuá 清華 University in 2008, and consistis of 2388 bamboo slips. It only contains literary works.

[4] For photos see Jīngménshì bówùguǎn 荊門市博物館 1998: 1-10. For transcriptions and discussions see Jīngménshì bówùguǎn 荊門市博物館 1998: 109-120; Dīng Yuánzhí 丁原植 1999; Liú Xìnfāng 劉信芳 1999; Allan and Williams 2002; Lǐ Ruòhuī 李若暉 2004; Zhái Xìnbīn 翟信斌 and Zhèng Xiàohuá 鄭孝華 2007a.

[5] For photos see Jīngménshì bówùguǎn 荊門市博物館 1998: 11-14. For more discussions see Jīngménshì bówùguǎn 荊門市博物館 1998: 123-126; Zhái Xìnbīn 翟信斌 and Zhèng Xiàohuá 鄭孝華 2007a; Xuān Jiàncōng 禤健聡 2017: 32-37; Qí Miào 齐妙 2019.

[6] For photos see Jīngménshì bówùguǎn 荊門市博物館 1998: 21-24. For transcriptions and discussions see Jīngménshì bówùguǎn 荊門市博物館 1998: 139-142; Zhái Xìnbīn 翟信斌 and Zhèng Xiàohuá 鄭孝華 2007d.

[7] For photos see Jīngménshì bówùguǎn 荊門市博物館 1998: 43-46. For transcriptions and discussions see Jīngménshì bówùguǎn 荊門市博物館 1998: 161-164; Zhái Xìnbīn 翟信斌 and Zhèng Xiàohuá 鄭孝華 2007d.

[8] For photos see Jīngménshì bówùguǎn 荊門市博物館 1998: 59-66. For transcriptions and discussions see Jīngménshì bówùguǎn 荊門市博物館 1998: 177-184; Zhái Xìnbīn 翟信斌 and Zhèng Xiàohuá 鄭孝華 2007d; Zhū Jiànjūn 朱健君 2009; Jī Lěi 姬磊 2020.

[9] For photos see Mǎ Chéngyuán 馬承源 2001: 11-42. For transcriptions and discussions see Mǎ Chéngyuán 馬承源 2001: 119-165; Fàn Zhīōu 範知歐 2005; Cháo Fúlín 晁福林 2013; Lǐ Guǒ 李果 2019.

[10] For pictures see Mǎ Chéngyuán 馬承源 2001: 69-118. For transcriptions and discussions see Mǎ Chéngyuán 馬承源 2001: 215-301.

[11] For photos of see Mǎ Chéngyuán 馬承源 2002: 91-148. For transcriptions and discussions see Mǎ Chéngyuán 馬承源 2002: 249-293; Wáng Yú 王瑜 2006; Cài Xiānjīn 蔡先金 2017: 104-105; Sūn Fēiyàn 孫飛燕 2014; Xuān Jiàncōng 禤健聡 2017: 115-121.

[12] For photos of see Mǎ Chéngyuán 馬承源 2002: 91-148. For transcriptions and discussions see Mǎ Chéngyuán 馬承源 2002: 249-293; Wáng Zhènfù 王振複 2005; Lǐ Líng 李零 2006.

[13] For more discussions see Xuān Jiàncōng 禤健聡 2017: 52-56.

[14] For photos of see Mǎ Chéngyuán 馬承源 2004: 89-158. For transcriptions and discussions see Mǎ Chéngyuán 馬承源 2004: 239-285; Gāo Yòurén 高佑仁 2008; Wáng Qīng 王青 2017.

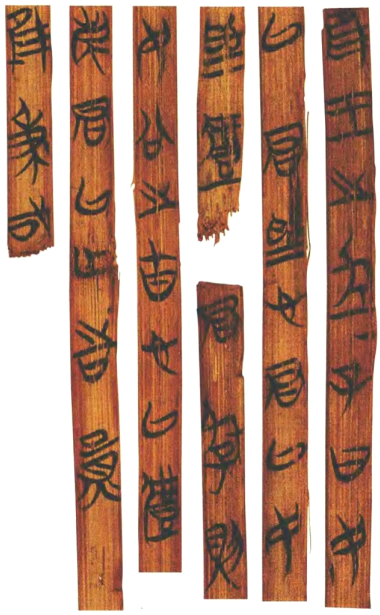
[15] For recent discussions see Dù Yǒng 杜勇 2018: 73-96; Liú Lì 劉麗 2018.

[16] For recent discussions see Xiāo Pān 肖攀 2013; Hóu Wénxué 侯文學 and Lǐ Mínglì 李明麗 2015; Lǐ Shǒukuí 李守奎 and Xiāo Pān 肖攀 2015; Lǐ Sōngrú 李松儒 2015; Liú Guāngshèng 劉光勝 2015; Mǎ Nán 馬楠 2015; Sūn Fēiyàn 孫飛燕 2015; Lǐ Shǒukuí 李守奎 2016.

命訓,[1] *Tāng zài Chìmén* 湯在啻門[2] and *Tāng chǔyú Tāngqiū* 湯處於湯丘.[3] For instance, the Confucian work *Zīyī* 緇衣[4] which is found in both the Guōdiàn 郭店 and Shàngbó 上博 manuscripts, describes how the king should manage the country and the people (**Fig. 5.3.1-21**):

08-2 08-1 07-2 07-1

Guōdiàn·*Zīyī* 07-08



Shàngbó·*Zīyī* 05

Fig. 5.3.1-21
The *Zīyī* 緇衣 of the Guōdiàn 郭店 (left)[5] and Shàngbó 上博 manuscript (above)[6]

[1] For recent discussions see Liú Guózhōng 劉國忠 2019: 1-28.
[2] For recent discussions see Cáo Fēng 曹峰 2019: 108-143; Chén Zhì 陳致 2019: 78-89; Constance Cook 2019: 183-193; Scott Cook 2019: 144-148; Gentz 2019: 183-193; Venture 2019: 55-77.
[3] For recent discussions see Shěn Jiànhuá 沈健華 2019a, 2019b; Chén Zhì 陳致 2019: 78-89; Venture 2019: 55-77.
[4] For photos of *Zīyī* 緇衣 of the Guōdiàn 郭店 manuscript see Jīngménshì bówùguǎn 荊門市博物館 1998: 17-20; for that of the Shàngbó 上博 manuscript see Mǎ Chéngyuán 馬承源 2001: 45-69. For transcriptions and discussions see Jīngménshì bówùguǎn 荊門市博物館 1998: 129-137; Mǎ Chéngyuán 馬承源 2001: 171-213; Shaughnessy 2006: 63-130, 2012: 58-105; Zhái Xìnbīn 翟信斌 and Zhèng Xiàohuá 鄭孝華 2007b; Chén Wěi 陳偉 2009: 162-174; Lǐ Ruì 李銳 2018: 33-40.
[5] Jīngménshì bówùguǎn 荊門市博物館 1998: 17.
[6] Mǎ Chéngyuán 馬承源 2001: 49.

> 子曰: 民以君為心, 君以民為體, 心好則體安之, 君好則民欲之。故心以體廢, 君以民亡。(Guōdiàn·*Zīyī* 07-08)
>
> *Zǐ yuē: mín yǐ jūn wéi xīn, jūn yǐ mín wéi tǐ, xīn hǎo zé tǐān zhī, jūn hǎo zé mín yù zhī. Gù xīn yǐ tǐ fèi, jūn yǐ mín wáng.*
>
> 子曰: 民以君為心, 君以民為體, [心好則體安之] 君好則民欲之。故心以體廢, 君以民亡。(Shàngbó·*Zīyī* 05)
>
> *Zǐ yuē: mín yǐ jūn wéi xīn, jūn yǐ mín wéi tǐ, [xīn hǎo zé tǐ ān zhī] jūn hǎo zé mín yù zhī. Gù xīn yǐ tǐ fèi, jūn yǐ mín wáng.*
>
> The Master said: "The people take the ruler as their heart and the ruler takes the people as his limbs. If the heart is good then the limbs find rest in it, and if the ruler is good then the people desire him. Therefore, the heart is laid waste by the limbs and the ruler is done away with by the people."

② Myths[1]

A good case in point is the creation myth in the silk manuscript found in the Zǐdànkù 子彈庫 grave of Chángshā 長沙 in Húběi province in 1942, dating to the middle or late Warring States period.[2] In this myth, the world began with chaos. The ancestor gods Fúxī 伏羲 and Nǚwā 女媧 successively created the heaven and the earth, the four seasons, the sun and the moon, day and night, and all other things.[3] Another example is the myth of the Great Flood (known as the *Dàyǔ zhìshuǐ* 大禹治水 or *Gǔnyǔ zhìshuǐ* 鯀禹治水 'the Great Flood of Gun-Yu') in the *Róngchéng shì* 容成氏 of the Shàngbó 上博 manuscript, which describes how Dàyǔ 大禹 managed the flood, and his other achievements after he came to power.[4]

③ Poem

Examples come mainly from the Shàngbó 上博 and Qīnghuá 清華 manuscripts. There are similar to the poems in the *Shījīng* 詩經,[5] and the *Jiāojiāo míngwū* 交交鳴烏 is a good case in point (**Fig. 5.3.1-22**):[1]

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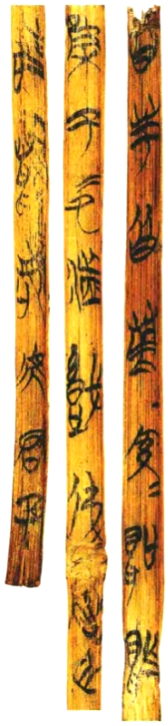
[1] For a brief history of studies of myths in the bamboo and silk manuscripts over the last 70 years see Tán Méi 譚梅 2020.

[2] For more discussions of the graphs on the silk manuscript see Zēng Xiàntōng 曾憲通 1993; Chén Jiālíng 陳嘉凌 2010; Xú Zàiguó 徐在國 2010; Zhèng Lǐxūn 鄭禮勳 2013.

[3] Lǐ Líng 李零 1985, 2013; Ráo Zōngyí 饒宗頤 and Zēng Xiàntōng 曾憲通 1985, 1999; Zhāng Yùxīn 張玉新 and Lǐ Lì 李立 2013; Zhāng Xiǎnchéng 張顯成 2014: 56-69; Cài Xiānjīn 蔡先金 2017: 48-87; Hé Línyí 何琳儀 2017: 22.

[4] Wáng Yú 王瑜 2006; Cài Xiānjīn 蔡先金 2017: 104-105; Sūn Fēiyàn 孫飛燕 2014; Xuān Jiàncōng 禤健聰 2017: 115-121.

[5] The *Shījīng* 詩經, *Classic of Poetry*, is the oldest existing collection of Chinese poetry, which is traditionally said to have been compiled by Confucius. It includes about 300 poems dating from the beginning of the Western Zhōu period down to the middle of the Spring and Autumn period, so it is also called the *Shī sānbǎi* 詩三百 *Three hundred poems*.



交交鳴鳥，集于中渚。
愷悌君子，若豹若虎。

Jiāojiāo míngwū, jí yú zhōngzhǔ.
Kǎitì jūnzǐ，ruòbào ruòhǔ.

The chirping waterfowls gathered on the islet in the water.
The attire of a gentleman is like a beautiful leopard and a tiger.

Fig. 5.3.1-22
The *Yìshī* 逸詩 02 of the Shàngbó 上博 manuscript (left)

④ Novel

The most frequently mentioned example is the *Chìhú zhī jí Tāng zhī wū* 赤鵠之集湯之屋 of Qīnghuá 清華 manuscript,[2] which tells the story of Tāng 湯 and Xiǎochén 小臣 (Minor Vassal).[3] A turtledove with red patterns perched on the roof of Tāng 湯. Tāng 湯 shot the turtledove and ordered Minor Vassal to cook soup. But when Tāng 湯 was out, his wife forced Minor Vassal to let her taste the soup first. After Tāng 湯 returned, he was very angry to find that the soup had already been tasted. Minor Vassal was very scared and fled to the Xià state. He was cursed by Tāng 湯 and became sick on the road and unable to speak. A group of crows was going to eat him, but a spirit crow stopped them and told Minor Vassal that Jié 桀,[4] the king of Xià, was sick. Minor Vassal then went to Jié 桀's residence and cured Jié 桀's illness according to what the spirit crow said.

[1] For photos of the *Jiāojiāo míngwū* 交交鳴鳥 see Mǎ Chéngyuán 馬承源 2004: 25-28. For more discussions see Mǎ Chéngyuán 馬承源 2002: 174-177; Cài Xiānjīn 蔡先金 2017: 232-234; Xuān Jiàncōng 禤健聡 2017: 162-166; Hú Níng 胡寧 2018: 3-14.

[2] For photos of *Chìhú zhī jí tāng zhī wū* 赤鵠之集湯之屋 see Lǐ Xuéqín 李學勤 2012: 617. For transcriptions and discussions see Huáng Dékuān 黃德寬 2013: 81-86; Wáng Kūn 王昆 2016: 54-69; Cài Xiānjīn 蔡先金 2017: 565-574; Dù Yǒng 杜勇 2018: 221-249.

[3] Tāng 湯, also called Chéng Tāng 成湯, Shāng Tāng 商湯, Wǔ Tāng 武湯, was the first king of the Shāng dynasty in Chinese history.

[4] Jié 桀, also called Xià Jié 夏桀, was the last ruler of the Xià dynasty of China.

Therefore, Chinese writing seems to first appear at the beginning of the Shāng period, and the earliest secure examples are oracle-bone inscriptions.[1] Then, in the Middle or Late Shāng period, another closely related form of writing, bronze inscriptions, appeared. During the Shāng and Western Zhōu periods, oracle-bone and bronze inscriptions were the two main forms of writing in China. In the Shāng period, oracle-bone inscriptions played a more important role, while in the Western Zhōu period, the number of bronze inscriptions was more abundant. Oracle-bone inscriptions are records of divination. Shāng kings inquired the opinions of their ancestors through divination to legitimize the kingship and administration. Bronze inscriptions mainly record the investiture ritual and award ceremonies to publicize the kings' virtuous policies and maintain their dominance. Therefore, the original purpose and function writing in China are a combination of divination, ritual and administration.[2]

In addition to oracle-bone and bronze inscriptions, 17 pieces of pottery fragments bearing painted characters (mostly isolated characters), which belong to the same writing system as the oracle-bone and bronze inscriptions, were unearthed at the Xiǎoshuāngqiáo 小雙橋 (ca. 1400 BC). According to the excavation report, these pottery fragments bearing characters were all excavated from the sacrificial pits of 小雙橋 Xiǎoshuāngqiáo.[3] It is very likely that these painted pottery fragments were used for ritual activities, and the characters on these fragments may have had a similar function as Shāng oracle-bone inscriptions.[4] So, in the Shāng and Western Zhōu periods, writing was heavily used in the context of divination and religious ceremonies.

From the Spring and Autumn period on, the purpose of writing became decidedly more secular. For example, practical inscriptions, such as seal and coin inscriptions, appeared in the Spring and Autumn period. Moreover, during the Western Zhōu period, inscriptions were normally placed on the interior surfaces of vessels, suggesting that they were not intended for casual perusal. But during the late Spring and Autumn and Warring States periods, inscriptions were increasingly placed on the exterior surface of bronze vessels, which appears to indicate that inscriptions were meant more for human than spiritual consumption. In addition, during the Warring States period, writing was also used for practical documents, such as judicial documents and records of funerary objects.

[1] For more details see discussions in **3.4** and **3.5**.
[2] For more details see discussions in **1.2.2**.
[3] Hénánshěng wénwù kǎogǔ yánjiūsuǒ 河南省文物考古研究所 2012: 709-711.
[4] For more details on the painted characters of Xiǎoshuāngqiáo 小雙橋 see the discussion in **3.4.2**.

Among the materials of the Warring States period, bamboo and wood slips are the most abundant, and among these bamboo and wood slips, inscriptions of literary works make up the majority. So, at the latest in the middle and late Warring States period, writing was widely used for literary writing. It is known that in order to strengthen and streamline the administration of the Qin Dynasty, the first Chinese emperor Qínshǐhuáng 秦始皇 destroyed numerous works in 221 BC. These bamboo and wood slips of the Warring States period survived because they were in grave.

However, it cannot be ruled out that oracle-bone and bronze inscriptions do not represent the full range of writing in the Shāng and Western Zhōu periods. It is likely that a much larger volume of writing in the Shāng and Western Zhōu periods may have recorded on materials other than oracle-bones and bronze vessels, such as perishable bamboo and wood slips.[1]

5.3.2 Early Mesoamerican writing

5.3.2.1 Zapotec writing

According to the discussion in Chapter 4, there is no compelling evidence for Olmec writing, so the first securely attested writing system in Mesoamerica is Zapotec writing, which first appeared at the Valley of Oaxaca site of Monte Albán at the beginning of the Late Preclassic (ca. 500-200 BC, most probably the latter half of Period I). The examples of Zapotec hieroglyphic writing in Period I are mainly carved stones from Building L at Monte Albán. These carved stones depict sacrificed enemies with short hieroglyphic texts alongside, usually two to six glyphs, probably specifying who has been captured, slain or sacrificed. For example, on Monument D-6 (101*173 cm)[2] and Monument D-8 (90*134 cm) (**Fig. 5.3.2-1**),[3] the first graph is the name of the victim depicted, and the second graph is a rattle sign, meaning “killed, died”[4] or “object of sacrifice”.[5]

[1] Li Feng 2018; Škrabal 2019. For more details see discussions in **3.5**.
[2] Caso: Stone 38-6; Zehnder: L-8; Scott: D-6; García Moll et al.: 256. For more details see Marcus 2020: 86, 89, figure 6.32.
[3] Caso: Stone 39-8; Zehnder: L-6; Scott: D-8; García Moll et al.: 258. For more details see Marcus 2020: 86, 90, figure 6.34.
[4] Whittaker 1980: 42, 1992: 10.
[5] Marcus 2020: 85. For more details on the rattle sign see discussion in **4.2**.

Fig. 5.3.2-1
Text on Monument D-6 (left) [1] and Monument D-8 (right)[2] of Building L, Monte Albán

There are also longer texts which specified the sacrifice, and Monument D-55 (90*140*57 cm) (**Fig. 5.3.2-2**) is the most prominent example.[3] Whittaker argues that the graph 4 on the monument is a sacrifice glyph.[4] The graph is incised on the chest of the victim, which implies a heart sacrifice. Glyph 3 is a bag sign, meaning "captured".[5] So the whole text can be read as:

> (1) Were- (2) Jaguar (3) was captured (and) (4) sacrificed (5) to (6) the Wind (or Cocijo?). (7) Leg vessels (8) were set down as offerings.

Marcus provides an alternative reading. In her opinion, carving hieroglyphs on a victim's body may be applied to take credit for taking a prisoner, like writing marks on one's possession.[6] Glyph 3 is a bag sign, meaning "death" or "deceased person".[7] So the column of glyphs in front of the captive's face may represent his nickname, and the year sign on his body may be the year of his capture and death, as suggested by the bag glyph.[8]

[1] Caso 1947: figure 3.
[2] Caso 1947: figure 4.
[3] Caso: Stone 55; Zehnder: GL-3; Scott: D-55; García Moll et al.: 306. For more details see Marcus 2020: 91, 94, figure 6.38.
[4] Whittaker 1980: 45, 1992: 10.
[5] For more details of the bag sign see discussion in **4.2**.
[6] Marcus 2020: 79-82.
[7] Marcus 2020: 50.
[8] Marcus 2020: 85-86.

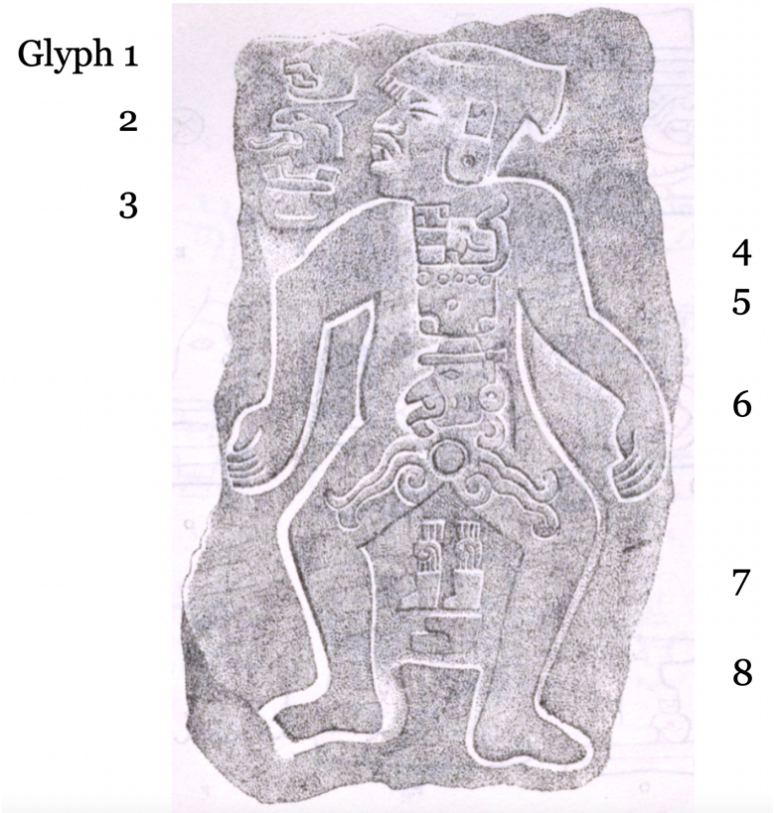


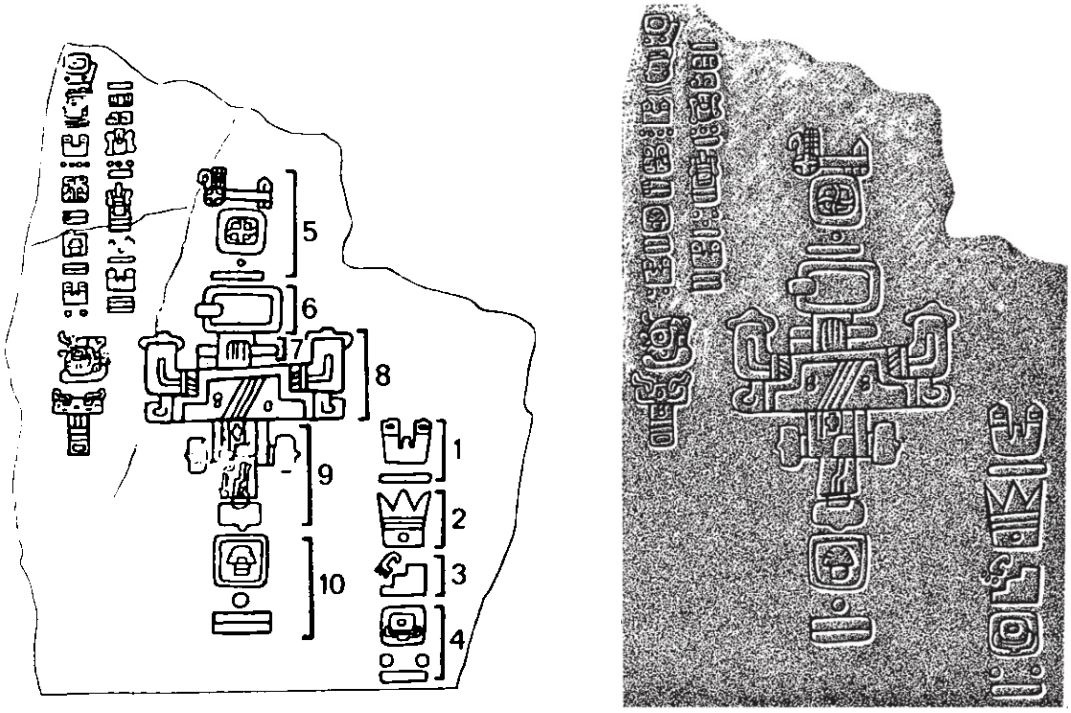
Fig. 5.3.2-2
Text on Monument D-55 of Monte Albán[1]

The representative hieroglyphic texts of Period II (ca. 200 BC-AD 250, the end of the Late Preclassic) are the so-called "conquest slabs" on Building J of Monte Albán, which commemorate the places that were conquered by Monte Albán, and the names of these places are represented by varying elements infixed to the hill glyph.[2] Lápida 14 (190*158 cm) (**Fig. 5.3.2-3**) is one of the longest texts on Building J,[3] and a possible reading is as follows:[4]

> (1) Trecena 5, (2) named Reed, (3) descended/ elapsed to (4) Rain 4. (5) In the year Rabbit 6 (6) at the town of Yanhuitlan (8) Monte Albán (7) struck down (9) District H (10) on the day House 11 (7 days after Rain 4).

Alternatively, Marcus argues that in the central column, a year sign and year bearer (6E) are above the compound place sign, and below is a day sign with the number 11, which date Monte Albán's takeover of the place.

[1] Caso 1947: figure 16.
[2] Caso 1928: 82, 1947: 21-28; Marcus 1980: 51-52, 2020: 124-127; Whittaker 1980: 47, 1992: 12-15. For more details of the hill sign and place names see discussions in **4.2**.
[3] Caso: Lápida 14; Zehnder: J-4; García Moll et al.: Stone 83. For more details see Marcus 2020: 159-164, figure 8.51.
[4] Whittaker 1992: 13.



Whittaker 1992[1] Marcus 2020[2]

Fig. 5.3.2-3 Lápida 14 of Building J, Monte Albán

During Period IIIA (ca. AD 250-450), the writing had been mainly used in calendrical sequences and certain names of people and places, while other functions had been replaced again by iconography.[3] Above the offering boxes, the South Platform of Monte Albán displayed carved stones. Scholars have differing opinions on the reading of these carved stones. For example, Caso argued that six of these stelae (Stelae 2, 3, 5, 6, 7 and 8) depict prisoners with hands tied to their back to commemorate the victories of Monte Albán.[4] Von Winning claimed that the scenes carved on the edges of Stela 7 and the so-called Estela Lisa (**Fig. 5.3.2-4**) present priests of Zapotec affiliation paying homage to a Zapotec ruler or god.[5] Whittaker believed that all the glyphs with coefficients have a chronological value, and with regard to the artistic conventions, stones such as Stelae 1, 7, 8, show a style attributed to the intensification of foreign contact with Teotihuacan.[6]

[1] Whittaker 1992: 13, figure. 2-7b.
[2] Marcus 2020: 163, figure 8.51.
[3] Whittaker 1992: 6.
[4] Caso 1928: 89.
[5] Von Winning 1983, 1984.
[6] Whittaker 1983: 124.

Fig. 5.3.2-4 Estela Lisa, Monte Albán[1]

Two recent studies are by Urcid and Marcus. Urcid claims that the carved stones of South Platform form part of two narrative compositions: (1) Program A, carved on the large surfaces of Stelae 1, 2, 3, 5, 6, 7, 8; and (2) Program B: carved on the edges of Stelae 1, 7, 8 and Estela Lisa. Program A illustrates ritual celebrations with human sacrifice on prescribed ceremonies, such as period endings. Program B records subordinate individuals paying their homage to two rulers.[2]

Marcus argues that there are two main themes: (1) the relationship between Monte Albán and Teotihuacan; (2) the royal inauguration.[3] Marcus claims that some of these stones of the South Platform depict visitors from Teotihuacan. Their names are allegedly carved on the edges of Stelae 1, 7, 8 and Estela Lisa. Each visitor wears the "Tassel Headdress",[4] an item apparently associated with Teotihuacan ambassadors, and Teotihuacan-style sandals. These visitors came to Monte Albán to participate in a ritual, involving the burning of incense (depicted on Stela 8), at the South Platform. When the ritual was finished, it was then carved on these stones to record the event permanently.

Six slabs (Stelae 2, 3, 5, 6, 7, and 8) depict captives with arms tied, standing on hill signs that may indicate their place of origin. These captives were probably destined to be sacrificed during the inaugural rites of the rulers. Elegantly dressed individuals wielding lances are carved on the other two stones (Stelae 1 and 4) may be victorious Zapotec lords.

During Period IIIB (ca. AD 450-700) to Period IV (ca. AD 700-950), Monte Albán was on the decline, and by AD 900, the Valley of Oaxaca was no longer dominated by Monte Albán. The carved monuments appear to be historical in nature. Many scholars argue that the main interest of the newly independent

[1] Marcus 2020: 202, figure 9.8.
[2] Urcid 2001: 362-408.
[3] Marcus 1980, 1983h, 1992: 325-329, 400-409, 2020: 200-208.
[4] Millon 1973: 305.

noble families was to record their genealogies, and such a carved monument is a so-called "genealogical register".[1] These stones are small in size and can only be read close-up. Unlike the carved stones of previous periods that were set up in public buildings, these small stones appear to have been placed in the residences of the Zapotec elite or their tombs, recording the rulers and nobles, the parents of the current ruler as well as dynastic founders, or even an important apical ancestor, and were used to establish legitimacy and assert dynastic continuity.[2] These carved stones depict a wide variety of rites linked to legitimization, sanctification, and ancestor veneration.[3] The Noriega Monument (100*61*13 cm) (**Fig. 5.3.2-5**), found at Noriega, a site in the central valleys of Oaxaca not far from Monte Albán in 1944, is a good case in point. The text on the monument is historical in nature,[4] providing information on a royal lineage.[5]

Fig. 5.3.2-5
The Noriega Monument, Valley of Oaxaca[6]

[1] Marcus 1980: 61, 2020: 223.
[2] Marcus 1980: 61-64, 2020: 224-225.
[3] Caso 1965a, 1965b; Marcus 1980, 1983d, 1989b, 2020; Miller 1995; Masson and Orr 1998a.
[4] Caso 1965a: 942; Paddock 1966a: 222.
[5] Rabin 1970:12-13; Easby and Scott 1970: 202-203; Marcus 1980: 63-64, 1983c: Figure 7.5, 1992, 2020: 303-305; Urcid 1999.
[6] Urcid 1999: 239, figure 5. For more illustrations see Caso 1965a: 942, Marcus 1980: 64, 2020: 304, figure 14.28, Urcid 1999: 237.

The tombstone is divided into three registers or panels, and is thought to be read from bottom to top.[1] Easby and Scott believe that the text records important events in the life of the person buried in the tomb. The kinship of figures depicted on the monument appears to extend through three generations. The two figures in the lower register would be the founders of the lineage.[2]

On the basis of Easby and Scott's study, Urcid and Marcus further propose that the monument depicts the important stages of the life or rituals of an heir to the throne, but their interpretations differ in detail.[3] In their opinion, the lower register indicates the divine ancestry and place of origin of the lineage. But Marcus argues that two figures in the lower register are a marital pair, the man on the left side named 10 Water and the woman on the right side named 9 Water, who are thought to be the grandparents of the heir. Urcid claims that these two figures are the parents of the royal child, because the man on the left side of the lower register named 10 Water and the child in the upper register wears similar clothing: the former wears a jaguar head as a helmet and the latter wears a jaguar skin.

The middle register depicts two events. In the event on the left side, the royal child is an infant and it might be a naming ceremony, that is, the child is conferred its calendrical name after a diviner had determined it by consulting the sacred count of days;[4] or it might serve the purpose of designating the royal child as heir.[5] In the event on the right side, the royal child becomes a toddler according to Marcus.[6]

In the upper register, the event deals with the investiture of the royal child, who becomes a youngman at that time, as ruler since the man named 1 Serpent ties the headband for the royal child. And among the Zapotec and the Maya, the investiture of an heir to power includes an important ritual of headband-tying. The man has a speech scroll in front of his mouth associated with the day sign Owl, and the woman on the far left has a speech scroll associated with the numeral 6. It seems that the man and woman are jointly supplying the youngman with his name—6 Owl.[7] And for both the Zapotec and the Maya, their rulers sometimes had their childhood names replaced by a new name when they ascended to the throne.[8]

[1] Easby and Scott 1970; Marcus 1980: 63-64, 1983c: Figure 7.5, 1992, 2020: 303-305; Urcid 1999.
[2] Easby and Scott 1970: 202.
[3] Urcid 1999; Marcus 1980: 63-64, 1983c: Figure 7.5, 1992, 2020: 303-305.
[4] Urcid 1999: 225-226.
[5] Urcid 1999: 233.
[6] Marcus 1980: 63-64, 2020: 305.
[7] Marcus 1980: 63-64, 2020: 305; Urcid 1999: 228.
[8] Marcus 1980: 63-64, 2020: 305.

5.3.2.2 Epi-Olmec writing

Epi-Olmec texts known to scholarship are about thirteen in number,[1] covering a time-span from the Late Preclassic (ca. 300 BC) to the Early Classic (ca. 500 AD).[2] Some texts are short in sequence or highly eroded, mainly consisting of calendrical information, such as Chiapa de Corzo Stela 2,[3] and Cerro de las Mesas Stela 5.[4] In view of this, discussion in this section mainly focuses on the texts on the Chiapa de Corzo Sherd, La Mojarra Stela 1, the Tuxtla Statuette, Cerro de las Mesas Stela 8, the O'Boyle mask and the Teotihuacan-style mask. It should be noted that scholars have not yet reached a consensus on the interpretation of these texts. The current interpretations mostly come from Justeson and Kaufman,[5] but as I have mentioned in **4.3**, Kaufman and Justeson's decipherment has been disputed by other scholars, such as Houston and Coe.[6] They argue that Justeson and Kaufman's decipherment has not met the five criteria of a successful decipherment,[7] and their decipherment is only based on quite limited texts without bilingual examples, from a poorly understood cultural context, so it cannot be ruled out that epi-Olmec texts may have encoded a language other than Mixe-Zoquean.[8] Therefore, although the discussion in this section is mainly based on Kaufman and Justeson's decipherment, it remains highly controversial and is yet to be fully debated among specialists.

The earliest known epi-Olmec text is the Chiapa de Corzo Sherd (**Fig. 5.3.2-6**), a potsherd with 11 glyphs[9] or 12 glyphs,[10] dating to ca. 300 BC.[11] Kaufman and Justeson argue that the two-column text is read downwards, from left to right, recording that the cloth has been dyed (the left column) and cut (the right column).[12] According to Kaufman and Justeson's decipherment, it is very likely that the text on the potsherd is a part of a ritual recording, because in three other complete or nearly complete epi-Olmec texts, that is, La Mojarra Stela 1, the Tuxtla Statuette and the Teotihuacan-style mask, ritual clothes or outfits are prepared in advance of rituals for later use, such as, to staunch the flow of blood in La Mojarra Stela 1 (see details below). Moreover,

[1] The detailed information of these epi-Olmec texts is shown in **Table 4.3-1**.
[2] Kaufman and Justeson 2001: 2.2, 2004: 1074, 2008: 196; Houston 2004: 296; Justeson 2012; Davletshin 2014: 76-77; Strauss 2018: 132-231.
[3] Lee 1969: 105-106; Macri 2017d: 3; Strauss 2018: 137.
[4] Justeson and Kaufman 2008, 2018: 80; Strauss 2018: 186.
[5] Justeson and Kaufman 1993, 1997, 2008, 2018; Kaufman and Justeson 2001, 2004: 1071-1111, 2008: 193-230.
[6] Houston and Coe 2003.
[7] For details see discussions in **4.3**.
[8] Houston and Coe 2003: 151-152.
[9] Macri 2017d: 2, with edges of perhaps two or three more signs.
[10] Kaufman and Justeson 2004: 1074, 2008: 196; Strauss 2018: 134-135.
[11] Kaufman and Justeson 2001: 2.2; 2004: 1074, 2008: 196; Macri 2017d: 2, Strauss 2018: 134.
[12] Kaufman and Justeson 2001: 2.86.

Chiapa de Corzo in Chiapas is a major ceremonial center,[1] so the text probably recounts a ritual event.

Fig. 5.3.2-6 The Chiapa de Corzo Sherd (left: Macri 2017d,[2] right: Strauss 2018[3])

The longest epi-Olmec text is La Mojarra Stela 1 (**Fig. 4.3-2**), dating to ca. 157 AD.[4] It is a basal band, measuring 234 cm high on the left side, 210 cm high on the right side, 110 cm wide at the base and 142 cm wide at the top.[5] The text consists of 542 glyphs[6] or 544 glyphs,[7] incised in twenty-two vertical columns. The front text is thought be divided into two parts: eleven short columns (A-L) on the left side, and nine long columns (M-U) on the right side. And the left half should be read from right to left, that is, from column A to L; the right half should be read from left to right, that is, from column M to U.[8] Below the short columns, there is a relief-carved standing figure with four signs incised on the body (V, W, X, and Y). The standing figure is depicted in elaborate costume with head in profile and chest facing forward, but the lower half of the body is obliterated. An object with a long rectangular handle is held in the figure's right hand. The left arm bends at an angle and extends in front of the body. A large foliated and beaded object is held in the left hand.

[1] Bachand and Lowe 2011: 78; Macri 2017d: 1.
[2] Macri 2017d: 2, figure 1.
[3] Strauss 2018: 355, figure 6c.
[4] Justeson and Kaufman 1993: 1703, 1997: 207, 2018: 126; Kaufman and Justeson 2001: 2.3, 2004: 1074, 2008: 196; Strauss 2018: 160.
[5] Winfield Capitaine 1988: 5.
[6] Strauss 2018: 160.
[7] Kaufman and Justeson 2001: 2.34; Kaufman and Justeson 2004: 1074, 2008: 196.
[8] Capitaine 1988: 16-19; Justeson and Kaufman 1993, 1997, 2018: 125-128; Kaufman and Justeson 2001: 2.34-2.74; Strauss 2018: 161.

According to the studies of Justeson and Kaufman,[1] the text mainly focuses on the rise of a new ruler to power and the ritual activities related to his inauguration and his reign during the first Venus cycle: on May 1, 143 AD (8.5.3.3.4), June 23, 156 AD (8.5.16.9.7), September 29, 157 AD (8.5.17.14.9), October 11, 157 AD (8.5.17.15.2). The text is thought to record a considerable number of details concerning the progression of rituals, largely about the sacrifice of blood, e.g. the ruler's auto-sacrifice of bloodletting performed in the late afternoon or evening of September 20, 157 AD (glyphs N9 to Q47).

Another complete epi-Olmec text is the Tuxtla Statuette (**Fig. 5.3.2-7**) made of greenstone with 87 glyphs, dating to ca. 162 AD.[2] The Tuxtla Statuette is about 15.4 cm in height and 9.3 cm in width (at its widest point), perhaps depicting a figure with the zoomorphic characteristics of a billed avian creature (probably a duck or heron),[3] and one-fourth of the bulk is devoted to the figure's head and face and the other three-fourths to its body. Justeson and Kaufman argue that the text is read downwards, concentrating on the preparations of a ritual performed on February 22, 162 AD (8.6.2.4.17) (glyphs A1 to A7), followed by the main ritual process, such as the provision of the ritual cloth (glyphs F1 to G8). According to their decipherment, the last part of the text (glyphs G9 to I5) records that the person performing the ritual passed out and shape-shifted into a powerful buzzard animal guise,[4] which seems to be consistent with the shape of the Tuxtla Statuette.

The Teotihuacan-style stone mask (**Fig. 5.3.2-8**) without provenance was published in 2003.[5] Masks of this sort date to the Early to Middle Classic period at Teotihuacan, so this stone mask is thought to date to the Early Classic period (ca. 386-523 AD).[6] The outer surface of the mask is highly polished, which is consistent with worked surfaces in Epi-Olmec art.[7] The text consists of six vertical columns, ca.101 glyphs[8] or 104 glyphs.[9] The overall text is thought to be read downwards, but in colums A-B and E-F, the inscription should be read from left to right, and in columns C-D, it should be read from right to left.[10]

According to the studies of Justeson and Kaufman, the text should be divided into three segments, each of which has the same basic structure, focusing on

[1] Justeson and Kaufman 1993, 1997, 2018: 125-128; Kaufman and Justeson 2001: 2.34-2.74.
[2] Méluzin 1987, 1992: 283; Justeson and Kaufman 1993: 1703, 2018: 79; Kaufman and Justeson 2001: 2.2, 2004: 1704, 2008: 196; Strauss 2018: 174.
[3] For discussion of the billed avian creature see Strauss 2018: 167-173.
[4] Kaufman and Justeson 2001: 2.75-2.81; Justeson and Kaufman 2018: 131-132.
[5] Houston and Coe 2003; Strauss 2018: 199; Justeson and Kaufman 2018: 85.
[6] Justeson 2012: 833; Justeson and Kaufman 2018: 83. Houston and Coe (2003: 153-157) prefer a date of ca. 300-600 AD.
[7] Strauss 2018: 199.
[8] Houston and Coe 2003: 157; Strauss 2018: 201.
[9] Kaufman and Justeson 2004: 1704, 2008: 196.
[10] Justeson and Kaufman 2018: 86-87; Strauss 2018: 322.

the preparations and performance of ritual practices. The three ritual events are thought to take place over three successive Venus years, that is, calendrical cycles of 584 days, and each segment corresponds to one Venus year.[1]

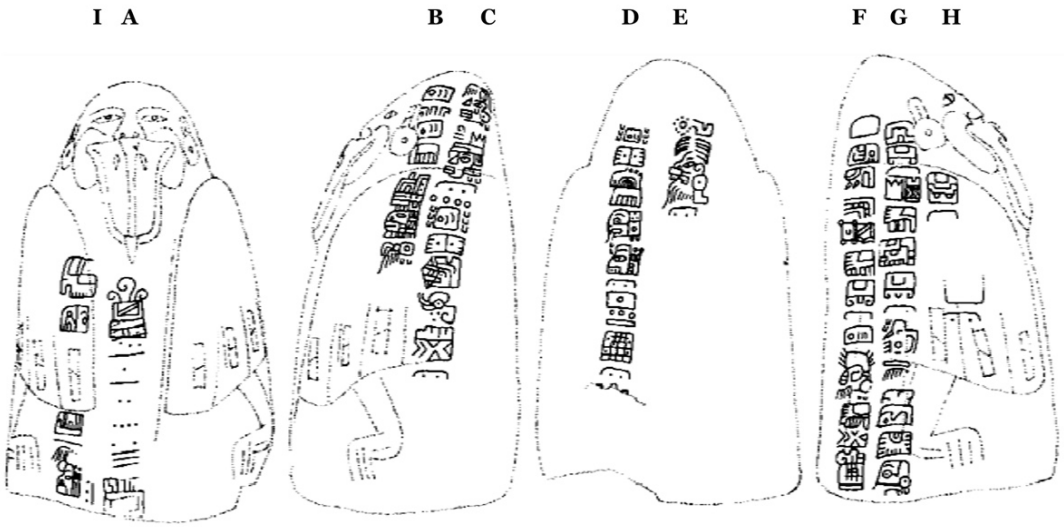


Fig. 5.3.2-7
The Tuxtla Statuette (left) and its texts (below)[2]

In addition, the O'Boyle Mask (11.7 cm * 8.9 cm* 6.1 cm) is made of black ceramic without provenance is also thought to deal with ritual activities,[3] that

[1] Justeson and Kaufman 2018: 98-107.
[2] Photo from Strauss 2018: 426: figure 102b; drawing from Méluzin 1992: 284, figure 1.
[3] Capitaine 1988; Méluzin 1995; Strauss 2018: 195-199.

is, the divination for bean harvest.[1] Therefore, if and Kaufman's decipherment is correct, it seems that the epi-Olmec writing was used heavily in the ritual context from the late Preclassic period to the Early Classic period. And no significant differences can be found between the ritual events performed in late Preclassic and the Early Classic period. For example, the preparations of ritual performance often include the measured ritual space, folded or dyed clothing. Also playing the drum or bloodletting is usually a part of the ritual progression.

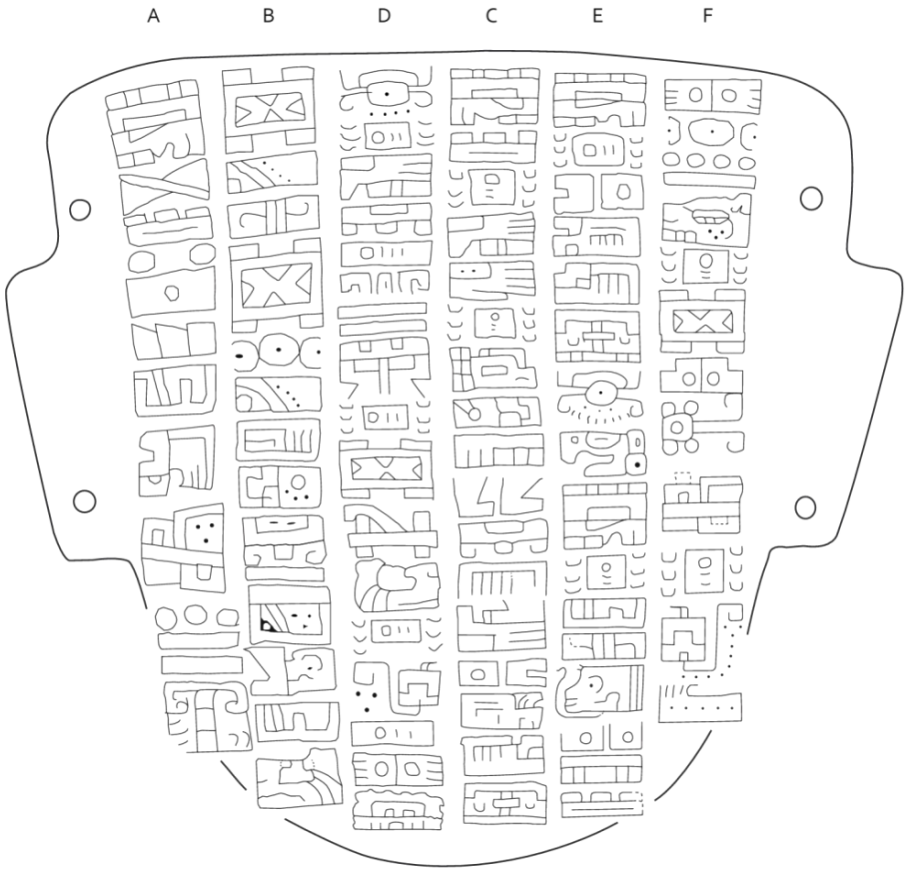


Fig. 5.3.2-8 The text on the back of the Teotihuacan-style stone mask[2]

5.3.2.3 Maya writing

The earliest archaeologically dated examples of Maya writing was discovered at San Bartolo, Guatemala, dating to ca. 300-200 BC.[3] There are 11 fragments painted or incised with glyphic images.[4] Most of the glyphs on these

[1] Kaufman and Justeson 2001: 2.83-2.85.
[2] Justeson and Kaufman 2018: 80, figure 4; see also Macri 2016: 2, figure 1 and Strauss 2018: 441, figure 118.
[3] Saturno et al. 2006: 1281; Stuart et al. 2022.
[4] For more details see discussions in **4.4**.

fragments are at present undecipherable. But the glyph pA7  on fragment #6366 can be probably recognized as an early form of the sign *ajaw*  , meaning "ruler", "king", "lord", or "noble" in Maya texts, which forms part of a longer title that refers to certain historical or mythical figures.[1] Glyph pA2  might represent a hand holding a brush or a sharp bloodletter.[2] Scholars argue that glyphs on the San Bartolo stone block vaguely resemble the epi-Olmec script in form.[3] Justeson claims that glyph pA3  may be a variant of the epi-Olmec syllabogram *si*  .[4]

However, all the above are only speculative identifications, and the content of the glyph block ramains unclear. The murals found on the four inner walls of Pinturas Sub-1 of San Bartolo (the glyph block was found underneath this room) date to ca. 200-100 BC.[5] On the northwest corner of the room, the mural depicts a figure, probably a lord, sitting on a painted, wooden scaffold and a standing figure climbing a ladder to offer the seated figure a headdress (**Fig. 5.3.2-9**). Some scholars believe that the glyphs between these two figures may refer to this act, a calendrical ritual after royal accessions.[6] The last glyph of the text between the figures might be the *ajaw* glyph.[7] Based on all these points, the glyph block of San Bartolo probably records a similar topic.

At the beginning of the Classic Period, short hieroglyphic texts can be found on small portable objects. These early examples usually consist of portraits and the dates as well as a few events such as bloodletting ceremonies and the ruler's accession to office.[8] As mentioned in Chapter 4, Maya hieroglyphic texts have been found in various mediums, the most common of which are public monuments, such as stelae, lintels and altars, ceramic vessels or bark-paper books (that is, codices). The typical texts on public monuments of the Classic Period primarily consist of the date of dedication, a series of historical events and royal activities, and the name and title of the protagonist.[9] The text on Piedras Negras Panel 12 (**Fig. 5.3.2-10**) is a good case in point. Piedras Negras is the largest site along the Usumacinta River,

[1] Saturno et al. 2006: 1282; Houston 2006: 1249; Palka 2010: 227; Grube 2012: 845; Justeson 2012: 835; Coe and Houston 2015: 89.
[2] Saturno et al. 2006: 1282; Houston 2006: 1249.
[3] Saturno et al. 2006: 1282; Coe and Houston 2015: 89; Justeson 2012: 835.
[4] Justeson 2012: 835.
[5] Urquizú and Hurst 2002: 327, 2011: 9; Saturno et al. 2004: 1; 2005, 2006: 1281; Taube et al. 2010; Coe and Houston 2015: 87.
[6] Saturno et al. 2004: 9; Houston 2006: 1249; Coe and Houston 2015: 89.
[7] Saturno et al. 2004: 9.
[8] Foster 2002: 277; 2016: 264-265.
[9] Coe and Stone 2005; Foster 2002: 286, 2016: 274; Johnson 2013; Kettunen and Helmke 2014: 30.

about 40 kilometers away from Yaxchilan. In ancient times, the name of the kingdom was *Yokib*, probably meaning "entrance".[1] Piedras Negras Panel 12 was found fractured and reused in the ruins in 1931-1932. It was commissioned by a son to honor his deceased father.

Fig. 5.3.2-9
Mural painting of the west wall at Pinturas Sub-1[2]

At the beginning of the Classic Period, short hieroglyphic texts can be found on small portable objects. These early examples usually consist of portraits and the dates as well as a few events such as bloodletting ceremonies and the ruler's accession to office.[3] As mentioned in Chapter 4, Maya hieroglyphic texts have been found in various mediums, the most common of which are public monuments, such as stelae, lintels and altars, ceramic vessels or bark-paper books (that is, codices). The typical texts on public monuments of the Classic Period primarily consist of the date of dedication, a series of historical events and royal activities, and the name and title of the protagonist.[4] The text on Piedras Negras Panel 12 (**Fig. 5.3.2-10**) is a good case in point. Piedras Negras is the largest site along the Usumacinta River, about 40 kilometers away from Yaxchilan. In ancient times, the name of the kingdom was *Yokib*, probably meaning "entrance".[5] Piedras Negras Panel 12 was found fractured and reused in the ruins in 1931-1932. It was commissioned by a son to honor his deceased father.

[1] Martin and Grube 2008: 139.
[2] Houston 2006: 1249; see also Taube et al. 2010; Hurst 2004: 5, figure 5.
[3] Foster 2002: 277; 2016: 264-265.
[4] Coe and Stone 2005; Foster 2002: 286, 2016: 274; Johnson 2013; Kettunen and Helmke 2014: 30.
[5] Martin and Grube 2008: 139.

The figural scene on Panel 12, framed by columns of incised glyphs, depicts a standing ruler on the right side. Beliaev et al. point out that the ruler wears a Teotihuacan-style headdress (*kohaw*).[1] Behind the standing ruler is a half-kneeling captive, identified by a caption, whose hands are tied behind his back. On the left side, three more kneeling captives, each identified by a caption, face the ruler, with their hands tied in front of them.

Scholars argue that the first captive facing the standing ruler is the ruler of Yaxchilan, known as "Knot-eye Jaguar"[2] or "Knot-Eyed Jaguar",[3] the ninth king of Yaxchilan.[4] According to Yaxchilan Stela 27, he was in power at the period ending 9.4.0.0.0, 13 Ajaw 18 Yax (October 16, 514 AD), and continued to rule for about one more decade, until the accession of K'inich Tatbu Skull II (also known as Mahk'ina Tah Skull II) on 9.4.11.8.16, 2 Kib 19 Pax (February 11, 526 AD),[5] as a vassal of Piedras Negras.[6] The second captive appears to be from the kingdom of *Wabe*,[7] today known as Santa Elena.[8] The captive on the far left is thought to be the ruler of Tonina or Lakamtuun,[9] a Classic kingdom or political region located on the banks of the modern Río Lacantun.[10] The captive behind the standing ruler is identified as Lord of Mamis, and Mamis was a city located near Tonina, which was constantly attacked by the kings of Tonina in the 7th century.[11] Pitts believes that the binding of three captured lords indicates their subservience to the ruler of Piedras Negras, because at least one of these lords continues to rule after the monument was carved (that is, Knot-eye Jaguar I),[12] while the figure behind the standing ruler seems to be a real captive from a military battle. The text on Piedras Negras 12 will be discussed in detail in the following section, which primarily based on Pitts (2011).[13]

[1] Beliaev et al. 2016: 144.
[2] Stuart 2007; Martin and Grube 2008: 120-121, 141.
[3] Pitts 2011: 35; Beliaev et al. 2016: 147.
[4] For more discussions of Knot-eye Jaguar see Martin and Grube 2008: 120-121.
[5] For more discussions of K'inich Tatbu Skull II see Martin and Grube 2008: 121.
[6] Stuart 2007; Martin and Grube 2008: 120-121.
[7] Beliaev et al. 2016: 147.
[8] Stuart 2007; Pitts 2011: 35.
[9] Beliaev et al. 2016: 147.
[10] Stuart 2007; Pitts 2011:35.
[11] Beliaev et al. 2016: 147.
[12] Pitts 2011: 33.
[13] Discussion of the text on Piedras Negras 12 is primarily based on Pitts (2011: 33-41), other alternative readings, such as Martin and Grube (2008: 141), Josserand and Hopkins (2011), Kettunen and Helmke (2014) and Beliaev et al. (2016: 144-147) are also taken into consideration.

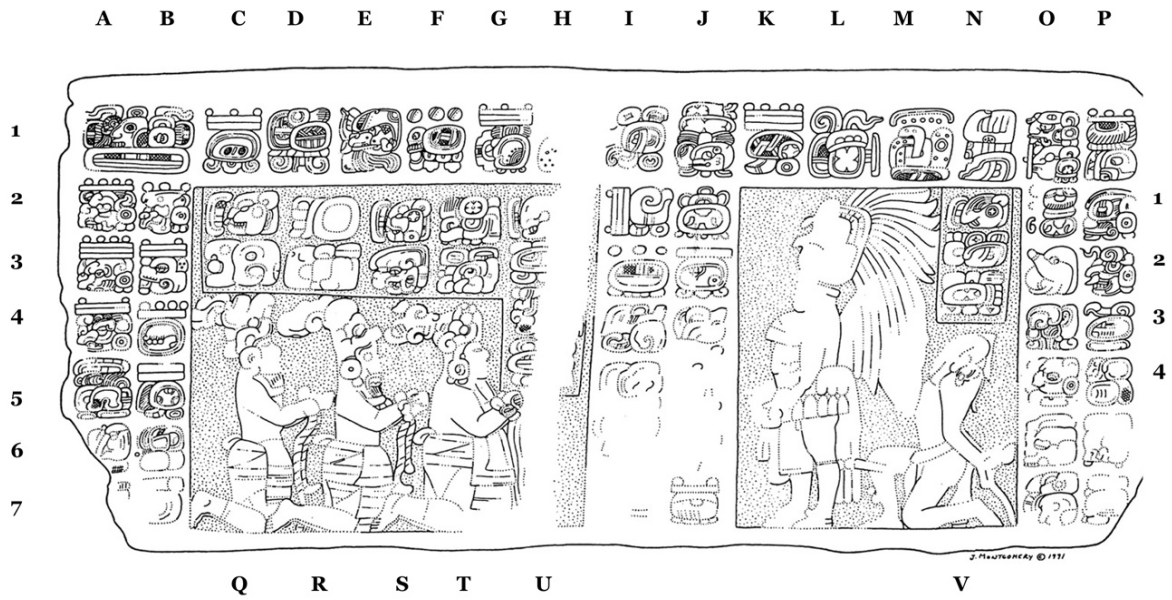


Fig. 5.3.2-10 Piedras Negras Panel 12 and its text[1]

[1] Photo from Pitts 2011: 39; drawing from:
http://research.famsi.org/montgomery_list.php?rowstart=165&search=Piedras%20Negras&num_pages=12&title=Montgomery%20Drawing%20Collection&tab=montgomery
For photos of Piedras Negras Panel 12 see Martin and Grube 2008: 141; For an illustration see also Beliaev et al. 2016: 144. For a 3D model of the panel see:
https://sketchfab.com/3d-models/panel-12-piedras-negras-dbd7ad2b645948f4b0829d28c79b3150.

Glyph	Transliteration	Transcription	Translation
A1-B1	**tzi-ka-HAB-(SEK)**[1]	*(ISIG)*	(ISIG)
A2	**9-PIK**	*bolon*[2] *pik*[3]	9 baktuns[4]
B2	**3-WINIKHAB**[5]	*ux*[6] *winikhaab*	3 k'atuns
A3	**19-HAB**	*bolonlajun*[7] *haab*	19 tuns
B3	**12-WINIK**	*lajcha'*[8] *winik*	12 winals
A4	**12-K'IN**	*lajcha' k'in*	12 days
B4	**9-EB**[9]	*bolon 'eb*[10]	9 Eb[11]
A5	**(Glyph G8 + F)**[12]	*(Glyph G8 + F)*	(Glyph G8 + F)
B5	**10- KASEW**[13]	*lajun*[14] *kasew*[15]	10 Sek
A6[16]	**JOY?-AJ?-AJAW?**	*joyaj ajaw*	(Accession?)
B6[17]	**?**	*?*	(the name of Ruler C?)
A7	**?**	*?*	(titles?)
B7[18]	**?**	*?*	(titles?)
C1	**13-AJAW**	*uxlajun*[19] *ajaw*	13 Ajaw[20]
D1	**i-PAT-ji-ya**	*i patjiiy*	was formed/ dedicated

[1] **SEK**, *Sek*, the 5th Classic Maya month (the Haab).

[2] Alternative transcription: *b'alun* (Mathews and Bíró 2006); *b'olon* (Josserand and Hopkins 2011: 36); *balun* (Kettunen and Helmke 2014: 48); *bolo?n* (Beliaev et al. 2016: 145).

[3] Alternative transcription: *pih* (Montgomery and Helmke 2007; Beliaev et al. 2016: 145).

[4] Alternative translation: b'aktun (Mathews and Bíró 2006); b'ak'tun (Josserand and Hopkins 2011: 38); bak'tun (Kettunen and Helmke 2014: 55).

[5] Alternative transliteration: **WINAAKHAAB** (Kettunen and Helmke 2014: 55; Beliaev et al. 2016: 144).

[6] Alternative transcription: *ox* (Montgomery and Helmke 2007); '*ux* (Josserand and Hopkins 2011: 36); *ux/ox* (Kettunen and Helmke 2014: 48); *huux* (Beliaev et al. 2016: 145).

[7] Alternative transcription: *b'olonlajun* (Josserand and Hopkins 2011: 36); *balunlajun* (Kettunen and Helmke 2014: 48); *bolo?nlaju?n* (Beliaev et al. 2016: 145).

[8] Alternative transcription: *lajchan* (Mathews and Bíró 2006; Josserand and Hopkins 2011: 36); *lahcha'* (Montgomery and Helmke 2007); *lajunchan* (Kettunen and Helmke 2014: 48).

[9] Alternative transliteration: **EB'** (Montgomery and Helmke 2007); **?EH** (Beliaev et al. 2016: 144).

[10] Alternative transcription: *Eb* (Kettunen and Helmke 2014: 57); *?Eh* (Beliaev et al. 2016: 145).

[11] Eb, the 12th day of the Maya 260-day calendar (Tzolk'in/Tsolk'in).

[12] Glyph G and its modifier, Glyph F, which belong to the supplementary series, occur after the day sign in the 260-day calendar. Glyph G is a cycle of nine gods, each denoting a patron deity that rules over that specific day in the calendar, and Glyph F has something to do with books, paper or headdresses. For more details see, such as, Coe and Stone 2005: 49; Josserand and Hopkins 2011: 53; Calvin 2012: 17; Johnson 2013: 94; Kettunen and Helmke 2014: 50.

[13] Alternative transliteration: **SEK** (Montgomery and Helmke 2007); **TSEK** (Calvin 2012: 15); **ka-se-wa** (Beliaev et al. 2016: 145).

[14] Alternative transcription: *laju?n* (Beliaev et al. 2016: 145).

[15] Alternative transcription: *Sek* (Mathews and Bíró 2006); *Zec* (Josserand and Hopkins 2011: 36); *Kasew* (Calvin 2012: 15); *Kase?w* (Beliaev et al. 2016: 145).

[16] Glyph A6 is badly damaged, and other tentative reading is as follows: ...**-HUL-li**, *huli*, 'the arrival of' (Beliaev et al. 2016: 144-145).

[17] Glyph B6 and A7 are badly damaged, and they may record the name and title of Ruler C.

[18] Alternative reading by Beliaev et al. (2016: 144-146) is as follows **5-WINIK?**, *ho' winik?,* '5 winals?'.

[19] Alternative transcription: '*uxlajun* (Josserand and Hopkins 2011: 36); *uxlajun/oxlajun* (Kettunen and Helmke 2014: 48); *huuxlaju?n* (Beliaev et al. 2016: 145).

[20] The 20th day of the Maya 260-day calendar (Tzolk'in/Tsolk'in).

E1[1]	**?-OK?-TUN-ni**	*?ok? Tuun*	(name of structure) foot? stone
F1	**3-a-je-la**	*ux ajel*	3 k'ins passed?
G1	**18-YAXSIHOM**[2]	*waxaklajun yaxsihoom*[3]	18 Yax[4]
H1	**[u-CHOK-wa] ?**	*u chokow*	he scattered ?
I1	**ya-AJAW-wa**	*yajaw*	the vassal/subordinate ruler (of)
J1	**OCH-K'IN KALOMTE'**[5]	*ochk'in kaloomte'*[6]	(the) West Kalomte[7]
I2	**17 he-wa**	*wuklajun hew*	17 k'ins
J2	**0-WINIK**	*mih*[8] *winik*	0 winal
I3	**3-TUN**	*ux tuun*	3 tun
J3	**5-KABAN**	*ho' kaban*	5 Kaban[9]
I4	**CHUM-SAKSIHOM**[10]	*chum saksihoom*[11]	seating of Sak[12]
J4[13]	**?**	*?*	(capture event?)
I5	**?**	*?*	(capture event?)
J5	**?**	*?*	(capture event?)
I6	**[u-TZ'AK-AJ]**	*[u tz'akaj]*	[Its count (is)]
J6[14]	**[4-K'IN]?**	*[chan k'in]?*	[4 k'ins]?
I7	**[9-WINIK]?**	*[bolon winik]?*	[9 winals]?
J7	**7-IMIX**	*wuk*[15] *Imix*	7 Imix[16]
K1	**19-K'ANJALAB**	*b'alunlajun k'anjalab*	19 Pop[17]
L1	**i-K'AK'-EL-NAH**	*i k'ahk' el naah (?)*	house censed ?

[1] An alternative reading by Beliaev et al. (2016: 144-146) is as follows: **u-TUUN-ni,** *u tuun*, 'stone'.

[2] Alternative transliteration: **YAX** (Montgomery and Helmke 2007; Calvin 2012: 15); **YAX-SIHO?M-ma** (Beliaev et al. 2016: 144).

[3] Alternative transcription: *Yax Sihom* (Mathews and Bíró 2006); *Yax* (Montgomery and Helmke 2007; Josserand and Hopkins 2011: 44); *Yaxsiho?m* (Beliaev et al. 2016: 145).

[4] Yax, the 10th Classic Maya month (the Haab).

[5] Alternative transliteration: **?OCH-K'IN KAL-ma-TE?** (Beliaev et al. 2016: 144).

[6] Alternative transcription: *kalomte'* (Mathews and Bíró 2006; Montgomery and Helmke 2007); *kalo?mte?* (Beliaev et al. 2016: 145).

[7] **KALOMTE',** *kaloomte',* an elite or royal title of unknown meaning, but referring to an overlord, apparently of Teotihuacan origin; formerly known as the "Makuch", "Batab", and "Chak Te" title; frequently preceded by the directional glyph for "west" **OCH K'IN** (Montgomery and Helmke 2007).

[8] Alternative transcription: *mi* (Montgomery and Helmke 2007; Josserand and Hopkins 2011: 36); *mih/minan* (Kettunen and Helmke 2014: 48).

[9] Kaban, the 17th day of the Maya 260-day calendar (Tzolk'in/Tsolk'in calendar).

[10] Alternative transliteration: **SAK** (Montgomery and Helmke 2007; Calvin 2012: 15); **SAK-SIHO?M** (Beliaev et al. 2016: 144).

[11] Alternative transcription: *Sak Sihom* (Mathews and Bíró 2006); *Sak* (Montgomery and Helmke 2007; Josserand and Hopkins 2011: 44); *Saksiho?m* (Beliaev et al. 2016: 145).

[12] Sak, the 11th Classic Maya month (the Haab).

[13] Glyphs J4, I5, J5 are badly damaged, and they may record the event of capture (Pitts 2011: 34).

[14] Glyphs I6 and J6 are badly damaged.

[15] Alternative transcription: *huk* (Mathews and Bíró 2006; Calvin 2012: 13; Kettunen and Helmke 2014: 48).

[16] Imix, the first day of the Maya 260-day calendar (Tzolk'in/Tsolk'in).

[17] Pop, the first Classic Maya month (the Haab).

M1	**u-WAY-bi-li**	*u waybil*	its dreaming place /shrine
N1	**yo-OTOOT**	*yotoot*	(of) his house/home
O1	**K'INICH-6-?**	*k'inich wak ?*	K'inich[1] 6 ?
P1	**8-HA'-?-K'UH**	*waxak ha' ? k'uh*	8 Water ? God
O2	**ya-IL?-?-WINIK**	*?*	?
P2	**?**	*?*	Sky God?
O3	**?**	*?*	?
P3	**?**	*?*	?
O4	**?-?-JA-ya?**	*?*	?
P4	**?-CHAN?-na?**	*? chan*	? sky
O5[2]	**?-BALAM-?**	*? bahlam ?*	? Jaguar
P5-O7[3]	**?**	*?*	?
P7	**?AJAW-wa**	*?ajaw*	lord
Q1	**u-BAH** [4]	*u baah*	(It is) his image
R1[5]	**?-CHAN?**	*? chan?*	? Sky
Q2	**a-AK**	*ahk*	Ahk
R2	**K'UHUL LAKAM TUN-ni AJAW**[6]	*K'uhul lakamtuun ajaw*	Holy Lakamtun Lord
S1	**u-BAH**	*u baah*	(It is) his image
T1	**?**	*?*	?
S2	**?**	*?*	?
T2	**K'UHUL ? AJAW**[7]	*k'uhul ? ajaw*	Holy Santa Elena Lord
U1	**u-BAH**	*u baah*	(It is) his image
U2	**?**	*?*	?
U3	**JOY-BALAM-?**	*joy bahlam ?*	Knot-Eyed Jaguar
U4	**pa-CHAN-AJAW**	*pa' chan ajaw*	YAX Lord
V1	**u-BAH**	*u baah*	(It is) his image
V2	**?-AJAW**	*? ajaw*	? Lord
V3	**ma-si?**	*Mamis*	Mamis[8]

[1] K'inich, a royal title.
[2] Glyph O5 is damaged.
[3] Glyph P5-O7 are badly damaged and unreadable.
[4] Alternative transliteration and transcription: **B'AH**, *b'ah* (Mathews and Bíró 2006); **BAAH**, *baah* (Beliaev et al. 2016: 145).
[5] Glyph R1 is damaged and unreadable.
[6] Alternative transliteration and transcription: **LAKAM TUN-ni AJAW**, *lakamtuun ajaw* (Stuart 2007). Beliaev et al. propose another reading of R2. In their opinion, the second sign, the glyph block R2, appears to be **sa**, so the title can be compared to the Emblem Glyph from Monument 160 of Tonina: **ko?-sa-?AJAW** (Beliaev et al. 2016: 147).
[7] Alternative reading: **wa-be-?AJAW**, *Wabe*? ?*ajaw,* 'the lord of Wabe'. Wabe is a site of Santa Elena (Beliaev et al. 2016: 147).
[8] Beliaev et al. 2016: 147. Mamis was a city located near Tonina.

Analysis of the text:

(1) Date

As mentioned above, the text usually begins with a Long Count date indicating when the monument was dedicated, which is followed by supplementary information about the phase of the moon and other cycles the Maya used to further specify the dedication date.[1] According to the text on Piedras Negras Panel 12, the monument was dedicated on 9.3.19.12.12, 9 Eb 10 Sek (June 30, 514 AD), and Ruler C acceded to the lordship (glyphs A1-B7).[2]

(2) Events

The dedication date is then followed by a series of events (or verbs), which were thought to represent a biography of the ruler. The topics that dominate these events are birth, accession, the taking of war captives, the observance of various ceremonies and rituals, the birth of heirs to the throne, the involvement of various patron deities who oversee the events and provide protection or additional legitimization to the ruler, the ruler's death and burial, and the accession of the next successor to the throne. In a single text, several events were separated by so-called distance numbers,[3] indicating how much time has elapsed between these events.

There are three events recorded on Piedras Negras Panel 12. Firstly, at the period ending, 9.4.0.0.0, 13 Ajaw 18 Yax (October 16, 514 AD), the building was dedicated and incense was ritually scattered by the ruler, the vassal of the West Kalomte (glyphs C1-J1). And then 3 tuns and 17 days later, on 9.4.3.0.17, 5 Kaban Seating of Sak (October 17, 517 AD), the ruler captured prisoners (?)(glyphs I2-J5).[4] Then 184 days later, on 9.4.3.10.1, 7 Imix 19 Pop (April 19, 518 AD), the ruler took ritual fire into the shrine and dreaming place of the house of Holy Gods (glyphs I6-P7).

(3) Subject

The final information of the texts usually is the name of the protagonist with a variety of titles. On Piedras Negras Panel 12, the protagonists are the Lord of Lakamtun or Tonina (glyphs Q1-R2), the Lord of Santa Elena (glyphs S1-T2), Knot-Eyed Jaguar, the Lord of Yaxchilan (glyphs U1-U4), and the Lord of Mamis near Tonina (glyphs V1-V3).

[1] For general information about the supplementary series see Coe and Stone 2005: 49-53; Josserand and Hopkins 2011: 50-54; Johnson 2013: 94-98.

[2] The glyphs for the ruler's name are severely eroded.

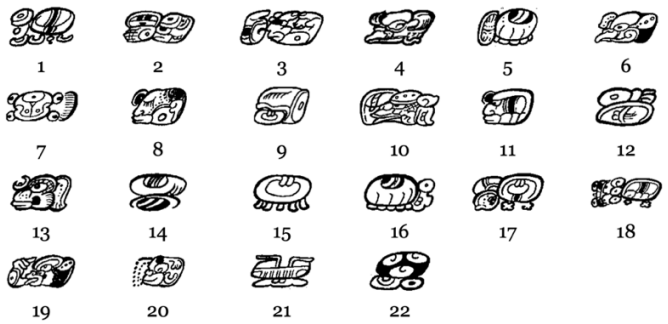
[3] For general information about the distance numbers see Coe and Stone 2005: 53-55; Josserand and Hopkins 2011: 57-59; Johnson 2013: 101-105.

[4] Glyphs J4, I5 and J5 are severely eroded, but according to the image on the right, there appears to be a captive from a military battle, so the eroded glyph may record the capture.

In the Late Classic Period, most of the polychrome Maya vessels were painted with a band of dedicatory hieroglyphic glyphs around the rim,[1] which were organized in formulaic and repeating patterns called the Primary Standard Sequence (PSS).[2] The content of these hieroglyphic texts are descriptions of different types of ceramic vessels and their uses, as well as the names and titles of their owners and sometimes the names of the scribes.[3] Based on the iconographic evidence and the titles of the patrons or owners of the vessels, it is clear that these vessels were used by the high elite during festive events.[4] The text normally consists of the following sections:

(1) An introductory section, indicating the dedication of the vessel, usually starting with *a-lay k'al-aj/t'ab-aay-l* "here, this one was held/made" (for example, Kerr NO. 2730, NO. 2777, NO. 4498 and NO. 5460).
(2) The surface treatment of the vessel, for example, painted or carved.
(3) The types of vessel, such as *lak* 'plate' (for instance, Kerr NO. 1892 and NO. 5072), *jay* 'bowl' (for example, Kerr NO. 0954 and NO. 4547).[5]
(4) The intended contents of the ceramic vessel, such as *kakaw* 'cacao' (Kerr NO. 2777).
(5) The name and titles of the owner or patron of the vessel, such as *k'ul ajaw* 'holy lord', *chak ch'ok* 'great prince'.

The ceramic vessel, Kerr NO.6080 (**Fig. 5.3.2-11**), from the Gardiner Museum in Toronto (G83.1.120) consisting of 22 glyphs, is a good case in point. According to the text, the vessel is a painted plate for food (that is, white venison) and its owner is a ballplayer, the son of the king of Uaxactun. The text on the plate is as follows:[6]



[1] For rollout photographs of Maya vessels and related information see the six-volume collection of Maya vase edited by Justin Kerr (1989, 1990, 1992, 1994, 1997, 2000) or http://www.mayavase.com/. And the number of Maya vessels in this dissertation follows Kerr.

[2] Coe 1973: 18-22.

[3] Houston and Taube 1987; Houston, Stuart and Taube 1989; MacLeod 1990; Zender 2000: 1040; Foster 2002: 293-294; 2016: 281-282; Boot 2005: 1; Calvin 2012: 63-68; Kettunen and Helmke 2014: 31-36.

[4] Reents-Budet 1994: 72-75; Calvin 2012: 63-68; Kettunen and Helmke 2014: 32.

[5] For details about Maya vessel type and type collocations in the PSS see the discussion in Boot 2005; Kettunen and Helmke 2014: 32-36.

[6] Zender 2000: 1040-1045.

Fig. 5.3.2-11
Maya ceramic vessel (Kerr NO.6080)[1]

a-lay k'ahl-aj y-ich (1-3) *u-tz'iib-il* (4-6) *u-lak u-we'-ib'* (7-10) *ta sak chij-il waaj* (11-15) *b'ate' pitz-iil u-yut-al kele'em k'ujul slyaj chan ajaw* (16-22)

'Here is made (1-3) the writing/painting of (4-6) his eating-instrument (that is, plate[2]) (7-10) for white venison food of (11-15) the *b'ate*, the ballplayer, the son of the Holy Lord of Uaxactun (16-22).'[3]

The four surviving Maya codices —— the *Codex Dresden, Codex Paris, Codex Madrid* and *Códice Maya de México* (also known as *Grolier Codex*) —— are generally attributed to the Late Postclassic period (ca. 1250-1520 AD),[4] which contain (1) ritual and divinatory almanacs used to schedule rituals as part of the 52-year calendar that guided civic and religious life; and (2) astronomical tables which document important astronomical events. If we take the *Dresden Codex* as an example, the arrangement of the codex is a series of almanacs providing instruction for the timing of various religious rituals. For instance, pages 24 and 46-50 (**Fig. 5.3.2-12**) in the *Dresden Codex* are the Venus table.[5] Therefore, the preparations and performance of ritual practices and sacrifices are the main contents of early Mesoamerican writing. In other words, early Mesoamerican

[1] http://research.mayavase.com/kerrmaya_hires.php?vase=6080
[2] For discussions of "plate" and "eating-instrument" in PSS see Zender 2000: 1042-1044; Boot 2005.
[3] Mainly based on Zender 2000: 1038-1055; Boot 2003.
[4] (Vail 2006: 497)
[5] For more discussions of the Venus table in the *Dresden Codex* see e.g. Bricker and Bricker 1988, 2007, 2011; Wells 1991; Justeson 2017.

writings were heavily used in the context of ritual andceremony. It is very likely that these texts were used for display to show the power of the ruler and to legitimize and facilitate the ruler's administration.

Fig. 5.3.2-12
Page 49 of the *Dresden Codex*[1]

[1] Page 49 of the *Dresden Codex* comes from http://www.mayavase.com/kings.pdf.

5.4 Re-discussion of stimulus diffusion

As discussed in **5.1**, writing as a system with a cohesive structure seems to be an invention rather than the product of a lengthy period of development in China and Mesoamerica. However, the question remains as to where and how it was invented. The concept of multiple independent origins of writing (that is, in Mesopotamia, Egypt, China and Mesoamerica) enjoys an increasing popularity in academia, but we should still keep an open mind on the possibility of stimulus diffusion at the formative stages of writing. As some scholars have pointed out, the diffusion of the idea of writing is still worth debating.[1] The diffusion of the idea of writing does not equate to direct influence from early Mesopotamian writing. Rather, it means that Egypt and China might have gotten the idea that a visual system of signs could be used for recording language from Mesopotamia (or Mesoamerica might have gotten the idea from China).

With regard to the earliest known writing systems in Mesopotamia and Egypt, some scholars support stimulus diffusion between the two, but rely on varied evidence. Baines argues that Egyptian writing was attested at the end of the Predynastic period and progressively developed to become a fairly stable system in the First Dynasty.[2] It is quite possible that the idea of writing was introduced indirectly by stimulus diffusion from Late Uruk Mesopotamia to Egypt via trading colonies. Nissen claims that Mesopotamian cuneiform writing and the Egyptian hieroglyphic writing appeared at about the same time. Unlike Mesopotamian writing, which developed out of earlier accounting and communication devices, Egyptian hieroglyphs appear to have no precursors.[3] In his view, the adoption of cylinder seals and the application of Uruk-style niches on the outer façades of a large building are the manifestation of Mesopotamian cultural influence on Egypt. Therefore, it appears that the direction of influence of the writing system is from Mesopotamia to Egypt and the idea of writing might have migrated to Egypt along with other cultural items. Moreover, not a single item of Egyptian origin or affiliation has been found in the Late Uruk period in Mesopotamia. The possibility of connections between early Mesopotamia and China, and between China and Mesoamerica will be discussed in detail in the following section.

5.4.1 Mesopotamia and China

With respect to Mesopotamian or West Asian ("Near East") influence on early Chinese writing, some scholars, such as Bottéro, argue that the hypothesis of a

[1] Baines 2007; Schmandt-Besserat 2014; Nissen 2015.
[2] Baines 2007: 36.
[3] Nissen 2015: 123-124.

diffusion of the idea of writing from the West is more credible than the hypothesis of an independent origin of Chinese writing.[1] In their view, China was not isolated, and it could not have developed in the way it did without cultural exchange with the rest of the world. Moreover, early Chinese writing appeared ca. 1700 years later than writing in Mesopotamia, so China had enough time to receive the idea of writing from other civilizations in the vicinity of the former. Furthermore, the oracle-bone inscriptions demonstrate that it was already a mature writing system when it first appeared in the Late Shang dynasty, which can be best explained by the hypothesis of stimulus diffusion and consequent conscious invention.

From my perspective, it is quite possible that China got the idea of writing through cultural exchange with the West, and the importation of the chariot is a good case in point. Chariot refers to "a light conveyance intended for a minimum number of people, mounted on two spoked wheels and drawn by two or more horses harnessed to a central draught pole".[2] There is no consensus among scholars on the origin of the chariot in China. Western scholars believe that the Chinese chariot is an import from the West, that is, West Asia[3] and the Eurasian steppe.[4] East Asian scholars' opinions vary: (1) some follow Western scholars, arguing that the Chinese chariot is closely related to its western counterpart;[5] (2) while some prefer an indigenous origin.[6]

The primary basis for the view of diffusion is the abrupt appearance of the chariot in China and the striking similarities between the Chinese models and western types. In the first place, the earliest examples of Chinese chariots were found at Late Shang sites in and around Ānyáng 安陽,[7] dating to ca. 1250 BC-1050 BC.[8] These chariots are in a fully developed form. No precursors such as carts or any form of oxen- or horse-pulled wagon have been found so far in China.[9]

[1] Bottéro 2004: 259.
[2] Shaughnessy 1988: 192.
[3] Littauer and Crouwel 1979.
[4] Piggott 1974, 1978, 1983: 103; Shaughnessy 1988, 1989; Sawyer 2011: 342-344.
[5] Hayashi Minao 林巳奈夫 1959; Lín Yún 林沄 1991; Wū Ēn 乌恩 1994; Lǐ Xuéqín 李學勤 1997; Wáng Hǎichéng 王海城 2001; Gōng Yīngyàn 龚纓晏 2003; Wáng Wēi 王巍 2003; Yáng Hóng 楊泓 2003; Wéi Jìngwén 韋靜雯 2012; Xíng Chéngcái 邢成才 2012.
[6] Sūn Jī 孫機 1984, 1985, 1993; Yáng Yīngjié 楊英傑 1986: 55-57; Wáng Jiànzhōng 王建中 andQiū Kè 邱克 1987; Zhái Défāng 翟德芳 1988; Zhèng Ruòkuí 鄭若葵 1995; Wáng Xīngguāng 王星光 2005; Dù Yǒng 杜勇 2013.
[7] A list of the excavated Shang chariots can be found in Wáng Hǎichéng 王海城 2002: 50-52.
[8] Zhōngguó shèhuì kēxuéyuàn kǎogǔ yánjiūsuǒ 中國社會科學院考古研究所 2003: 294.
[9] Shaughnessy 1988: 189-190; Wáng Hǎichéng 王海城 2001; Gōng Yīngyàn 龚纓宴 2003: 28; Sawyer 2011: 342-344; Xíng Chéngcái 邢成才 2012: 14-21.

Moreover, Chinese chariots show striking similarities to western ones. Some Chinese archaeologists have reconstructed these Shang chariots,[1] such as the chariot of Dàsīkōng cūn 大司空村 M175 (**Fig. 5.4-1**).

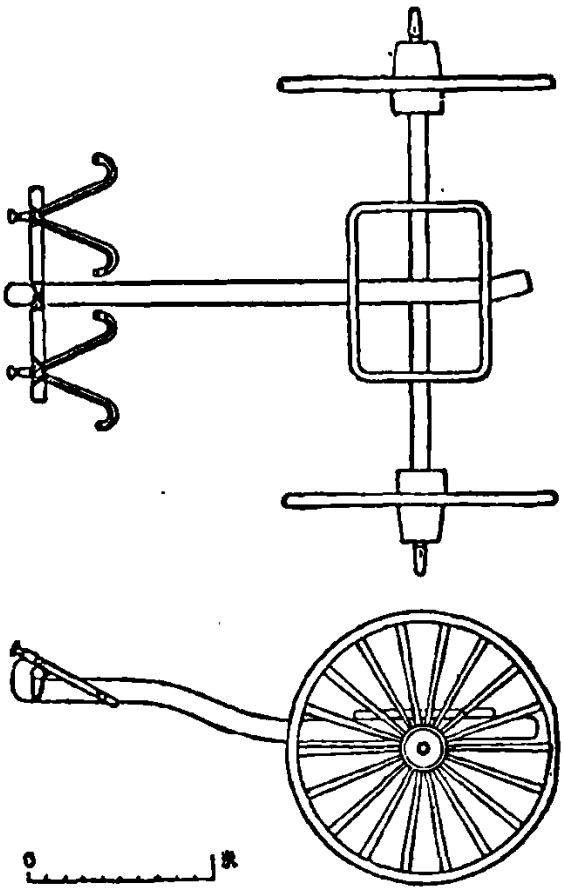


Fig. 5.4-1
Drawings of the chariot from Dàsīkōng cūn 大司空村 M175, measured in meter units[2]

Regarding the origin of the chariot itself, some scholars argue that it originates from West Asia,[3] while others prefer an origin on the Eurasian Steppe.[4] As for China, the chariot was most likely to have been imported from the Eurasian Steppe. This is due to the fact that Chinese chariots share more similarities with the Eurasian Steppe ones. The chariot found at Lchashen (ca. 1600 BC) (**Fig. 5.4-2**) is a good example.

[1] Mǎ Dézhì 馬得志 et al. 1955: 60-66; Shí Zhāngrú 石璋如 1968a, 1968b, 1970, 1979, 1987; Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ ānyáng gōngzuòduì 中國科學院考古研究所安陽工作隊 1972: 24-28; Yáng Bǎochéng 楊寶成 1987: 546-555; Zhāng Chángshòu 張長壽 and Zhāng Xiàoguāng 張孝光 1986.

[2] Yáng Bǎochéng 楊寶成 1984: 548, figure 2.

[3] Childe 1951, 1954; Littauer and Crouwel 1979: 68, 1996: 934-939.

[4] Piggott 1974, 1978, 1983; Anthony and Vinogradov 1995: 40. However, Piggott (1992: 48-49) modified his perspective, now arguing that the chariot might have been independently invented in West Asia and the Eurasian Steppe.

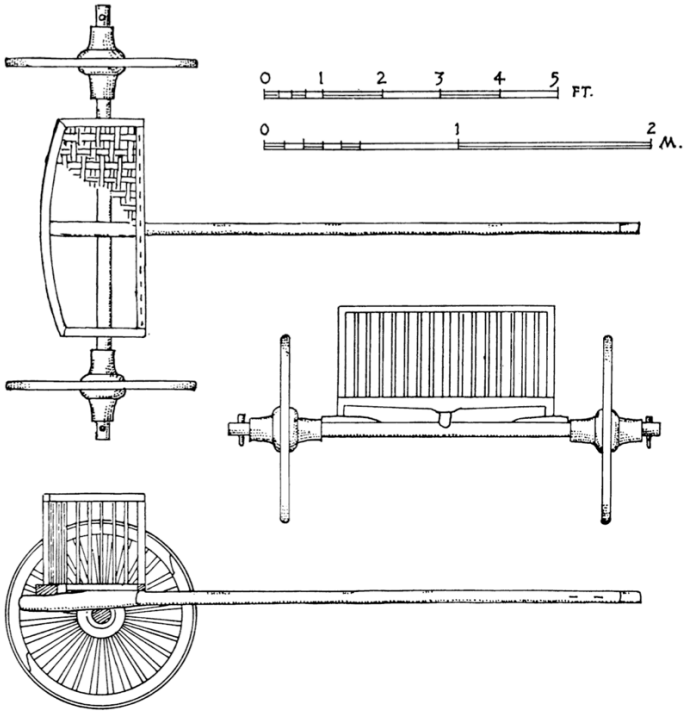


Fig. 5.4-2
Drawings of the chariot from Barrow II, Lchashen[1]

The Chinese and Lchashen chariots, as other chariots everywhere, consist of three basic components: (1) a chariot box in which the driver and others ride, (2) an axle and wheel assemblage, and (3) a harnessing assemblage. To be more specific, the wheels, for example, are all made of wood with numerous spokes, generally 16 to 26 in the Shang, and 28 in the Lchashen. The chariot box is mounted above a mid-placed axle, which is fixed in place, and is about 300 cm in length in the Shang, and 225 cm in the Lchashen.

However, scholars who proclaim an indigenous origin have placed more emphasis on the difference between Chinese chariots and western ones.[2] For example, the Shang wheels have 16 to 26 spokes, while the Near Eastern ones usually have only 4 to 8. The Shang axles are centrally placed, while the Near Eastern ones have back-placed axles since ca. 1500 BC. However, as some scholars have pointed out, these researchers focus primarily on the chariots of West Asia while ignoring the ones from the Eurasian Steppe in their comparative studies.[3] As mentioned above, Chinese chariots appear to be imported from the Eurasian Steppe so many features of Chinese chariots lose their distinctive character when compared with the Eurasian Steppe ones rather than West Aisa or East European versions from Mesopotamia, Egypt, or Mycenae. Even if there are some differences between Chinese chariots and the Eurasian Steppe ones, such as the size of the wheels (e.g., a diameter of 122-147 cm in the Shang and 98-102 cm in the Lchashen), they are improvements made to adapt to the situation in China, which is inevitable in

[1] Piggott 1974: 17, figure 1.
[2] Zhái Défāng 翟德芳 1997: 97-101; Zhèng Ruòkuí 鄭若葵 1995: 50-52; Dù Yǒng 杜勇 2013: 60-61.
[3] Wáng Hǎichéng 王海城 2002: 2-3; Sawyer 2011: 344.

the process of transmission.[1] These differences do not undermine the theory of diffusion.

Another argument that has been made for an indigenous origin is reference to the chariot's invention in traditional Chinese literature.[2] According to these traditions, four individuals, Xī Zhòng 奚仲, Huáng Dì 黃帝, Dà Yǔ 大禹 and Fú Xī 伏羲, are considered to be the inventors of the Chinese chariot. Most Chinese scholars consider Xī Zhòng 奚仲 as the most credible inventor.[3] The attribution of the chariot's invention to Xī Zhòng 奚仲 first appeared in Warring States documents. For example,

(1) 奚仲作車。[4]

Xī Zhòng shǐ zuò chē.

Xī Zhòng 奚仲 was the first to make a chariot.

(2) 奚仲作車。[5]

Xī Zhòng zuò chē.

Xī Zhòng 奚仲 made the chariot.

According to records in *Zuǒ Zhuàn* 左傳 and *Shuōwén Jiězì* 說文解字,[6] some scholars believe that Xī Zhòng 奚仲 lived in the Xià Dynasty.[7] In their view, the ruts found at Yǎnshī 偃师 rite in Hénán province of the Èrlǐtóu 二裏頭 Culture in 2004[8] provide strong support for this claim.[9] These are the earliest ruts found so far in China, dating to the second period of the Èrlǐtóu 二裏頭 Culture, ca. 1900-1700 BC (late Xià Dynasty). On this basis, they have claimed that the Chinese chariot was invented by Xī Zhòng 奚仲 in the Xià Dynasty.

However, their argument makes no sense. Firstly, records vary in traditional literature about Xī Zhòng 奚仲, and most of these records are legends, which

[1] Wáng Hǎichéng 王海城 2002: 45; Gōng Yīngyàn 龔纓宴 2003: 28.

[2] Zhái Défāng 翟德芳 1997: 103-104; Zhèng Ruòkuí 鄭若葵 1995: 45-46; Wáng Xīngguāng 王星光 2005: 29; Xíng Chéngcái 邢成才 2012: 11; Dù Yǒng 杜勇 2013: 58-59.

[3] Dù Yǒng 杜勇 2013: 58-59.

[4] *Shì Běn* 9 • *Zuò piān* 世本 9 • 作篇 (Sòng Zhōng 宋衷 and Qín Jiāmó 秦嘉謨 2008: 362). The *Shì běn* 世本, also known as *Shì* 世 or *Shì xì* 世系, is said to have been compiled by historians in the pre-Qin period. It mainly records the family lineages of ancient emperors, feudatory lords and officials.

[5] *Mò Zǐ* 9 • *Fēi Rú* 墨子 9 • 非儒 (Sūn Yíràng 孫詒讓 1978: 181). The *Mò zǐ* 墨子 is work of Warring States period expounding the philosophy of Mohism, such as impartiality, meritocratic governance, economic growth and aversion to ostentation.

[6] For 左傳 *Zuǒ Zhuàn* see footnote in **1.1.2**.

[7] Dù Yǒng 杜勇 2013: 62.

[8] For details see discussions in Guì Juān 桂娟 2004.

[9] Zhèng Ruòkuí 鄭若葵 1995: 48-49; Wáng Xīngguāng 王星光 2005: 29-30.

makes it impossible to confirm that Xī Zhòng 奚仲 lived in the Xià Dynasty. More importantly, the width between two ruts of the Èrlǐtóu 二裏頭 Culture is only ca. 100 cm, less than half of the width of the earliest chariots (ca. 220-240 cm) found at Late Shang sites in and around Ānyáng 安陽. Rather than being made by chariots, the ruts of the Èrlǐtóu 二裏頭 Culture are more likely to have been made by some sort of small cart, and humans or oxen would have provided the power for these vehicles.[1] After the appearance of chariots, this sort of small cart was still in use, since similar ruts were also found at some Late Shang and Zhou sites, such as the ruts found at the Late Shang site of Yīnxū huāyuánzhuāng 殷墟花園莊 H27, whose width is ca. 150 cm,[2] and the ruts found at the Lǐjiāyáo 李家窑 site in Hénán province from early Zhōu, the width of which is ca. 145 cm.[3] Even if the ruts of the Èrlǐtóu 二裏頭 Culture were made by a chariot, its appearance is still later than the chariot of the Eurasian steppe, the earliest chariot of which was found in the tomb of the Sintashta-Petrovka Culture along the Sintashta River, in the north of Kazakhstan, dating to ca. 2200/2100 to 1800/1700 BC.[4] So the possibility that the chariot was imported from the West still cannot be ruled out and remains the best explanation.

In addition, the domestication and use of horses is one of the necessary conditions for the chariot's invention. Some scholars argue that horse bones found in the Lóngshān 龍山 Culture (ca. 3000-2000 BC) can indicate the domestication of horses in China.[5] However, as some scholars have pointed out, very few horse bones have been found at Neolithic sites in China, mainly in the Gānqīng 甘青 area. These most likely came from wild horses that were accidentally caught for food.[6] It was not until the Late Shang that horse bones appeared at sites on the Central Plains, such as Yīnxū 殷墟. And horse-related artwork, such as the jade horse found at the tomb of Fù Hǎo 婦好, also abruptly appeared in Late Shang. Moreover, at the beginning of the second millennium BC, horses were already used for chariots.[7] Furthermore, the average height of a horse of the Sintashta-Petrovka Culture is ca. 136-144 cm,[8] and the average height of a horse of Late Shang is ca. 133-144 cm.[9] So it is very likely that domesticated horses were imported from the Eurasian Steppe through the Gānqīng 甘青 area to Central China around the Late Shang Period. Besides, as Janhunen has pointed out, the terms for the horse are different in

[1] Wáng Xuéróng 王學榮 1999; Féng Hǎo 馮好 2003; Sawyer 2011: 343-344; Xíng Chéngcái 邢成才 2012: 12-13.
[2] Zhōngguó kēxuéyuàn kǎogǔ yánjiūsuǒ ānyáng gōngzuòduì 中國科學院考古研究所安陽工作隊 1992: 103.
[3] Sānménxiáshì wénwù gōngzuòduì 三門峽市文物工作隊 1993.
[4] Anthony 1998: 105-106; Wáng Hǎichéng 王海城 2002:4.
[5] Zhèng Ruòkuí 鄭若葵 1995: 52-53; Wáng Xīngguāng 王星光 2005: 32.
[6] Yuán Jìng 袁靖 and Ān Jiāyuàn 安家瑗 1997; Linduff 2000: 216; Wáng Hǎichéng 王海城 2002: 38.
[7] Anthony and Vinogradov 1995; Kuzmina 1994: 404; Wáng Hǎichéng 王海城 2002: 38.
[8] Zdanovich 2000: 400-402.
[9] Zhōu Běnxióng 周本雄 1996: 252.

each genetic group of languages, such as Indo-European (*equus* etc.), Ugric (**lox*), Yeniseic (**kuqs*) and Turkic (*al*) in Central Asia.[1] In his judgment, it is quite possible that these language communities were familiar with the horse from prehistoric times, and these various words for the horse already existed at the time when this animal was being domesticated. However, the major languages in East Asia seem to use reflexes of a single primary name for the horse: Mongolic (*morin*), Tungusic (*murin*), Korean (*mar*), Japanese (*uma*) and Chinese (*ma*), which suggests that the horse was introduced to East Asia from a single source, probably from the horse-breeding population in Eastern Central Asia in a rapid wave of cultural influence.[2]

Another piece of supporting evidence can be found in Indo-European loanwords in Chinese. The similarity between some Chinese words and Indo-European words first attracted the attention of scholars, such as Edkins (1871), in the second half of the 19th century. Afterwards, some scholars, such as Jan Ulenbrook (1967) and Tor Ulving (1968), compared Chinese and Indo-European words on the basis of the reconstruction of the medieval and archaic readings of Chinese characters by Sinologists, such as Karlgren (1940). Since then, other scholars have made comparisons based on reconstructions by Sinologists, such Baxter and Sagart.[3] They argue that some Chinese words derive from an Indo-European language.[4]

One widely accepted example of Indo-European (most likely, Tocharian) loanwords in Chinese is the word for 'honey' (*mì* 蜜):[5]

Chin. *mì* 蜜 'honey' <MC *mjit* <OC **mit*[6]
Toch. B[7] *mit* 'honey' <PToch. **m'ət* <PIE **med^{h}u-*[8]

More importantly, some words in Old Chinese concerning chariotry are very likely to have been borrowed from an Indo-European language (again, most likely Tocharian).[9] The words for "spokes of a wheel" (*fú* 輻) and "nave of a wheel" (*gǔ* 轂) are good examples:

[1] Janhunen 1998.
[2] Janhunen 1998: 426.
[3] Baxter 1992; Baxter and Sagart 2014, 2020.
[4] Tsung-tung Chang 1988; Lubotsky 1998; Jixu Zhou 2002, 2003; Wei 2005a, 2005b, 2022; Židek 2017.
[5] Polivanov 1916; Lubotsky 1998: 379; Pinheiro 2010: 75, following Lubotsky; Židek 2017: 49. However, Polivanov does not mention any Indo-European branch in his work (Židek 2017: 49).
[6] Baxter and Sagart 2014: 205-206, 216, 290, 352; 2020: 76. For alternative reconstruction of *mì* 蜜 see also Schuessler 2009: 304.
[7] Tocharian is the easternmost representative of the Indo-European family, which is attested in two dialects or languages, known as Tocharian A and Tocharian B (Lubotsky 1998: 380).
[8] Lubotsky 1998: 379.
[9] Lubotsky 1998: 382-385; Pinheiro 2010: 76; Židek 2017.

(1) Chin. *fú* 輻 'spokes of a wheel' <MC *pjuwk* <OC **pək*[1]/ **pɯgs*[2]
Toch. B *pwenta* (pl.) <PToch. **pəw-* <**puH-* 'spokes of a wheel',[3] cf. Skt. *paví-* 'felloe' < ** peu (H)-i-*[4]

(2) Chin. *gǔ* 轂 'nave of a wheel' <MC *kuwk* <OC **[k]ˤok*[5]/ **kloog*[6]
Toch. B *kokale,* A *kukäl* 'chariot' (<**'turning point, wheel'), PIE **kʷekʷlo-* 'turning point, wheel' (Skt. *cakrá-*, OE *hweohl* 'wheel', Gr. *κύκλος* 'ring, circle, wheel', Lith. *kãklas* 'neck', etc.)[7]

The chariot requires complex techniques, and its invention would not have been easy. The Chinese chariot shows striking similarities to Western ones, and was invented several hundred years later than in the West. The possibility of independent invention of the chariot in these two areas is minimal. Therefore, the Chinese chariot appears to be imported as part of the cultural exchange with the Eurasian Steppe during the period ca. 2000-1250 BC. During this cultural diffusion, chariotry terminology would have been borrowed from Indo-European with the adoption of technology. Thus, it is very likely that during this process a Chinese elite also got the idea of writing from the West. As discussed in Chapter 3, Chinese writing first appeared in the Early Shang period (ca. 1600-1400 BC), which coincides roughly with the importation of the chariot.

5.4.2 China and Mesoamerica

The Olmec (ca.1200-600 BC) is the first great civilization in Mesoamerica. The Olmec civilization appears to have been quite mature and developed from its very beginning, so some scholars have argued that it probably it originates from an alien culture.[8] Some scholars, Chinese scholars in particular, have oriented their theories towards diffusionism, focusing on alleged transpacific contacts, such as between the Shang and the Olmec (also known as Yīnrén dōngdù měizhōu 殷人東渡美洲 or Yīnrén hángdù měizhōu 殷人航渡美洲 in Chinese). These scholars speculate that the establishment of the Olmec culture was caused by the migration of Shang refugees from China to the Americas due to oppression under the new Zhou Dynasty.

[1] Baxter and Sagart 2020: 31.
[2] Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 332.
[3] For details see discussions in Židek 2017: 43.
[4] Lubotsky 1998: 383.
[5] Baxter and Sagart 2020: 36.
[6] Zhèngzhāng Shàngfāng 鄭張尚芳 2018: 404.
[7] Lubotsky 1998: 383.
[8] Eckholm 1953, Meggers 1975.

The Shang-Olmec contact theory can be traced back to 1846, when British Sinologist Walter Henry Medhurst (1796-1857, Mài Dōusī 麦都思) translated *The Book of History* (*Shàng Shū* 尚書 or *Shū Jīng* 書經).[1] He speculated that Shang survivors of the Zhou conquest fled across the sea and established a new state in Mexico ca. 1000 BC.[2] The finding of stone anchors off the California coast in 1973 and 1975 sparked discussions of Shang-Olmec contact among scholars. American scholars, such as James R. Moriarty, argue that stone anchors are about 2500 to 3,000 years old and come from Asia.[3] Taking this as their main basis, some Chinese authors，such as Fáng Zhòngfǔ 房仲甫 and Shí Zhōngjiàn 石鐘健, wrote articles in support of the so-called Shang-Olmec contact theory.[4] However, this theory has been rejected by several scholars, such as Zhāng Hǔshēng 張虎生, Luó Róngqú 羅榮渠, Ān Tàixiáng 安太庠, Gōng Yīngyàn 龔纓晏, Zhāng Jiàn 張箭.[5] In particular, geologists have pointed out that the stone anchors are made of limestone and were fashioned on the west coast of North America.[6] Moreover, there is no record of the Shang sailing eastwards across the Pacific in traditional Chinese literature.

Apart from this, most discussions have focused on similarities in art style and motifs, and the markings on four jade celts of La Venta Offering 4 (**Fig. 5.4-3**) have been paid considerable attention. La Venta Offering 4, which was discovered at La Venta, Mexico in 1955 and dates to ca. 900 to 600 BC,[7] consists of six jade celts (four of which have markings) and sixteen human figurines made of jade, serpentine, and granite.[8] In 1992, these markings were first identified as Shang ancestors' names written in the Chinese script of the Shang Dynasty.[9] In 1996, Mike Xu (Xǔ Huī 許輝) offered a similar opinion,[10] which he considered the key evidence for his argument that Olmec civilization in Mesoamerica originated in ancient China. In his follow-up studies (1999, 2001), he made a detailed comparison of alleged Olmec glyphs and Shang oracle-bone signs, and argued that the former derived from the latter. His study not only gained much attention in the English-speaking world

[1] *The Book of History* is also known as the *Book of Documents*, *Classic of History*, or *Venerated Documents*, is a collection of rhetorical prose attributed to figures of ancient China, such as the Xià, Shāng, and Zhōu Dynasty.

[2] Zhāng Jiàn 張箭 1996: 16; Fàn Yùzhōu 範毓周 2011: 22.

[3] Pierson and Moriarty 1980.

[4] Fáng Zhòngfǔ 房仲甫 1979, 1981, 1983; Shí Zhōngjiàn 石鐘健 1983.

[5] Zhāng Hǔshēng 張虎生 1982; Luó Róngqú 羅榮渠 1983; Ān Tàixiáng 安太庠 1992; Gōng Yīngyàn 龔纓晏 1992b; Zhāng Jiàn 張箭 1992a, 1992b, 1993.

[6] Frost 1982; Ān Tàixiáng 安太庠 1992.

[7] Drucker et al. 1959.

[8] For more details of La Venta Offering 4 see Drucker et al. 1959: 152-161. Online resource: https://repository.si.edu/handle/10088/15464.

[9] Wáng Dàyǒu 王大有 and Wáng Shuāngyǒu 王双有 1992, neither of whom is a specialist on early Chinese writing.

[10] For more details see also Mike Xu 2002.

at that time, but also support from Chinese scholars, such as Fàn Yùzhōu 範毓周.[1] However, his interpretation does not make much sense. According to the archaeological report of La Venta Offering 4, the four jade celts with markings seem to be cut from an earlier jade plaque, and much of the original design "has been ground away in rounding off the edges of the celts",[2] so they cannot be treated as complete, independent signs.[3] These markings are Olmec motifs; for example, the markings on Celt 1 represent a typical Olmec image of the earth monster or Maize God.[4]

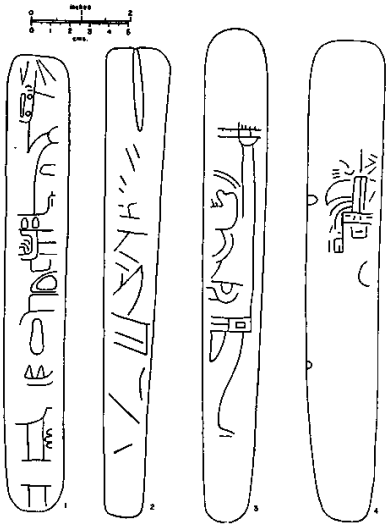


Fig. 5.4-3
La Venta Offering 4 (above) and its text (left)[5]

[1] Fàn Yùzhōu 範毓周 2011: 24.
[2] Drucker et al. 1959: 158.
[3] Gōng Yīngyàn 龔纓晏 1992a: 115-116; Zhang He 2011: 63, 2017: 3.
[4] Zhang He 2011: 64, 2017: 7-9.
[5] Photo of La Venta Offering 4: https://smarthistory.org/offering-4-la-venta/. Drawing of jade celts: Drucker et al. 1959: 157, and for drawings see also Zhang He 2011: 64, 2017:5.

To study the historical connection between China of the Shang and Zhou periods and Preclassic Mesoamerica, similarities in the calendrical systems of China and Mesoamerica should be given more attention. As mentioned earlier, calendrical data are an important component of early Chinese and Mesoamerican texts. A complete oracle-bone inscription consists of preface, charge, prognostication and verification. Although these elements are not all present in every case, the most common ones include the preface and charge. In most cases, the preface records the date (the 60-day *gānzhī* 干支 cycle) on which the divination is performed and the name of the diviner.[1] Bronze inscriptions of the Shang and Zhou periods usually begin with a date and place notation. Likewise, in the early Mesoamerican inscriptions (Zapotec, Epi-Olmec and Maya), date formulae usually appear at the beginning of a text. Moreover, it is also the Mesoamerican practice that people take their names from the ritual calendar. Calendrical glyphs occurring alone beside an individual are often recognized as personal names.[2]

As Whittaker (1984, 1990a, 1990b, 2007, 2009) has pointed out, there are structural parallels between the elements of the Chinese ritual calendar (the 60-day *gānzhī* 干支 cycle) and of the Mesoamerican ritual calendar (*tonalpohualli*).[3] As mentioned before, the Chinese ritual calendar consists of 60 days named by a cycle of 10 *gān* 干 names running alongside a cycle of 12 *zhī* 支 names,[4] and the Mesoamerican calendar consists of 260 days, combining a cycle of 20 names running alongside a cycle of 13 numbers.[5] Although these two systems seem to be quite different on the surface, there are some features suggesting a common origin. For instance, animal associations are attached to one of the cycles in each of these two systems. In China, animals associated with the years named after the *zhī* 支 cycle can at least go back to the middle of the first millennium BC, and likewise, animals associated with days and years in the Mesoamerican calendar can also at least go back to the middle of the first millennium BC, that is, to the Zapotec ritual calendar.[6] The existence of the ritual calendar in Olmec culture is still a matter of debate, but Painting 3 (20 cm in length) (**Fig. 5.4-4**) in the cave of Oxtotitlan in the state of Guerrero appears to record a date "6 Dragon".[7] This Olmec cave dates to ca. 1000-900 BC, contemporary with early Western Zhōu.[8]

[1] For more details see Chapter 1.
[2] For more details see Chapter 4.
[3] Whittaker 1984, 1990a, 1990b, 2007, 2009.
[4] For the 60-day *gānzhī* 干支 table see Chapter 1.
[5] For Zapotec and Maya ritual calendar see Chapter 4.
[6] Whittaker 1990a, 2007: 346, 2009: 37.
[7] For details of Panting 3 of Oxtotitlan see Grove 1970: 18-20.
[8] Whittaker 1984: 156, 2007: 346, 2009: 38.

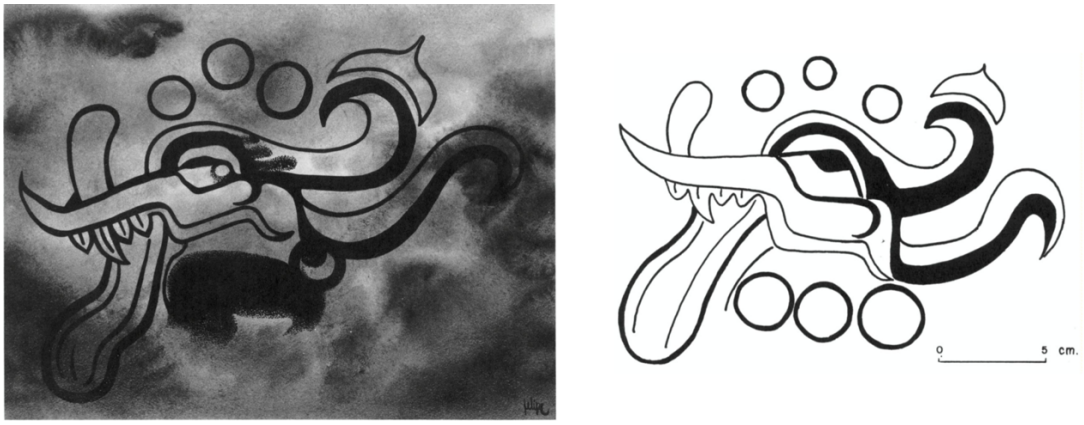


Fig.5.4-4 Painting 3 of Oxtotitlan, Guerrero[1]

In the Chinese *zhī* 支 cycle, position 3 is occupied by Tiger, while in Mesoamerica the position was presided over by the Jaguar (=Tiger). In the Chinese *zhī* 支 cycle, the sign for position 3 is *yín* 寅, a depiction of an arrow according to the oracle-bone inscriptions.[2] In the Preclassic Zapotec calendar, the sign for position 3 may depict an arrowhead.[3] Thus, the meaning of the sign, as well as the tiger associated with it, are paralleled in both Chinese and Mesoamerican systems.

Therefore, although there is no tangible evidence at present for contact between China and Mesoamerica in the Shang or Western Zhou periods, there are indeed many similarities between these two areas. The possibility cannot be ruled out that there has been some kind of contact between them. But as to how direct those contacts were, and to what extent they made an impact on local cultural development, the answers will need to await further evidence.

[1] Grove 1970: 17, and online resource: https://archive.org/details/grove-olmec-paintings-of-oxtotitlan-cave. For drawings see also Whittaker 1984: 157.
[2] Yú Xǐngwú 于省吾 1999: 2530; Xú Zhōngshū 徐中舒 2014: 1585-1586; Tāng Kějìng 湯可敬 2018: 2172.
[3] Whittaker 1984: 237, 1990a, 2007: 346, 2009: 38; Urcid 2001: 222-224, 230-231.

Conclusion

With regard to the origins of writing, discussions primarily involve the following aspects: What is writing? When and where did writing first appear? Why did writing appear? Was writing evolved or invented? This comparative study of origins of Chinese and Mesoamerican writing focuses on these aspects.

What is writing?

When discussing the origins of writing, the first thing that should be clarified is the definition of writing. According to the conventional definition, writing is a subsystem of graphic recording, referring to graphic elements (signs) that codify and represent linguistic information in uniform size and arranged in sequence. Most specialists on Chinese writing and Mesoamerican pictorial manuscripts prefer a broader definition of writing. However, broadening the definition of writing blurs the distinction between writing and other graphic recording systems, that is, notation and iconography.[1]

The preference for a broader definition seems to be driven by these scholars' research tradition and the focus of their studies. Let us take the study of Chinese writing as an example. The formal study of Chinese writing began in the Hàn Dynasty, which, from the very beginning, attached great importance to the analysis of glyphic forms of signs in exploring their original meanings. This research tradition has consistently continued down to modern times, which has prevented Chinese scholars from paying enough attention to the relationship between language and writing, making them less able to recognize the true nature of writing.[2] The Chinese study of Neolithic graphic forms is a good case in point. Neolithic graphic forms from, such as, the Jiǎhú 賈湖 Culture (ca. 7000-5500 BC) and Yǎngsháo 仰韶 Culture (ca. 5000-3000 BC), are considered to be "writing" by many Chinese scholars due to the similarity in their graphic forms with oracle-bone or bronze signs. However, writing is the graphic representation of language, and no evidence can demonstrate that these Neolithic graphic forms represent language or complex communications.[3]

Likewise, the focus on iconography and art in Mesoamerican studies outside the Maya area also leads to a strong tendency to view iconography as a kind of writing and to want to expand the definition of writing to include it. As a result, the linguistic reference of writing is easily neglected in their definition of

[1] For more details see discussion in **1.2.1**.
[2] For more details see discussion in **1.2.2**.
[3] For more details see discussion in Chapter 3.

writing. The study of Olmec graphic forms is a good case in point. Scholars in favor of a writing system in the Olmec culture have paid great attention to the symbols on, for example, the Cascajal Block, the cylinder seal unearthed in San Andrés, and Monument 13 of La Venta. The primary basis of their studies is the graphic form and the similarities between these symbols and later Mesoamerican iconography and scripts. The premise of explaining these Olmec symbols on the basis of later Mesoamerican iconography and scripts is that they belong to the same system, which obviously cannot be demonstrated solely by the (relatively few) similarities between them. Moreover, the current evidence cannot demonstrate that these Olmec symbols represent a writing system. Without phonetic spellings and a clear linguistic context, it is impossible to determine whether these symbols represent language. On top of that, some symbols replicate decorative or iconographic motifs found on many small-scale artifacts, none of which has been recognized as any form of writing in their original context.[1]

In terms of the nature of early Chinese writing (oracle-bone script), it has been demonstrated to consist of three kinds of graphs: (1) logograms, the representation of lexical morphemes without explicit indication of the pronunciation of the words represented; (2) secondary logograms, derived by rebus usage from existing logograms, such as **C.m(r)[u]k*  , 'eye; spy (v.), monitor (v.); the name of a person or state' (*mù* 目); and (3) pseudo-logograms (cants), pseudo-logographic signs created solely for a phonetic purpose, such as **pˁək*  'north' (*běi* 北)'. The logogram can be further divided into two main groups, that is, (1) depiction of items or parts of items, such as **mə-rˁok*  'deer' (*lù* 鹿) and **[t.qʰ](r)A*  'chariot' (*chē* 車); and (2) depiction of attributes, states or actions, such as **[dz]oŋ*  'to follow' (*cóng* 從) and **[m-k-]rəp*  'reach to' (*jí* 及). And a semantic or phonetic indicator may sometimes be embedded in a logogram to indicate the semantic category or the reading of the sign. In some cases, logograms in the oracle-bone script are not pictorial but abstract in form, such as the numeral signs and the *gānzhī* signs.[2]

For the nature of early Mesoamerican writing, we can take the Maya hieroglyphic system as an example. The Maya script is morphosyllabic in nature, consisting of morphograms and syllabograms. A morphogram is a semantic sign representing a morpheme, as opposed to a logogram, which

[1] For more details see discussions in **4.1** and **4.5**.
[2] For details about the nature of early Chinese writing see discussion in **5.2.1**.

represents a lexeme, or a lexemic unit in a compound noun, but not a prefix or suffix. Morphograms in the Maya script represent concrete words and bound morphemes, conforming to CVC (ʔVC) or CVCVC (ʔVCVC) roots in the Maya language. These can be divided into two groups: (1) lexical morphemes, such us **AJAW** *ajaw* 'lord (n.)' and **WITS** *wits* 'hill, mountain (n.)'; and (2) grammatical morphemes, such as the plural suffix *-tak* written by the CVC sign **TAK** (or **TAAK**). Syllabograms in the Maya script represent consonant-vowel (CV) syllables (including ʔV). The most common word type in Classic Maya is consonant-vowel-consonant (CVC), which is written with two CV syllabograms with the last vowel suppressed, such as **tz'i-b'a** *tz'ib'* 'write, paint (v.)'. Moreover, syllabic signs can also be added to morphograms as phonetic indicators to aid in their reading, such as **TUUN-ni** *tuun* 'stone'.[1]

When and where did writing first appear?

Chinese writing was thought by some Chinese scholars to first appear in the Neolithic period. However, in the absence of phonetic spellings and a linguistic context, no evidence demonstrates that these isolated graphs on single pottery fragments represent language or complex communications.[2] Moreover, these Neolithic graphs appear to be more closely related to other graphic recording systems (notation or iconography) than to writing. For example, these graphs (marks) on pottery were used constantly but never mixed with Chinese signs, from the Neolithic period (such as Bànpō 半坡, Jiāngzhài 姜寨), through the Shāng period (such as Mǎqiáo 馬橋), down to the Spring and Autumn period and the Warring States period (such as Hóumǎ Niúcūn 侯馬牛村). By the Warring States period, Chinese writing was already fully developed, but pottery marks were still in use and in very primitive form.[3] Therefore, these Neolithic graphs cannot be treated as examples of the earliest stage of Chinese writing, and may have more to do with notation and iconography, which have no fixed relationship to language.

There is a general consensus that the earliest unambiguous instances of writing in China are the oracle-bone (and bronze) inscriptions of the Shāng period. On the basis of present evidence, the earliest examples of oracle-bone inscriptions are two engraved bones excavated at Èrlǐgǎng 二裏崗 (Early Shāng, ca. 1600-1400 BC). Although scholars hold different views on the interpretation of some signs and the parsing of the inscriptions, we can determine that the system of oracle-bone inscriptions had already been invented by the Early Shāng period.[4] The graphs on pottery fragments excavated at Xiǎoshuāngqiáo 小雙橋 (Early Shāng, ca. 1400 BC) belong to

[1] For details about the nature of Maya writing see discussion in **5.2.2**.
[2] For details about the nature of the Neolithic graphic forms see discussion in Chapter 3.
[3] For details see discussion in **3.2**, **3.3** and **3.5**.
[4] For details see discussion in **3.4.2**.

the same writing system as the oracle-bone and bronze inscriptions.[1] They are the only instances of writing in the Early Shāng period that have been found. The reason for such few examples from this period appears to be that most texts were written on perishable materials such as bamboo and wood strips, which have not survived, and the tool of writing appears to be a brush or something similar, which is indicated by the graphic form of oracle-bone and Shāng bronze signs as well as records in traditional Chinese literature.[2]

The presence of a writing system in the Olmec culture is still controversial. Based on current evidence, none of the so-called Olmec texts, that is, the Cascajal Block, the San Andrés seal and La Venta Monument 13, is writing, which is due to the fact that none of them represents language.[3] The earliest examples of Mesoamerican writing systems are Zapotec (ca. 500-200 BC), epi-Olmec (ca. 300 BC) and Maya (ca. 300-200 BC), which are found in geographically diverse locations, that is, the Valley of Oaxaca (Zapotec), Gulf coast (epi-Olmec) and northern Guatemala (Maya).[4] It is very likely that a single archaic script emerged somewhere in southern Mesoamerica, perhaps the Olmec heartland, before ca. 300 BC and probably in the Middle Preclassic period. The relatively abrupt emergence of Zapotec, epi-Olmec and Maya writing around 300 BC is perhaps to be ascribed to this archaic script or descendants of the same. However, it cannot be ruled out that writing was invented independently at the same time (ca. 300 BC or a little earlier) in these diverse areas. The idea of writing might have reached these areas before ca. 300 BC through stimulus diffusion from a region outside of Mesoamerica, such as China.[5] It may only have taken one or two centuries for full-fledged systems to develop from this initial stage.[6]

Why did writing appear?

With regard to the contexts of writing and the driving force behind its invention in Mesopotamia, based on the evidence now available, only Mesopotamia has direct data to support a reasonably complete sequence of writing development. Most likely, economic administration, control and monitoring of flows of goods and services throughout a city, were the central motivation for, and function of, writing.[7] For Egypt, scholars have a variety of views on the driving force behind the invention of writing. Besides a single administrative purpose, some scholars attach equal importance to both administrative and non-administrative uses, such as display, in the earliest

[1] For details see discussion in **3.4.3**.
[2] For details see discussions in **3.5**.
[3] For details see discussions in **4.1**.
[4] For details see discussions in **4.2**, **4.3** and **4.4**.
[5] For details see discussions in **5.4**.
[6] For details see discussions in **4.5**.
[7] For details see discussions in **2.5.1**.

period. Moreover, there is also an argument for a close relationship between the earliest writing in Egypt and visual culture. Based on current research, it is not yet possible to decide in favor of one thesis, and more in-depth research, especially on the nature of the inscriptions in Tomb U-j at Abydos, is needed.[1]

The invention of writing in China should be attributed to a combination of divination, rituals and administration. In the earliest oracle-bone texts, divination and royal ancestors play an important role in Shāng kingship and administration, and writing figured prominently in rituals to the ancestors. Shāng kings inquired as to the opinions of their ancestors through divination in order to legitimize their kingship and administration.[2] The vast majority of oracle-bone inscriptions (Shāng and Western Zhōu) are records of divination, inquiring about a wide variety of topics related to the king and royal family. Another form of early writing in China is attested in bronze inscriptions, which first appeared in the Middle or Late Shāng period. The earliest instances are simple inscriptions, recording the clan name or the name of the person for whom the bronze vessel was cast, presumably intended to be used in ritual activities, sacrifices to ancestors in particular. In the Western Zhōu period, bronze inscriptions were used to publicize the kings' virtuous policies and maintain their dominance, dealing with, for example, royal awards, investiture ceremonies, sacrificial rituals, and military campaigns.

From the Spring and Autumn period on, the purpose of writing became more secular. The appearance of practical inscriptions, such as seal and coin inscriptions is a good case in point. In the Warring States period, bamboo and wood manuscripts are the most abundant, and among them inscriptions of literary works make up the majority. At the latest in the middle and late Warring States period, writing was widely used for literary writing. Therefore, Chinese writing seems to have been invented for divination and ritual at the very beginning. After hundreds of years of development, it began to serve more secular functions, such as economy and literature.[3]

Early writing in Mesoamerica was most likely invented in the heavy context of ritual and display. The earliest examples of Zapotec texts (in Monte Albán Period I, by ca. 300-200 BC at the latest) are carved stones depicting sacrificed enemies with short hieroglyphic texts alongside. These probably specify who has been captured, slain or sacrificed. In Period II (ca. 200 BC-AD 250), the representative hieroglyphic texts are the so-called "conquest slabs" commemorating the places that were conquered by Monte Albán.[4]

With respect to the epi-Olmec texts, scholars have not yet reached a consensus

[1] For details see discussions in **2.5.2**.
[2] For details see discussions in **2.5.3**.
[3] For details see discussions in **5.3.1**.
[4] For details see discussions in **5.3.2.1**.

on the interpretation of these texts. The current interpretations mostly come from Justeson and Kaufman. The earliest known epi-Olmec text, the Chiapa de Corzo Sherd (ca. 300 BC), bears, according to them, a text recording part of a ritual. The longest epi-Olmec text, La Mojarra Stela 1 (ca. AD 157), again according to Justeson and Kaufman, mainly focuses on the rise of a new ruler to power and the ritual activities related to his inauguration and his reign. Other epi-Olmec texts, such as the Tuxtla Statuette (ca. AD 162), the Teotihuacan-style stone mask and the O'Boyle Mask, are also alleged to involve the preparations and performance of ritual practices.[1]

The earliest archaeologically dated examples of Maya hieroglyphic writing are 11 fragments with glyphic images discovered at Pinturas Sub-V of San Bartolo, dating to ca. 300-200 BC. Most of the glyphs on these fragments are at present undecipherable. Glyph pA7 on #6366 can be probably recognized as an early form of the sign for *ajaw* 'ruler, king, lord, noble'. The mural on the northwest corner wall of Pinturas Sub-1 of San Bartolo (ca. 200-100 BC) depicts a figure, probably a lord, sitting on a painted, wooden scaffold and a standing figure climbing a ladder to offer the seated figure a headdress. The glyphs between these two figures may refer to this act, a calendrical ritual after royal accessions. The last glyph of the text between the figures might be the *ajaw* sign. Therefore, Fragment #6366 probably records a similar topic. In the Classic Period, typical texts on public monuments primarily consist of the date of dedication, a series of historical events and royal activities, and the name and title of the protagonist. The events were thought to represent the biography of the ruler, and primary topics are birth, accession, the taking of war captives, the observance of various ceremonies and rituals, the birth of heirs to the throne, the involvement of various patron deities who oversee the events and provide protection or additional legitimization to the ruler, the ruler's death and burial, and the accession of the next successor to the throne.[2] Therefore, the preparations and performance of ritual practices and sacrifices are the main topics of early Mesoamerican writing. It is very likely that these texts were used for display to show the power of the ruler and to legitimize and facilitate the ruler's administration.

How was writing invented?

Another problem arising from the Chinese research tradition is that writing is treated as the end product of an evolutionary development by many scholars. From their perspective, only a few individual signs were invented in the earliest stage. The Neolithic graphic forms found in, for example, the Jiǎhú 賈湖 (ca. 7000-5500 BC) and late Dàwènkǒu 大汶口 Cultures (ca. 3100-2600 BC) are good examples. Then, after a long process of development, a complete

[1] For details see discussions in **5.3.2.2**.
[2] For details see discussions in **5.3.2.3**.

writing system finally took shape. However, the evidence suggests that writing is not the end product of a lengthy development but rather an invention, although it may take some time for this to develop into a mature system, such as the early writing of Mesopotamia and Egypt.[1]

Although the concept of multiple independent origins of writing enjoys an increasing popularity in academia, it is better to keep an open mind on the possibility of stimulus diffusion at the formative stage of writing. The diffusion of the idea of writing is not direct influence from early Mesopotamian writing but an idea that a visual system of signs could be used for recording language. For example, it is quite possible that the idea of writing was introduced indirectly by stimulus diffusion from Late Uruk Mesopotamia to Egypt via trading colonies or cultural exchange.

With respect to Mesopotamian or West Asian ("Near East") influence on early Chinese writing, the hypothesis of a diffusion of the idea of writing from the West is more credible than the hypothesis of an independent origin of Chinese writing. It is quite possible that China got the idea of writing through cultural exchange with the West, and the importation of the chariot is a good case in point. The Chinese chariot shows striking similarities to Western ones, and was invented several hundred years later than in the West. The possibility of independent invention of the chariot in these two areas is minimal. Therefore, the Chinese chariot appears to have been imported as part of the cultural exchange with the Eurasian Steppe during the period ca. 2000-1250 BC. During this cultural diffusion, Chinese may have received the idea of writing from the West. Moreover, the first appearance of Chinese writing (in the Early Shāng period, ca. 1600-1400 BC) coincides roughly with the importation of the chariot.

China of the Shāng and Western Zhōu periods may have had a historical connection with Preclassic Mesoamerica, and the similarities in the calendrical systems of China and Mesoamerica appear to be plausible examples. Calendrical data are an important component of early Chinese and Mesoamerican texts. There are structural parallels between the elements of the Chinese ritual calendar (the 60-day *gānzhī* 干支 cycle) and of the Mesoamerican ritual calendar (*tonalpohualli*). Although there is no tangible evidence at present for contact between China and Mesoamerica in the Shāng and Western Zhōu periods, there are indeed many similarities between these two areas. The possibility cannot be ruled out that there has been some kind of contact between them. But as to how direct those contacts were, and to what extent they made an impact on local cultural development, the answers will need to await further evidence and analysis.

[1] For details see discussions in **1.2.2**, Chapter 3 and **5.1**.

Key to the inscriptions translated

Oracle-bone inscriptions

B 1152 —— 59.
B 9975 —— 23.
B 11299 —— 63.
H 156 —— 53.
H 223 —— 24.
H 300 —— 40.
H 456 front —— 27.
H 667 front —— 42.
H 722 back —— 11.
H 787 —— 47.
H 1336 front —— 64.
H 1534 front —— 54.
H 1748 —— 28.
H 3171 front —— 06.
H 6194 —— 31.
H 6442 —— 17.
H 6482 —— 08.
H 6596 —— 44.
H 6626 —— 51.
H 6668 front —— 45.
H 6928 front —— 48.
H 6946 front —— 34.
H 7093 —— 46.
H 7894 —— 25.
H 9650 —— 55.
H 9666 —— 56.
H 10020 —— 18.
H 10133 back —— 12.
H 10136 front —— 07.
H 10228 front —— 60.
H 10246 —— 61.
H 10475 —— 26.
H 11506 —— 39.
H 12870 —— 43.
H 12921 —— 19.
H 13619 —— 29.
H 13626 —— 30.
H 13683 —— 35.
H 13689 —— 36.
H 13926 —— 58.
H 14002 —— 01.
H 14005 —— 57.
H 14034 front —— 33.
H 16696 —— 62.
H 19812 back —— 09.
H 19820 —— 41.
H 19858 —— 04.
H 19929 —— 10.
H 21016 —— 38.
H 22731 —— 02.
H 22536 —— 20.
H 23786 —— 21.
H 24125 —— 05.
H 28440 —— 22.
H 33036 —— 49.
H 33242 —— 14.
H 33243 —— 13.
H 36975 —— 52.
W 1265 —— 03.
Y 566 —— 32.
Y 1124 —— 37.
Y 1864 —— 50.
T 2241 —— 16.
Èrlǐgǎng 二裏崗 —— 15.

Bronze inscriptions

Càihóu *pán* 蔡侯盤	WJC 14519	——	<14>
Cài zǐ *yí* 蔡子匜	WJC 14881/ JC 10196	——	<13>
Dù hǔfú 杜虎符	WJC19177/ JC 12109	——	<17>
Gōngzhū (chú) zuǒguān *dǐng* 公朱左官鼎	WJC 2256/ JC 2701	——	<16>
Hán wáng Shìyě *gē* 邗王是埜戈	WJC 17076/ JC 11263	——	<12>
Jiàn *guǐ* 諫簋	WJC 5336/ JC 4285	——	<11>
Lì *guǐ* 利簋	WJC 5111/ JC 4131	——	<09>
Sànshì *Pán* 散氏盤	WJC 14542/ JC 10176	——	<05>
Shàn Zǐbái *pán* 單子白盤	WJC 14384/ JC 10070	——	<03>
Sì sì Bìqí *hú* 四祀邲其壺	WJC12429/ JC 5413	——	<08>
Xiǎochén Yú *zūn* 小臣艅尊	WJC 11785/ JC 5990	——	<06>
Yī *guǐ* 伊簋	WJC 5339/ JC 4287	——	<01>
Yú *jué* 盂爵	WJC 8585/ JC 9104	——	<10>
Zēng Zhòng *pán* 曾仲盤	WJC 14430/JC 10097	——	<04>
Zhēn *pán* 真盤	WJC 14435/JC 10091	——	<02>
Zhùkè *dòu* 鑄客豆	WJC 6135/ JC 4675	——	<15>
Zuòcè bān *yǎn* 作冊般甗	WJC 3347/ JC 944	——	<07>

Appendix 1: Chinese Dynasties

Xià 夏	ca. 2070-1600 BC				
Shāng 商	1600-1046 BC	Zǎo Shāng 早商 (Early Shāng)	1600-1300 BC		
		Wǎn Shāng 晚商 (Late Shāng)	1300-1046 BC		
Zhōu 周	1046-256 BC	Xī Zhōu 西周 (Western Zhōu)	1046-771 BC		
		Dōng Zhōu 東周[1] (Eastern Zhōu)	770-256 BC	Chūnqiū 春秋 (Spring and Autumn Period)	770-476 BC
				Zhànguó 戰國 (Warring States Period)	475-221 BC
Qín 秦	221-206 BC				
Hàn 漢	206 BC-AD 220	Xī Hàn 西漢 (Western Hàn)	206 BC-AD 25		
		Dōng Hàn 東漢 (Eastern Hàn)	AD 25-220		
Wèi 魏	AD 220-265				
Jìn 晋	AD 265-420	Xī Jìn 西晋	AD 265-317		
		Dōng Jìn 東晋	AD 317-420		

[1] Qín 秦 conquered Zhōu 周 in 256 BC. Emperor Zhèng 政 of Qín 秦 completed the unification in 221 BC.

Nán Běi cháo 南北朝	AD 420-589		
Suí 隋[1]	AD 581-618		
Táng 唐	AD 618-907		
Wǔdài 五代	AD 907-960		
Sòng 宋	AD 960-1279	Běi Sòng 北宋 (Northern Sòng)	AD 960-1127
		Nán Sòng 南宋 (Southern Sòng)	AD 1127-1279
Yuán 元[2]	AD 1271-1368		
Míng 明	AD 1368-1644		
Qīng 清[3]	AD 1636-1912		

[1] Suí 隋 was founded in AD 581, and conquered Chén 陳 in AD 589, completing the unification.

[2] Yuán 元 was founded in AD 1206, named Yuán 元 in AD 1271, and conquered the Southern Sòng in AD 1279.

[3] The Qīng 清 was founded in AD 1616, initially called Hòujīn 後金. In AD 1636, it changed its name to Qīng 清, and entered Shānhǎiguān 山海關 in AD 1644.

Appendix 2: Mesoamerican Cultural Periods

Preclassic (Formative)	ca. 2000 BC-AD 250	Early Preclassic	ca. 2000-1000 BC
		Middle Preclassic	ca. 1000-400 BC
		Late Preclassic	ca. 400 BC-AD 250
Classic	ca. AD 250-900	Early Classic	ca. AD 250-600
		Late Classic	ca. AD 600-900
Postclassic	ca. AD 900-1521	Early Postclassic	ca. AD 900-1200
		Late Postclassic	ca. AD 1200-1521

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