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Divination and Power

A Multiregional View of the Development of Oracle Bone Divination in Early China

by Rowan K. Flad

Divination is a ritual practice frequently employed as a source of social and political power. Elaborate forms of divination can be crucial to state control and have widespread influence. In ancient China as elsewhere, divination was the domain of ritual specialists who used their skills to mediate uncertainty, but the role that these specialists played in society differed considerably from one place to another. An examination of divination remains from the Neolithic, Shang, and Zhou periods of China suggests that more elaborate divination procedures are associated with bureaucratic institutions as a source of state power.

Divination, "the foretelling of future events or discovery of what is hidden or obscure by supernatural or magical means," is extremely widespread, possibly even universal. It is part of the "quest for certainty in an uncertain world" (Fiskesjö 2001, 55) and is used to help order experience and mediate the unexplained or unexplainable. It is also a crucial component of a society's ideological system—the "ideas, strategies, tractics and practical symbols for promoting, perpetuating or changing a social and cultural order" (Friedrich 1989, 301)—and a means by which authority is legitimized and maintained (Baines and Yoffee 2000; Demarest 1989). It is a source of social power that can be operationalized at different levels in a social system (DeMarrias, Castillo, and Earle 1996; Mann 1986).

Social status may be based on the restriction of access to certain categories of knowledge (Blanton et al. 1996; DeMarrais, Castillo, and Earle 1996; Fried 1967, 26; Giddens 1979, 188; Inomata 2001, 332; Lindström 1984; Spielmann 1998). Individuals and groups restrict access to knowledge through practical mastery of procedures that constitute crucial sources of authority (Tedlock 2001, 195; Bourdieu 1977, 4). The impact of this practical mastery is often strengthened by glorification of the potency and significance of the producers in public discourse. Divination demonstrates this practical mastery.

Where the practical mastery it involves is codified and institutionalized, ritual specialists control a body of knowledge and a social status that may be monopolized by elites and employed as a source of authority and legitimacy. Alternatively, specialist diviners may act outside formal hierarchical structures, representing a distinct realm of information and power that is separate from established social institutions. Specialist diviners as ritual specialists thus play a variety of roles similar to those of craft specialists in complex societies (Flad and Hruby 2007; Hruby 2007; Spielmann 1998).

Ritual specialists can be classified according to the nature of their relationship with those who control the alienation of the product of their labor (Clark 1995; Costin 1991; Flad 2004; Inomata 2001). The product (or, more appropriately, service) of a specialist diviner is the ability to "bring to light and so dispel the quarrels and grudges in the social group" (Turner 1975, 475) and to mediate uncertainty. Divination is therefore inherently a social act that helps ensure that society can continue to function. Specialist diviners' practices are both individual- and group-oriented. Where divinations involve one-on-one negotiations with individuals, diviners act independently, and the social impact of divination is at the level of individual or the small group. When divination is conducted on behalf of a group, a greater degree of social manipulation and political acumen is involved.

Divination of this sort is never independent of social norms and structures, and in strongly hierarchical societies it is often tied to or even commissioned by social leaders or elites. When diviners are formally "attached" to elites, their control over the results of divination is restricted and the political influence of divination can be substantial. Divination thus involves highly charged social and political acts, and therefore, whether they practice their craft independently or in a more socially embedded form, diviners restrict access to their activities.

One method by which diviners restrict access to their specialized field is through structured elaboration of their activ-

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ities. These procedures are more elaborate and codified where divination is closely tied to state-based structures of authority because it is only in relatively centralized and bureaucratized contexts that elaborate procedures can become standardized. In contrast, divination that is not closely associated with state power will be adapted to local concerns through negotiation, and different but broadly similar divination practices will coexist. Elaborate procedures need not be developed and will likely not be codified. Finally, on the peripheries of centralized societies in which divination is critical to state institutions, practitioners may not adhere to (or even completely understand) the procedures developed by the state diviners. Because of these associations, a systematic elaboration of divination procedures is expected to be observed archaeologically only in contexts associated with bureaucratic institutions.

We observe these patterns ethnographically in the case of the pyro-osteomancy of East and Northeast Asia, a set of practices that persisted over a long period of time, spread across a large area, and existed in both more and less elaborate forms. In addition, extensive archeological evidence from after 3500 BC[1] during the Chinese Neolithic and continuing through the Bronze Age reveals a similar relationship between standardized and elaborate divination practices and specialist practitioners who were linked to state institutions. The observed patterns allow us to establish that divination was a crucial source of state power during the late Shang Dynasty, ca. 1250–1046 BC,[2] and varied both chronologically and geographically throughout the prehistoric and early historic periods.

Ethnographic Accounts of Pyro-osteomancy

Osteomancy is the use of animal bones to predict the future or explain the unexplainable.[3] Animal bones are considered efficacious for augury because of the significant roles that certain animals play in human ideological and economic systems. The animals involved tend to be those that are important economically and/or ideologically (Fiskesjö 2001; Yuan and Flad 2005). Their bones are interpreted either in their natural state or after being burned or altered in some other way. Apyromantic animal-bone divination[4] involves bones that have been stripped of their meat but not burned. Pyro-osteomancy involves the interpretation of the cracks produced when a bone is heated. Pyro-osteomancy is conducted primarily with animal (deer, sheep, cattle, and pig) shoulder blades (sometimes known as pyro-scapulimancy) and the plastrons of turtles (pyro-plastromancy),[5] although other bones are sometimes used.

Ethnographic accounts of pyro-osteomancy provide a window into the various ideological and social systems associated with it. The practice is known primarily from the northern latitudes of Eurasia and North America, and the detailed descriptions of modern or recent-historic ethnographers reveal an apparent relationship between the elaboration of pyro-osteomantic procedures and the role of this practice in the associated social power structure.

For example, a description of pyromancy among the Reindeer Chukchee by Vladimir Germanovich Bogoraz-Tan (1975, 487) depicts a relatively simple procedure administered by an independent specialist diviner:

> The Reindeer Chukchee use for divination only the shoulder-blade of the domesticated reindeer. The animal, in most cases, is killed for this particular purpose. . . . The bone is taken raw, and the meat carefully cleaned from it. Then a small piece of burning coal is kept close to its center. It is fanned, by means of blowing or light swinging, till the bone is carbonized, and gives the first crack. After the performance, the burned place is immediately broken through and reduced to crumbs, but the bone itself is added to the common kitchen-stock used for trying tallow. . . . Usually one vertical crack is formed, with various ramifications above and below. . . .

Accounts of Mongolian scapulimancy generally parallel this description and describe a procedure that was both specialized and open to flexible interpretation and idiosyncratic variation. For example, early-twentieth-century Mongolian divination manuals discuss the interpretation of unscorched shoulder blades of sheep and pyromancy including scorching and the interpretation of cracks (Bawden 1994 [1959]). The scorching ceremony involves washing and purifying of the bone, incantations, and the placing of the bone in a fire (Bawden 1994 [1959], 120; Ling 1934, 136). Cracks on different parts of the bone portend different fates, and when outcomes are negative the manual suggests appropriate remedies, usually some form of recitation or ritual act. The color of the bone and the locations and directions of cracks indicate the general content of the divination. While it may appear that a manual of this kind provides an objective means for crack interpretation,

1. All dates are calibrated radiocarbon dates unless they refer to historical eras such as the Zhou Dynasty (ca. 1046–256 BC).

2. The year of the Zhou conquest was either 1046 or 1045, according to the Three Dynasties Project and the recent *Cambridge History of Ancient China*, respectively (see Falkenhausen 2006, 7, and Shaughnessy 1999, 23, for brief discussions and additional references).

3. It is possible and perhaps likely that, in addition to the osteomancy discussed here, other forms of archaeologically invisible divination were practiced in prehistoric China. Divination using yarrow sticks seems to have begun by the first millennium BC (Loewe 1981), and divining that relied on animal organs such as the hepatoscopy practiced in western Eurasia and other regions may have been important as well (Jastrow 1908; Pardee 2000).

4. This terminology and discussion follow a more detailed treatment of these issued in Keightley (1978*a*, 3–6). One form of ethnographically documented apyromantic divination in South China uses chicken leg bones. Sticks are inserted in the foramina of the bone shaft and the patterns are interpreted (see Li Yangsong 1982 and Tayanin 2000).

5. Turtle carapaces were also used occasionally.

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this is certainly not true. Diviners were specialists who were recognized as such. Their interpretations were based on a shared belief system, but it was the ability of the individual to make sense of the signs and to negotiate diviner-client relationships that made her or him a respected medium for communication with the spirit world.

An account of plastromancy in court Japan compiled by a Shinto scholar called Ban Nobutomo in approximately 1843 (Blacker 1981) describes a generally similar process, but the additional care taken in the preparation of the bones and the more formal procedure for reading the cracks reflect an intimate relationship between royal diviners and a bureaucratic system (pp. 67–68):

> The procedure . . . was to cut your turtle shell into a pentagonal form, and with your chisel to incise the figure known as *machi* on the back. You then lit a twig of *hahaka* wood, blew on it to make it red hot, and inserted the burning brand into the grooves, first down the vertical line and then along the horizontal ones. You went on doing this until there was a loud report, after which cracks of a particular pattern would be seen radiating from the crucial points of the figure. You then with your *samashidake* bamboos sprinkled water on the cracks, which you then, on the outer side of the shell, blacked with Indian ink so that they might be more easily visible. . . . [The *machi*] comprises five crucial points from which cracks can radiate. . . . The possible directions in which cracks can radiate . . . all . . . have names.

The reading of these cracks typically involved both positive and negative responses.

From these and other, more recent ethnographic accounts[6] we know that this form of pyromancy persisted in East Asia until recently and get a sense of the rigidly systematized protocols associated with court-based divination. These procedures fostered the coherent school of divination represented by a manual. The Mongolian and Chuckchee diviners both relied on procedures that allowed for a great deal more variation in the result. Even in the Mongolian case, in which manuals were prepared, the scope for interpretation by diviners was much broader. In contrast, Japanese court divination involved diviners who not only were recognized for their specialist positions but also collectively agreed upon correct procedures for divination and most likely conducted divinations as a group. In such cases, "negotiation among diviners" (Winkelman and Peek 2004, 19) replaced negotiation between diviners and clients (Wilce 2001, 193; Tedlock 2001, 194) as the most significant factor affecting the outcome.

Interpretation is critical to all known examples of divination. Critiques of the system-maintenance model used by Omar Moore (1969) to explain Naskapi pyromancy and its function in caribou-hunt decision making argue that divination is a social act "best described as a tool which is manipulated by individuals for multifarious reasons, adaptive or not" (Vollweiler and Sanchez 1983, 206). Divination cannot be simply explained away as a randomizing behavior that serves an adaptive function. As a component of popular religion and an aid to everyday decision making, divination is likely to vary substantially from one diviner to another. The personality and charisma of independent diviners are a significant part of the effectiveness of their prognostications (Winkelman and Peek 2004, 7). Consequently, the materials associated with independent divinations are highly variable from one context to another.

Contrastingly, divination that is institutionalized as part of state decision-making processes becomes systematic and standardized and may incorporate elaborate procedures that restrict the ability to divine "correctly" to those who share a body of esoteric knowledge. The material correlates of state-sponsored divination should therefore be relatively more elaborate and standardized than those of popular divination. In ancient China this fits the situation of oracle bone divination in the Late Shang period (ca. 1250–1046 BC), but in those contexts we also see evidence that contemporaries of the Shang attempted to acquire this source of power by adopting and adapting similar procedures (Flad n.d.). This resulted in a patchwork of varying divination practices across China during the Shang (ca. 1650–1046 BC) and Zhou (ca. 1046–256 BC) periods and the persistence of oracle bone use in peripheral regions long after it had mostly given way to other forms of divination in the Central Plains—the region of North China that is traditionally considered the core of Chinese civilization. The assemblage of oracle bones from Bronze Age China therefore provides a rich corpus of material which can be used to examine the emergence, consolidation, and dissemination of related divination procedures.

Oracle Bones in Ancient China: Archaeological Evidence

More than a century has passed since, as the story goes, Wang Yirong (1845–1900) identified the scratchings on so-called dragon bones as remnants of China's earliest known writing. The association of this writing with divination caused these artifacts to be called "oracle bones," and large caches of them were discovered at Yinxu, the Late Shang Dynasty capital near Anyang, Henan, during Academia Sinica excavations in the late 1920s and early 1930s (Li Chi 1977; table 1, fig. 1). In the subsequent 70+ years, huge strides have been made in the decipherment of oracle bone inscriptions. Although the origins of Chinese writing are still the subject of intense debate (Bagley 2004; Boltz 2001; Bottéro 2004; Keightley 1989, 2006*a*; Li et al. 2003; Venture 2002*a*, 2002*b*), this research has demonstrated how the script developed over time, the structure of the written language, and the variety of topics about which the Shang divined (Keightley 1978*a*, 1988, 1997, 2000; Qiu

6. For discussions of pyromantic divination among the Yi and Naxi of southwestern China, see Ge (1997), Lin (1964), and Wang Ningsheng (1987).

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Table 1. Basic Chronological Scheme for the Late Neolithic through the Bronze Age in China

Era and Central Plains Culture Phase	Approximate Dates BC	Contemporaneous Cultures Mentioned in Text
Middle Neolithic (Yangshao)	5000–3000	Fuhe
Late Neolithic/Chalcolithic (Longshan)	3000–2000	Ashan, Qijia
Early Bronze Age		
Erlitou I	1900–1700	Lower Xiajiadian,
Erlitou II	1700–1610	Siba, Luodamiao
Erlitou III	1610–1550	
Early Middle Bronze Age		
Erlitou IV	1550–1450	
Lower Erligang	1510–1425	
Upper Erligang	1425–1300	
Middle Shang	1425–1250	Baijiazhuang, Huanbei
Late Middle Bronze Age		
People's Park	1300–1200	
Late Shang		
Yinxu I–II	1250–1200	Sanxingdui
Yinxu III	1200–1125	
Yinxu IV	1125–1046	
Late Bronze Age		
Western Zhou	1046–771	Wazhadi
Springs and Autumns Period	771–476	
Warring States Period	475–221	Qingyanggong
Qin/Han	221 BC–AD 220	

2000). The inscriptions demonstrate beyond a doubt that pyromancy at Yinxu (ca. 1250–1046 BC) was focused on mitigating uncertainty and intimately tied to the Shang court and that the king acted as the chief diviner in the latest period. Late Shang divination was a crucial source of power for the Shang royal house, legitimizing the dynasty and placing the king and his diviners in a position of unassailable authority as those with control over the unknown (Keightley 1988).

According to traditional historiography, the Shang state emerged in the Central Plains as the second in a succession of three dynastic houses: the Xia, the Shang, and the Zhou. The oracle bone inscriptions mentioned above are the earliest corpus of contemporaneous historical documents, however, and the historicity of the pre-Yinxu phases of the Shang (i.e., pre-ca. 1250 BC) and of the Xia is still the subject of debate. Nevertheless, archaeological studies of sites throughout the Central Plains have demonstrated the existence of highly complex societies in this region from the third millennium BC. Some of these societies, including those associated with Erlitou and the pre-Yinxu sites associated with Shang culture, may have been incorporated into a state (Bagley 1999; Liu Li 2005; Liu and Chen 2003). By the time of the Shang finds around Anyang, the Shang state had entered the historical era.

Oracle bone scholarship was concentrated on divination in the Shang core because of the copious oracle bone finds around Anyang. Inscriptions have received much more attention then the uninscribed oracle bones even though the latter make up more than 90% of the known specimens (Song 1999, 392). A few studies have examined the shapes and production techniques of the marks on Anyang oracle bones (Hsü 1973, 1979; ZSKY 1983; Yu 1981), and there have been some discussions of oracle bone evidence from regions outside the Shang core (e.g., Jiang 2005; Lee 1981*a*, *b*, *c*; Luo 1988; LSWG 1989; Zhang 1996; Zhu and Shi 2001), but the most comprehensive attempts to examine the geographic and chronological breadth of this tradition in East Asia are out-of-date (Liu Yuanlin 1984; Yan 1978; but see Venture 2002*a*, 192–217, and Xie 1998 for recent treatments). More important, little effort has focused on how archaeological remains of divination might relate to the social structure of the associated communities and the processes that made this tradition so widespread and long-lasting (Araki 1999).

When considered broadly, the archaeological remains of oracle bone divination in East Asia show diachronic and spatial patterns that are consistent with the expectation that elaborate and standardized divination practices will be associated with official, state-sponsored augury. Lee (1981*a*, *b*, *c*), Liu Yuanlin (1984), Yan (1978), and others (see Keightley 1978*a*, 3, nn. 3, 16, 23–26) have summarized finds through the early 1980s. Here I supplement these discussions with recent discoveries and outline the pattern of development in this practice over several millennia.

Neolithic–Chalcolithic

Among the earliest evidence of pyromancy is a sheep or small deer scapula from Fuhegoumen in Balin Left Banner, Inner

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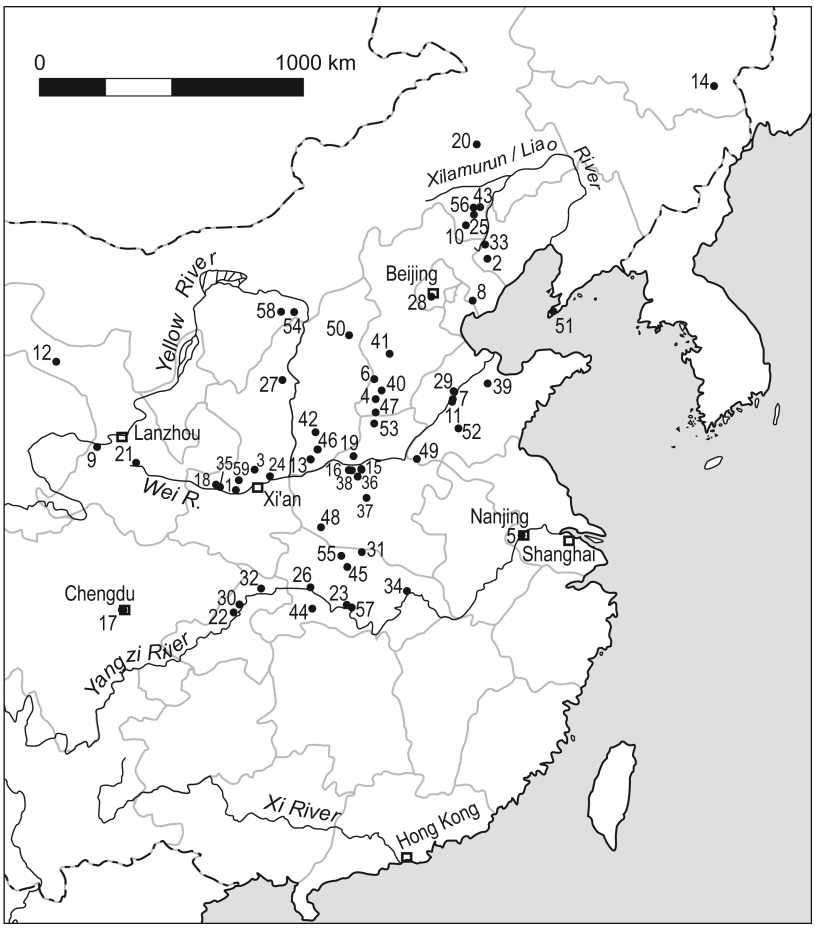

Figure 1. The locations of sites mentioned in the text (in alphabetical order): Andi (*1*), Anzhangzi (*2*), Beicun (*3*), Beiyingtai (*4*), Beiyinyangying (*5*), Caoyanzhuang (*6*), Chengziya (*7*), Dachengshan (*8*), Dahezhuang (*9*), Dashanqian (*10*), Daxinzhuang (*11*), Donghuishan (*12*), Dongxiafeng (*13*), Dongxianxian (*6*), Dongxing (*14*), Dongyin (*13*), Erligang (*15*), Erlitou (*16*), Family Residences of the Henan Academy of Chinese Medicine (*15*), Fangchijie (*17*), Fengchu (*18*), Fucheng (*19*), Fuhegoumen (*20*), Fujiamen (*21*), Fuqin Xiaoqu (*17*), Ganjinggou (*22*), Gejiazhuang (*6*), Huangweihui Qingniangongyu (*15*), Huimin Zhongxue (*15*), Jiangjun yamen (*17*), Jingnansi (*23*), Jiangoucun (*4*), Kangjia (*24*), Lianyushan (*26*), Lijaya (*27*), Liulihe (*28*), Liutaizi (*29*), Maliutuo (*30*), Maogoudong (*31*), Meihuaiqiao (*23*), Minggong Ludong (*15*), Mingyueba (*32*), Minshan fandian (*17*), Nanguanwai (*15*), Nanshangen (*33*), Panlongcheng (*34*), Qingyanggong (*17*), Qijiacun (*35*), Quliang (*36*), Shangpo (*37*), Shaochai (*38*), Shijia (*39*), Shimenzui (*26*), Taikoucun (*40*), Taixi (*41*), Taosi (*42*), Xiajiadian (*43*), Xianglushi (*44*), Xiaojialing (*45*), Xiaoshuangqiao (*15*), Xiaozhao (*46*), Xiapanwang (*47*), Xiawanggang (*48*), Xinzhongji (*49*), Yanshi Shangcheng (*16*), Yangbai (*50*), Yangtouwa (*51*), Yaowangmiao (*25*), Yinjiacheng (*52*), Yinxu (*53*), Yuanqu Gucheng (*46*), Zhaizita (*54*), Zhihuijie (*17*), Zhiwushan (*55*), Zhizhushan (*56*), Zhongba (*22*), Zhouliangyuqiao (*57*), Zhukaigou (*58*), Zhumazui (*59*). Sites numbered 6 are in Xingtai City, those numbered 15 are in Zhengzhou City, and those numbered 17 are in Chengdu City.

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Mongolia[7] (ZSKYNG 1964; fig. 2, *A*). This scapula has numerous intentional burn marks on its distal blade and is dated from a single sample of carbonized birch bark from a contemporaneous feature (F30) to 3321 ± 179 calBC (see table 2)[8]. This is one of several examples of Late Neolithic scapulimancy from China's Northern Zone. Others come from Zhaizita in Jungar Banner, Inner Mongolia, and Fujiamen in Wushan, Gansu (NWKY 1997; Venture 2002*a*, 196; 2002*b*; Xie 1998). To the south, a sheep scapula oracle bone was discovered at Xiawanggang, in Xichuan, Henan, from a Late Yangshao context[9] (HSWY and CLGBKHF 1989, 200). Despite these few early examples, pyromancy really takes hold only in the latter half of the third millennium BC. During this period changes in burial practices, building techniques, site size, settlement patterns, production practices, and personal ornamentation and the beginning of bronze use all suggest a widespread transition to organizationally complex social groups during the increasingly interactive Longshanoid horizon (Chang 1986; Liu Li 1996, 2005; Shao 2000; Underhill 1992, 1996, 1997).

Scapulimancy remains identified at Longshan sites fit the expected pattern for ad hoc divination by independent, itinerant diviners such as those documented among the Chukchee. Those from Kangjia in Lintong, Shaanxi, are representative. Excavations over two seasons recovered at least 20 deer, pig, and sheep scapulae used in pyromancy from Longshan deposits predating 2700 BC (table 2; SSKYKK 1988, 226; 1992, 22). These oracle bones are therefore relatively early in the Longshan horizon, but they share the general characteristics of the bulk of the Longshan oracle bones from the latter half of the third millennium. Bone surfaces were not pretreated, and no drill holes or chisel marks were made prior to burning (fig. 2, *B*). Divination marks, the localized scorching caused

7. Strangely, sometimes said to be located in Liaoning Province (see, e.g., Lee 1981*a*, 46, and Keightley 1978*a*, 4, n. 3).

8. The uncalibrated date for this sample is 4600 ± 110 ^{14}C yr BP, although an uncalibrated date of 4735 ± 110 is often given. This is based on the "true" or "Cambridge" half-life of 5,730 years, whereas convention calls for using the Libby half-life of 5,568 years. Using the "true" uncalibrated date would produce a date of 3505 ± 118 calBC.

9. The Yangshao culture dates to ca. 5000–3000 BC. The dating of this phase at Xiawanggang, however, is imprecise, and it is possible that the context from which the bones come should be considered Longshan (i.e., ca. 3000–2000 BC) in date (Venture 2002*a*, 196, n. 20; Araki 1999, 258).

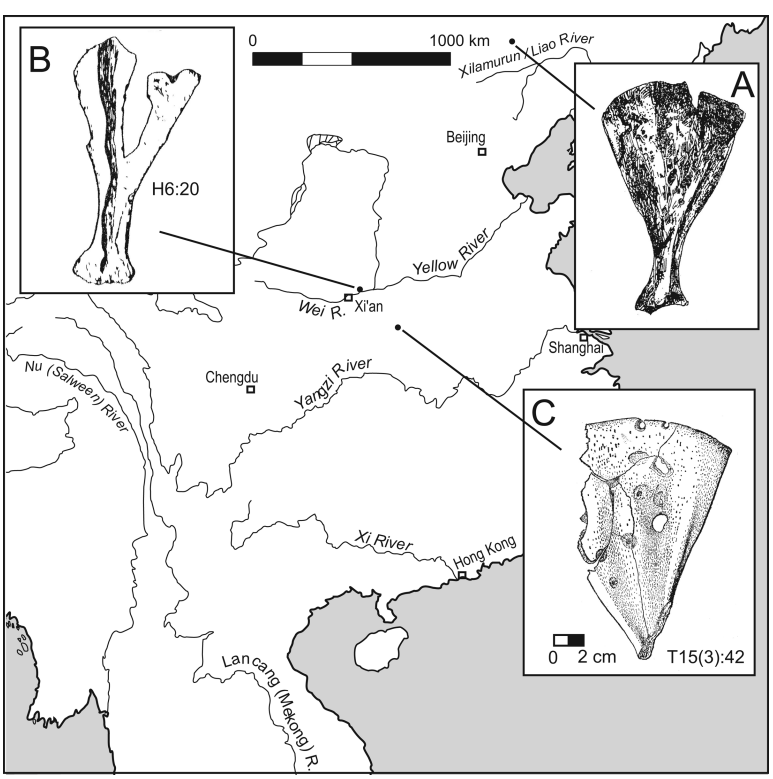

Figure 2. Representative divination remains and their sources from select Neolithic and Chalcolithic contexts. *A*, divination scapula from Fuhegoumen in Balin Left Banner, Inner Mongolia (after ZSKYNG 1964, pl. 1); *B*, Longshan-period oracle bone from Kangjia (after SSKYKK 1988, 225); *C*, pig scapula used in divination from Longshan levels at Xichuan Xiawanggang (after HSWY and CLGBKHF 1989, 263).

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Table 2. Radiocarbon Dates Used to Establish the Chronology and Date Ranges Cited

Site / Culture Phase	Uncalibrated Date BP (5,568 half-life)	Calibrated Date BC	Laboratory No.
Fuhegoumen	4,600 ± 110	3321 ± 179	
Kangjia	4,115 ± 75	2709 ± 120	BK-91040
Kangjia	4,130 ± 80	2716 ± 119	BK-91039
Yangbai	3,750 ± 70	2172 ± 109	ZK-2255
Yangbai	3,530 ± 70	1867 ± 91	ZK-2256
Yangbai	3,460 ± 70	1786 ± 89	ZK-S 2254
Dahezhuang	3,570 ± 95	1924 ± 131	ZK-15
Dahezhuang	3,540 ± 95	1887 ± 123	ZK-23
Erlitou I (early)	3,457 ± 30	1799 ± 59	ZK-5261
Erlitou I (late)	3,391 ± 33	1691 ± 41	ZK-5262
Erlitou II (early)	3,470 ± 37	1808 ± 56	ZK-5264
Erlitou II (late)	3,294 ± 35	1575 ± 42	ZK-5236
Erlitou III (early)	3,396 ± 39	1694 ± 46	ZK-5268
Erlitou III (late)	3,272 ± 39	1557 ± 47	ZK-5247
Erlitou IV (early)	3,355 ± 40	1639 ± 59	ZK-5255
Erlitou IV (late)	3,270 ± 32	1556 ± 43	ZK-5242a
Zhukaigou II	3,320 ± 70	1606 ± 76	BK-80028
Zhukaigou	3,220 ± 70	1509 ± 77	WB84-76
Zhukaigou	3,190 ± 85	1469 ± 97	WB84-77
Zhukaigou	3,420 ± 70	1734 ± 98	WB84-78
Lower Erligang (early)	3,261 ± 35	1548 ± 48	ZK-5371
Lower Erligang (late)	3,111 ± 55	1377 ± 60	ZK-5377
Late Luodamiao (early)	3,333 ± 36	1615 ± 56	ZK-5379
Late Luodamiao (late)	3,164 ± 38	1452 ± 33	ZK-5378
Upper Erligang (early)	3,140 ± 35	1425 ± 30	XSZ-145
Upper Erligang (late)	3,030 ± 38	1301 ± 65	ZK-5372
Panlongcheng		1510 ± 70	BA-97078
Xianglushi 6	3,290 ± 80	1584 ± 89	

Note: Calibrated dates have been recalibrated using the calibration curves of quickcal2005, version 1.4.

by targeted pyromancy, are scattered haphazardly on the bones.

Other Longshanoid contexts have similar remains, including sites as widely dispersed as Yangtouwa, in Dalian, Liaoning (ca. 2500 BC), Late Longshan sites in Hebei including Dachengshan in Tangshan, Xiapanwang in Ci Xian, Jiangoucun in Handan, Taikoucun in Yongnian, and Caoyanzhuang in Xingtai, and the Shandong sites of Chengziya in Licheng and Xinzhongji in Cao Xian (Lee 1981*a*, 47–51). Recent excavations provide similar examples from the late phase at Yangbai in Wutai, Shanxi (ca. 2000 BC; see table 2; SDLKZ, XDWG, and WXB 1997, 342), Taosi in Xiangfen, Shanxi (ZSKYS and SLXW 2003), Shangpo in Xiping, Henan (HSWKY, ZSWG, and XXWG 2004, 303), the Siba-culture (ca. 1900–1500 BC) site of Donghuishan in Minle, and the Qijia-culture (ca. 2200–1800 BC) site of Dahezhuang in Yongjing, Gansu, in strata dated ca. 1900 BC (table 2) (GSWKY 1995, 1062; GSWKY and JDBKY 1998, 25; ZKKYGG 1974), and the Longshan strata at Xiawanggang previously mentioned as the source of a possible Yangshao-era oracle bone (HSWY and CLGBKHF 1989, 263). The most complete is the blade of a pig scapula from Xiawanggang (T15[3]:42) with at least seven scattered divination marks (fig. 2, *C*). The oracle bones from these sites are scapulae of cattle, pig, sheep, and deer burned without pretreatment.

As bronze-using societies coalesced into larger and more integrated groups during the second millennium, divination started to take on greater social and political importance. During this Bronze Age we see a gradual shift toward elaborate, systematic, standardized divination practices.

Early Bronze Age

Early Bronze Age scapulimancy developed patterns begun in the Longshan period. While other lines of evidence suggest that political complexity increases significantly at this time, the emergence of elaborate divination procedures is gradual and haphazard. Trends toward elaboration become most pronounced in the Central Plains, but the earliest sites to contain oracle bones with noteworthy pretreatment are associated with the Lower Xiajiadian culture (ca. 2000–1500 BC) in the Northeast, the region in which the earliest oracle bones were found (Lee 1981*b*; Venture 2002*a*, 197). Several Lower Xiajiadian sites in Inner Mongolia and Liaoning, including Nanshangen in Ningcheng and Zhizhushan, Yaowangmiao, and Xiajiadian itself in the Chifeng area, have yielded pig scapulae and other pyromancy bones (Lee 1981*b*, 41–46). Diviners

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drilled hollows into the bones prior to burning to facilitate and control cracking. Likewise, excavations in 1996 at Dashanqian, Harqin Banner, Inner Mongolia, recovered a few oracle bones from Lower Xiajiadian contexts, all of which were drilled before burning (ZSKY, NZWKYCK, and JDK 1998, 816). One example is a scapula shaft with 37 densely crowded drill holes of different sizes (fig. 3, *A*).

Diviners at the relatively contemporaneous Erlitou-culture (ca. 1900–1500 BC) sites of the Central Plains only gradually and erratically adopted such procedures, but eventually the drilling of hollows took hold there as well. For example, at Erlitou, in Yanshi, Henan, divination in the Longshan tradition persisted throughout the Early Bronze Age. During the first of four Erlitou-culture phases (ca. 1900–1700 BC[10]), oracle bones include cattle, sheep, and pig scapulae (ZSKY 1999, 387; 2003, 70). These were burned on the flat, medial surface and have circular and oval marks of various sizes. None of them were drilled or chiseled before burning. In phase II (1700–1610 BC), during which house sizes became more differentiated, rammed-earth construction began, and bronze casting took hold, the deposits contain relatively more oracle bones, including cattle, sheep, and pig scapulae (ZSKY 1999, 121). These were still burned directly and not drilled or chiseled. The marks are all on the medial side of the blade and vary in size and shape. Phase III (1610–1550 BC) witnessed the emergence of palaces, three sizes of houses, and three sizes of tombs, all of which indicate a substantial increase in social stratification (pp. 238–39). Many archaeologists argue that a state society had developed by this point if not earlier (Liu Li 2005; Liu and Chen 2003). The number of oracle bones increases again, although most specimens are fragmentary. They once again come from cattle, pigs, and sheep and are burned directly on their medial surfaces without drilling or chiseling.

Finally, Erlitou phase IV (1550–1450 BC) levels contain large palaces, medium-sized and small tombs, and kilns, and oracle bones remain similar to those of the previous periods. Diviners used cattle, sheep, and pig scapulae and burned the bones directly without pretreatment, and the placement, size, and shape of the divination marks were inconsistent and unsystematic. Even the latest oracle bones from the site, which come from the subsequent Lower Erligang levels of the Early Shang era, continue the same general pattern. Scapulimancy at Erlitou does not seem to have been a significant state-sponsored activity despite the evidence for a highly politically complex society at the site.

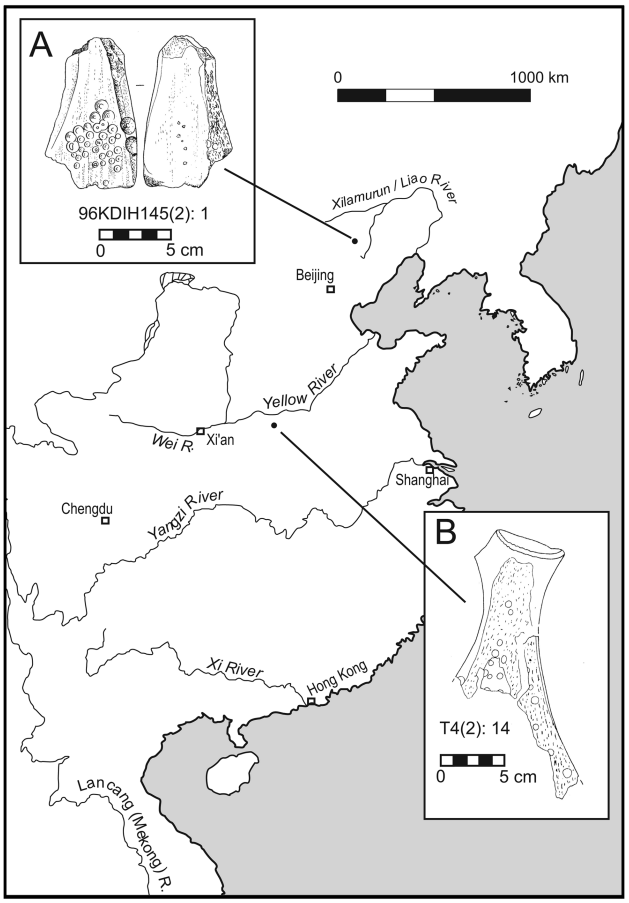

Figure 3. Representative divination remains and their sources from select Early Bronze Age contexts. *A*, oracle bone with dense set of drilled hollows from Dashanqian (after ZSKY, NZWKYCK, and JDK 1998, 816); *B*, cattle scapula with divination hollows from Shaochai in Gong Xian, Henan (after HSWY 1993*b*, 28).

Several sites show variability in Erlitou-culture divination. Xiawanggang, for example, yielded a single oracle bone in Erlitou levels, a pig scapula (H245:2) that was burned directly without pretreatment (HSWY and CLGBKHF 1989, 306). Similar heterogeneity is found at Xiaozhao in Yuanqu, Shanxi (ZSKYSG 2001, 222), and Shaochai in Gong Xian, Henan (HSWY 1993*b*, 21), where several cattle scapula fragments in Erlitou-phase-III contexts were drilled prior to burning—evidence of an increased level of elaboration and labor investment in divining procedures (fig. 3, *B*). Diviners elsewhere in the vicinity of Yanshi (i.e., near Erlitou) also began to pretreat oracle bones prior to burning during the Erlitou period. For example, at another site in Yuanqu named Gucheng, Erlitou levels contain a variety of oracle bones, including some pretreated specimens (ZLBK, SSKY, and YXB 1996, 153; ZLBK and SSKY 1997*a*, 15).

Farther afield, heterogeneity continues to prevail, with initial steps toward more complex pretreatment. To the west,

10. The radiocarbon dates used to establish this time span constitute a portion of a long series of dates from stratigraphically (and stylistically) sequential contexts (Zhang and Qiu 2005, 384). The sequence of dates has been used by members of the Three Dynasties Project to reduce the probability ranges through a "wiggle match" procedure. "Wiggle matching" involves relying on relative chronology to eliminate portions of the probability curve generated by the calibration of radiocarbon dates. The date ranges given here for each phase of the Erlitou culture and for the subsequent phases of the Early Shang period are therefore narrower than the potential ranges suggested by the radiocarbon dates alone.

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the transition toward pretreatment during the Erlitou period is observed in a four-phase sequence at Dongxiafeng Xia Xian (ZSKY, ZLB, and SSKY 1988, 28, 49, 147), for example, while to the east the contemporaneous Yueshi-culture (ca. 2000–1600 BC) site of Shijia in Huantai contains only unmodified sheep scapulae (ZSW, ZSB, and HXWG 1997). To the north, Erlitou-period levels at the site of Zhukaigou in Ejin Horo Banner, Inner Mongolia, include a significant number and unusual variety of oracle bones (table 2; Huang 1996; Linduff 1995; NWKY 1988; ZSKY 1991, 60). The 51 bones include not only scapulae of cattle (32), deer (11), pig (4), and sheep (2) but also a camel and a bear scapula. Some were pretreated and had their spines removed and holes drilled in them before burning. The next chronological phase of the Bronze Age, the Shang, saw more frequent but not universal adoption of more complex divination procedures.

Shang

By the end of the Shang era, most oracle bones were pretreated in highly standardized ways. Cattle bones increasingly became the main medium for divination and eventually were joined by turtle-shell fragments as the most common types of oracle bones. The changes are seen to different degrees at sites throughout the Central Plains.

Early to Middle Shang sites display pretreatment of oracle bones but little standardization of procedures. At the Shang walled site at Yanshi (Yanshi Shangcheng), northeast of Erlitou, for example, we find only traces of more elaborate divination procedures in Early Shang remains. The site dates to ca. 1600–1400 BC (ZSKY 2003, 218), its earlier remains overlapping with Erlitou phases III and IV, and it contains numerous oracle bones—mostly sheep scapulae that were burned directly and not pretreated (ZKYLHWGG 1984; ZSKYHDEG 1995). A few pretreated cattle scapulae have also been found at the site (ZSKYHDEG 1999). Excavations in the city of Zhengzhou show clearer evidence of increasing use of cattle bones and increasing elaboration in the remains from Erligang, the type-site for the Early Shang culture. Here cattle scapulae are the most common type of divination bone, although pig and sheep scapulae are also used, as are a few deer and dog scapulae, cattle limb bones, and turtle-shell fragments (HSWWG 1959, 37). In the Lower Erligang phase (ca. 1510–1425 BC), sheep, pig, deer, and dog oracle bones are found, and they are usually not pretreated (HSWKY 2001, 175; 2003, 11). This pattern is consistent at many localities in the Zhengzhou area. Examples from around Zhengzhou include those from the pre-Erligang Late Luodamiao culture (ca. 1680–1510 BC), the slightly later Lower Erligang phase at Huangweihui Qingniangongyu (HSWY 1993*c*, 207, 214), the Lower Erligang levels at Huimin Zhongxue (HSWY 1993*a*, 115), Erligang itself (HSWWG 1959, 37), the Family Residences of the Henan Academy of Chinese Medicine site (HSWY 1993*a*, 131), and Lower and Upper Erligang contexts at Minggong Ludong (ZSWKY 2002, 819, 823).

The voluminous report on these sites (HSWKY 2001) demonstrates that some oracle bones were already being pretreated during early phases of activity in the Zhengzhou region. For example, a cattle scapula fragment at Nanguanwai in levels dating to the Luodamiao culture (1680–1510 BC) was split and drilled before use (ZSWKY 2002, 136; fig. 4, *A*). A contemporary turtle plastron fragment (CST85[4]:123), one of the earliest examples of the use of turtle shell in pyromancy, was not altered or drilled before burning. Nanguanwai in Zhengzhou contains the largest collection of oracle bones from any site in the region; Lower Erligang contexts included 106 specimens and Upper Erligang contexts 111. Most of the former were unmodified (ZSWKY 2002, 681–82), while the latter included many more specimens that were both flattened and drilled prior to burning (pp. 834–36). Scapulae from cattle, pig, sheep, and deer were used. Most cattle scapulae and all 37 turtle plastron fragments were drilled prior to burning, whereas the vast majority of the bones of other taxa were burned directly. The discovery of a bronze drill at Erligang provides the earliest evidence of the tools used in the pretreatment process (HSWWG 1959, 37; Lee 1981*b*, 51; Liu Yuanlin 1984, 263). The drill marks on the cattle scapulae and turtle plastrons from this phase are all single circular holes that could have been made with such a drill.

During the next period, the People's Park phase (ca. 1300–1200 BC), a new technique for producing hollows was introduced. In addition to split cattle scapulae with circular drilled hollows (HSWKY 2001, 926, 948), we see examples at Mingong Ludong of turtle-shell fragments (one plastron and one carapace) marked with parallel rows of marks (fig. 4, *B*; ZSWKY 2002, 827). Similarly modified turtle plastrons were discovered at the People's Park site itself (HSWKY 2001, 926). These "double" marks consist of a shallow, circular drilled (or chiseled) hollow with a long, deep chiseled groove attached to the side of it. When the shallow hollow was burned, it produced a crack along the length of the chiseled groove and a second crack extending underneath the hollow. This pretreatment method became standard in the Late Shang. Its occurrence in the People's Park phase in Zhengzhou may mark a change in the significance of divination, perhaps as it became involved in Shang politics as a source of power for the ruling elite.

The method of divination did not change everywhere or instantaneously, however. Oracle bones discovered at the Baijiazhuang-culture-phase (ca. 1400–1250 BC) Middle Shang site of Xiaoshuangqiao just northwest of Zhengzhou consist of fragments of sheep scapulae, most of which were not pretreated (HSWKY and JDK 1996, 50), although one specimen (90ZSX:150) may have had holes drilled before burning (HSWY 1993*d*, 248). Similar patterns at Fucheng in Jiaozuo, Henan, demonstrate a high degree of variability in divination at this time (Yuan and Qin 2000, 532).

There appears to be some correlation at this time between animal taxa and pretreatment procedures. At sites such as Shaochai cattle scapulae were extensively modified while

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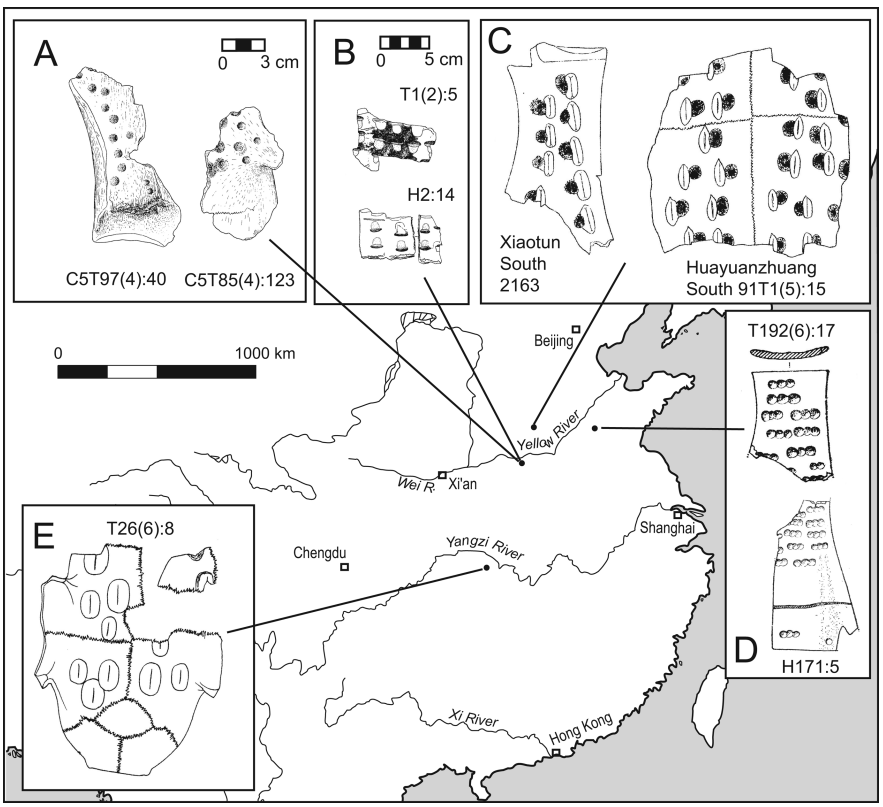

Figure 4. Representative divination remains and their sources from select Middle Bronze Age (Shang-era) contexts. Scales provided where available. *A*, cattle scapula and turtle plastron used as oracle bones at Nanguanwai (after HSWKY 2001, 136); *B*, turtle plastron fragment (T1[2]:5) and carapace fragment (H2:14) with double divination marks from People's Park phase (period III) of Erligang in Zhengzhou (after ZSWKY 2002, 827); *C*, cattle scapula (Xiaotun South 2163) and turtle plastron (91T1[5]: 15) oracle bones from Yinxu at Anyang with double divination marks (after Liu Yiman 1997); *D*, oracle bones with triple-drill divination marks from Yinjiacheng in Sichui, Shandong (after SDLKJ 1990, 252, 277); *E*, divination plastron fragments from Xianglushi (after HSQGK 1995, 25).

sheep scapulae were not (HSWY 1993*b*, 40). This suggests that although cattle scapulae were more difficult to burn because of their robusticity, their importance in rituals and sacrifice justified the extra effort. The elaboration invested in divination using cattle bones marked the beginnings of an important distinction within the practice of pyromancy. During the Early Shang period, cattle bones, which were pretreated in a particular way, may have been accorded higher status and considered the purview of a particular group of diviners or at least used for distinctive purposes. In level II at Shaochai (the earliest phase at the site that includes oracle bones) cattle scapula fragments were not pretreated, but pretreatment emerged during Erlitou phase III.

Other sites around Zhengzhou repeat these patterns, although there was a great deal of variation during the Lower Erligang phase. Quliang in Xinmi, Henan, for example, has evidence of heterogeneous divination practices with incipient elaboration (BDKWX 2003). To the west and north, the Erligang levels at Gucheng in Yuanqu demonstrate similar trends (ZLBK, SSKY, and YXB 1996, 204–5, 241–42; ZLBK and SSKY 1997*a*, 24–26; 1997*b*). Nearby Dongyin in Xia Xian, Shanxi, contains modified cattle scapula oracle bones with circular drilled hollows of varying size and depth in Upper Erligang contexts (SSKY and XXB 2001).

Sites outside the Central Plains further show that divination was heterogeneous throughout this period in other regions as well despite the trend toward elaboration. To the north in Hebei, several sites from the Early Shang period contain oracle bones, including Beiyingtai in Handan, with seven Early Shang cattle and pig scapula fragments (HSWY, HSWG, and FWG 2001, 141), Gejiazhuang in Xingtai, with Erligang-period drilled cattle scapulae (HSWY 2000, 981), and Taixi in Gaocheng, with a high degree of variation among 494 oracle bones (mostly cattle, pig, and turtle) from Erligang-era pits and burials (HSWY 1985; Li and Tang 1982).

To the west, in Yao Xian, Shaanxi, oracle bones in Early

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Shang levels at Beicun are cattle scapula fragments that were cut in half through the shaft, polished, and drilled before burning. The hollows are circular with rounded bases and lack attendant chisel marks (SSKYSZS and BDKSZS 1988, 14). Far to the south, the important Erligang-phase walled site at Panlongcheng in Huangpi, Hubei, contains several drilled cattle scapulae in period V and VII[11] contexts (HSWKY 2001, 135, 296). Some are found in pits and others, such as the specimen PWZT82H7:13, found inside a bronze *jue* vessel, in more unusual contexts. These specimens fit the Upper Erligang pattern, but, as Venture (2002*a*, 199) has pointed out, their small numbers suggest that pyromancy did not play a significant role in the expansive Shang state during the Erligang period.

The heterogeneity of media and practice exhibited by the oracle bones from the Early Shang era suggest that pyro-osteomancy was not yet a particularly important source of power for the Shang rulers of the time. It was only in the Late Shang era that this practice became a critical component of political activity.

In the Late Shang era there is evidence for systematized, state-controlled divination involving primarily scapulae of domesticated cattle and plastrons of turtles. Other taxa used earlier were no longer employed, even though deer, for example, continued to be captured in large numbers by Shang hunters, sometimes in highly politicized and ritualized contexts (Fiskesjö 2001, 53). Turtle shell in particular became an increasingly significant medium, and inscriptions document its acquisition from affiliated polities as tribute (Chang 1975, 217; 1980, 236; Hu 1945, 35). The vast majority of oracle bones from this period come from sites in and around the city of Anyang. During this period the double mark was firmly institutionalized (fig. 4, *C*). The deep elongated groove associated with this mark became more oval (Hsü 1973, 1979) and often had a circular or fingernail-shaped hollow on its shoulder. This attendant hollow was drilled in some cases, chiseled in others, and often the result of chipping or flaking away of the bone in an area that was burned directly. The double-hollow principle pervades the Late Shang era and points to an institutionalized and politically charged activity (Liu Yiman 1997). This procedure was used by diviners employed by the royal court, many of whom were named in oracle bone inscriptions (Jao 1959).

Divination at Anyang and other Shang sites was not, however, restricted to the king and his entourage. Venture (2002*a*, 203–8) identifies three categories of individuals involved in divination using bones: the group of named diviners associated with the king, diviners who worked with or for the nobles, and diviners who served the public's need for prognostication. Archaeologically, this difference is manifest not only in the presence or absence of inscriptions but also in the degree of elaboration involved in the preparation of the bones. Whereas the bones used in the Shang court or by royal diviners were carefully thinned and polished and contained symmetrical lines of paired divination hollows and attendant chisel marks, those used by nobles and presumably those used by diviners attending to the needs of the public were less carefully prepared. Examples of oracle bones associated with popular divination include those with rudimentary preparation found outside of the palace areas at Xiaotun and perhaps those discovered in association with the bronze foundry at Miaopu North (Liu Yiman 1997, 60), although the foundry divination may have been royal rather than popular in orientation (Venture 2002*a*, 207).

The coexistence of multiple ritual systems or multiple versions of a ritual system in a single society and their association with different social strata are not unique to this context. Historical examples abound, and archaeological examples are known as well. For instance, in the Late Classic Naco Valley of southern Mesoamerica, at least two systems coexisted and were linked to different status groups (Urban and Schortman 1999, 135). One developed locally over a long period of time while a second, more elaborate one seems to have been monopolized by those in power. "Control over these religious practices may have helped legitimize claims to political preeminence by one faction in the . . . polity" (p. 136). A similar argument can be made for the use of oracle bone divination at Yinxu. A codified version of the practice was one component of an elaborate ritual system that expressed the exclusiveness of the Shang elite and their monopoly of an important form of ritual knowledge.

Yinxu is by no means the only Late Shang-era site containing oracle bones. Daxinzhuang in Ji'nan, for example, has one of the most significant Shang-period collections outside of Anyang (SDLKZ, SSWKY, and JSB 1995; SDL 1995). Specimens were discovered in all phases of activity, and they show strong similarities to those from the Shang core. The analysts divide the assemblage into five stages. In stage I only mammal scapulae, including deer, pig, and sheep, were used. The spine on the scapula was removed and small circular divination hollows were drilled. Stage II used deer, sheep, and cattle scapulae, and they were small and thinned, with large circular hollows drilled in their blades. These two correspond with phases I–III of the Shang remains at the site, which, in turn, correspond to the Upper Erligang–Middle Shang pre-Yinxu phases of the Shang era (i.e., ca. 1425–1250 BC[12]). Stage III was the first to include turtle shell—mostly plastrons but also some carapaces. Scapulae still dominated, however, and they were mostly from cattle. The drilled turtle-shell fragments also had chiseled hollows on the edges of the drill marks.

11. Through ceramic seriation and correlation these two phases have been dated to the late part of the first subphase of Upper Erligang and the late part of the second subphase of Upper Erligang respectively. In terms of absolute dates, that would put these two contexts in the 1400–1300 BC range, although a slightly earlier absolute date for phase V is suggested by the one AMS radiocarbon date from this phase, which is provided as a calibrated date in the publication and therefore not recalibrated in table 2 (HSWKY 2001, 444).

12. All the Daxinzhuang dates are estimated on the basis of the correspondence of the material culture with that of other sites. No published radiocarbon dates are available to compare with this proposed sequence.

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This documents a shift to a more elaborate procedure that characterizes the peak of oracle bone divination during the Yinxu phase of the Shang. During stage IV, turtle plastrons were most common and cattle scapulae made up most of the rest. The scapulae were painstakingly prepared—their spines were removed and the bones polished prior to divination. Large drill holes combined with chiseled hollows are found on all of them. The chisel marks come in several different shapes. Only a very few specimens have only a drill mark or only a chisel mark. In stage V almost all the oracle bones are turtle plastrons, and more of them contain only chisel marks than previously. Diviners no longer rigorously followed a systematic divination program as they seem to have done in earlier stages. These three stages correspond with the Shang phases IV–VII.

Elsewhere in the east, Late Shang remains at Beiyinyangying in Nanjing (NB 1993) and Yinjiacheng in Sishui (SDLKJ 1990) lack evidence of elaborate divination procedures, but several specimens at the latter site have combinations of three circular drill marks (fig. 4, *D*). Although one (T192[6]:17) is said to date to the Shang era and another (H171:5) to the Zhou, they are probably both Shang in date, and the curious triple drill mark may be an example of an attempt to appropriate the Shang divination process by local diviners who were aware of but not trained in it.

On the other side of the Central Plains, several Late Shang-era sites in Shaanxi contain oracle bones similar to those in Upper Erligang contexts. These include Beicun (SSKYSZS and BDKSZS 1988), Zhumazui in Liquan (BDKSZ and SSKY 2000), Lijiaya in Qingjian (Zhang and Lu 1988, 53), and Andi in Wugong (SSKY 1993, 21). Only in the early Western Zhou period did oracle bones in this region adopt some aspects of Late Shang practice. The persistence of earlier traditions in Shaanxi suggests that divination was not as closely tied to the emerging state apparatus as it was in the Central Plains.

In the south, the emergence of oracle bone divination involved creative adaptation. For example, at Xianglushi, on the Qingjiang River near Yichang, Hubei, three levels contained collections of oracle bones (HSQGK 1995). The earliest, contemporary with the Early Shang, is level 6, which yielded three turtle plastron fragments with oval chisel marks containing chiseled lines (fig. 4, *E*; table 2). The second is level 5, from the Middle–Late Shang period, containing 13 oracle bones: 12 turtle shells and 1 fish operculum fragment. All have drill marks (some oval, some rectangular), and two have chisel lines within the hollows parallel to their length. Finally, level 4 at the site is Terminal Shang or Western Zhou (i.e., mid-eleventh-century BC) in date and contains 17 excavated examples and 7 similar specimens from the surface. Five are turtle-shell fragments while the other 19 are fish opercula. All are marked with rectangular hollows except one that has oval ones. The frequency of fish oracle bones at this site is particularly interesting, although not unique (Jiang 2005). Other sites in the Middle Yangzi, including Meihuaiqiao in Jiangling and Zhouliangyuqiao in Shashi, contain mostly turtle shells among the divination remains (He 1991). Similarly, turtle shells, primarily plastrons, are the main medium for pyromancy in the Chengdu region in Sichuan during the Shang and Zhou eras (Luo 1988). The earliest examples are Shang-period remains from level 5 at Fangchijie in Chengdu, associated with the Sanxingdui culture (CSBK and CSWKY 2003).

In between the Middle Yangzi region around Xianglushi and the Upper Yangzi sites near Chengdu lies the Three Gorges section of the Yangzi River, where additional Shang- and Zhou-period oracle bones have been discovered during the past decade. Zhongba, a prehistoric salt production site in Zhong Xian, Chongqing, contains the earliest evidence of pyromancy from this region (Chen 2004; Flad 2004, 2007; Flad et al. 2005; SSWKY and ZWBG 2001; Sun 2003*a*, 2003*b*). The site's stratigraphy is divided into three phases: phase I dates to approximately 2500–1750 BC, phase II to ca. 1630–1210 BC, and phase III to ca. 1100–200 BC (Flad 2005, 234; Wu et al. 2007). A small burned plastron fragment from phase II is the earliest of these oracle bones, and they become more common in the course of phase III.

Zhou, Qin, and Han

The southern divination remains just mentioned support a point made by Li Ling (2000, 223), who comments that although the oracle bone finds dating to the Western Zhou (ca. 1046–771 BC) are not as numerous as those from the Shang, they are more widespread and are found in the regions of all the historically important Zhou capitals and the various enfeoffed states (such as Jin, Yan, and Chu) in addition to more peripheral regions (see also Li Xueqin 1981). Many of the Western Zhou sites with oracle bones continue traditions that began during the Shang era, and in North China the hollows used for pyromancy retained the essential character of Shang specimens. For example, plastrons excavated at Qijiacun in Fufeng, Shaanxi, on the Zhou Plain, have hollows that were prepared similarly to those on Shang oracle bones from Yinxu (see Cao 2002 and Li Ling 2000, 220–24, on Western Zhou finds). They include both an elongated groove and a burn mark on the side of it. Likewise, dozens of divination plastrons at Liulihe near Beijing contain double marks (LK 1997, 11; fig. 5, *A*). In these cases the chiseled grooves are narrow rectangles, and the attendant hollows are also rectangular. The rectangular double-hollow form is directly developed from Yinxu-style divination marks. Three of the oracle bones at this site are inscribed, a trait that further demonstrates their similarity to Late Shang examples. Other Liulihe examples have hollows that are representative of the most common Western Zhou marks—circular hollows of a standard size, around 1.2 cm in diameter, each containing a single chiseled line to facilitate bone cracking as does specimen G11H33:1 (fig. 5, *A*; BDK and BSWY 1996, 11). Nearly identical specimens are found at sites near Luoyang in Henan (LSWG 1989) and Dongxianxian in Xingtai, Hebei (HSWY 2002, 216).

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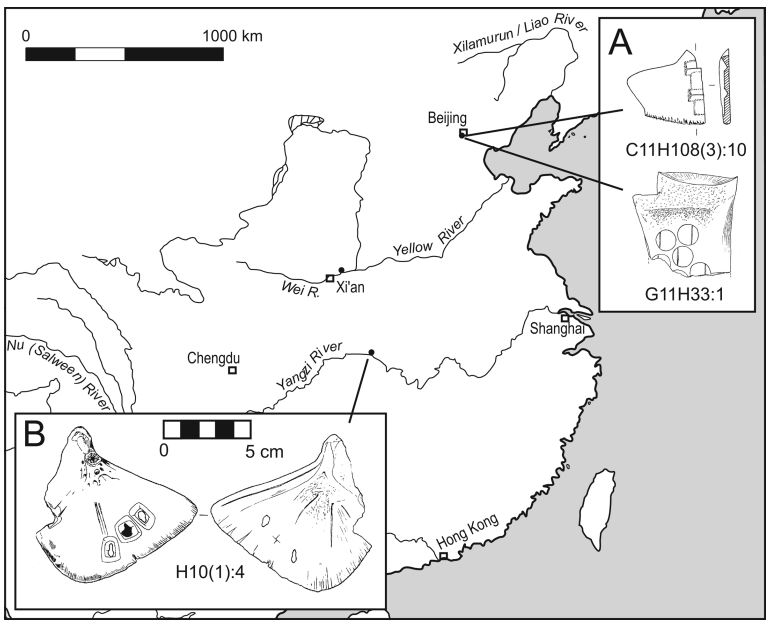

Figure 5. Representative divination remains and their sources from select Late Bronze Age contexts. *A*, Western Zhou oracle bones from Liulihe, one with double rectangular hollows and one with circular hollows and incised lines, scale unavailable (after LK 1997, 11; BDK and BSWY 1996, 11); *B*, fish operculum used as oracle bone from Shimenzui in Zigui, Hubei (after JDBKYZ and HSWKY 2004, 433).

Other Western Zhou sites, including Liutaizi in Jiyang, Shandong, have yielded oracle bones with more diverse hollows (SSWKY 1996, 21). Lee Hyeong Koo (1981*a*, 42) has argued, following Shi Zhangru (Shih 1954), that oracle bone use is especially persistent along the east coast in the area associated with the historical ethnonym "Dongyi," but it is clear that oracle bone use persisted both in the Central Plains and in various peripheral regions including southern Henan, at Xiawanggang (HSWY and CLGBKHF 1989, 331), and to the northeast, in Upper Xiajiadian (ca. 1000–300 BC) contexts at Anzhangzi in Lingyuan, Liaoning (LSWKY 1996, 209). The practice was widespread and still involved relatively elaborate procedures. Some diviners remained attached to leaders of various states, but the manipulations initiated by the Shang were no longer uniform or ubiquitous even in these contexts. Zhou diviners seem to have been relying as much on the power associated with a past tradition as they were on the practical mastery involved in maintaining a monopoly on divining practices.

In general, pyromancy during the Zhou era was less prominent than other emerging forms of divination such as the counting of yarrow sticks (Loewe 1981). There are no huge caches of oracle bones at Zhou sites that compare with the Shang collections at Yinxu, but it is evident from its elaborate bone preparation and limited variety of techniques that pyromancy in the central Zhou states remained closely tied to political power. Zhou-period pyromancy focused almost exclusively on turtle shell (Venture 2002*a*, 213; Zhao 1985). The emphasis on turtles in the Yellow River Valley continues a trend that started during the Late Shang and may reflect an increasingly robust body of symbolism relating to longevity, strength, and the prestige associated with older divination practices (Allan 1995; Li Ling 2000, Loewe 1981, 46; 1988, 87; Venture 2002*a*, 216). Turtles were symbolically important, and their plastrons were conducive to the structured and elaborate pyromantic traditions that had their roots in the Shang.

The prestige associated with plastromancy specifically and pyro-osteomancy in general is further reflected in the increasing evidence for this practice in regions distant from the Central Plains. Some of the larger collections of oracle bones from this period have been discovered at sites in Hubei, Chongqing, and Sichuan. In the Middle Yangzi River Valley (modern Hubei), oracle bones have been found at several sites including Jingnansi in Jiangling (JDB and BDK 1989, 690), Zhouliangyuqiao in Shashi (Peng 1986), and other locales in the Xiangfan area including Maogoudong in Zaoyang (XSB 1988, 16), Xiaojialing in Yicheng, and Zhiwushan in Xiangfan (Zhang Changping 1996). The Zhou-era oracle bones of the Xiangfan region included turtle plastrons with long, rectangular hollows with curved corners and incised lines on the hollow-bases as well as primary and attendant hollows that were rectangular or square on preflattened areas of scapulae. These patterns show obvious connections to the

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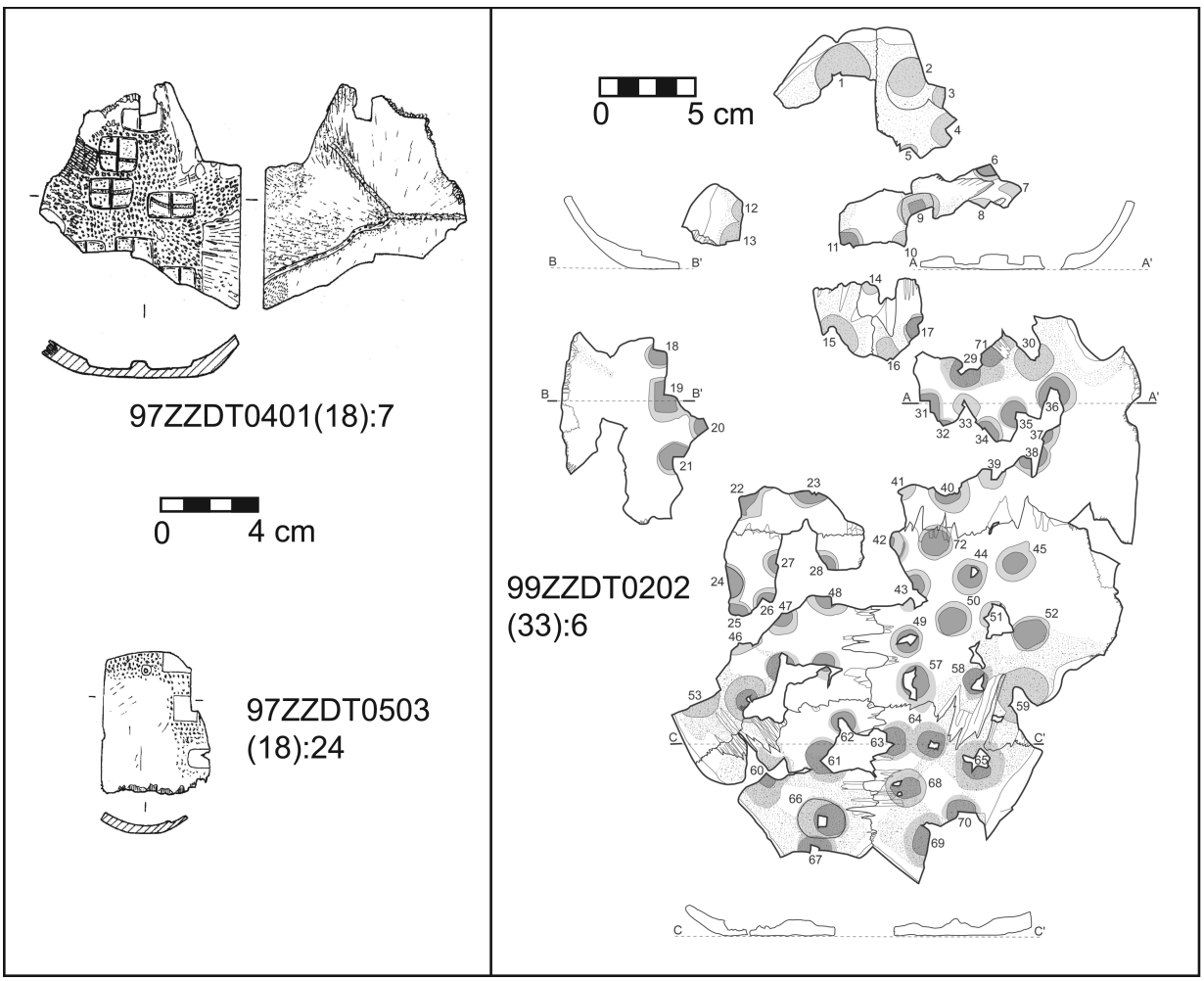

Figure 6. Oracle bones from Zhongba (after SSWKY and ZXBG 2001, 601, and Flad 2004, 753). Individual divination marks on specimen 99ZZDT0202 are numbered for analysis.

traditions of divination that developed in the Yellow River Valley.

In the Three Gorges area, several sites have oracle bones in Zhou-period strata, among them Shimenzui and Lianyushan in Zigui (JDBKYZ and HSWKY 2004, 432; ZKKYCSG 1961, 233), Ganjinggou in Zhong Xian (SCLWBWWK 1962, 417), and Maliutuo in Wuliang (FDK 2001, 144–45). At Maliutuo, one of the few late Bronze Age noncemetery sites excavated in the region, excavations recovered many turtle plastrons and large fish opercula with divination marks.[13]

The largest collection comes from Zhongba, where over 180 oracle bones from this period have been unearthed (fig. 6; SSWKY and ZWBG 2001, 601). The two published bones are both fragments of turtle plastrons, as are the majority of unpublished fragments (Flad 2004). These plastrons have hollows of various shapes, including rectangular ones with short incised grooves perpendicular to their length (fig. 6, *A*). At least one was a fish operculum fragment with a single chiseled hollow, which complements finds from other sites in the region with evidence of operculimancy such as Xianglushi and Shimenzui (fig. 5, *B*; HSQGK 1995, 15; JDBKYZ and HSWKY 2004, 445). Plausibly the use of fish may relate to the important role that fishing played in subsistence in the region (Flad 2005), but claims of the dominance of fish-bone divination are not supported by the data (contra Jiang 2005, 59). Most of the earlier specimens at Zhongba have divination marks that are circular and seem to have been the result of

13. The authors of the report suggest that the opercula are sturgeon (Family *Acipenseridae*), but sturgeon do not have bony opercula. No images are available with which to assess their identification. There is, however, no reason to doubt the possibility that fish bones were used in pyromantic divination at the site.

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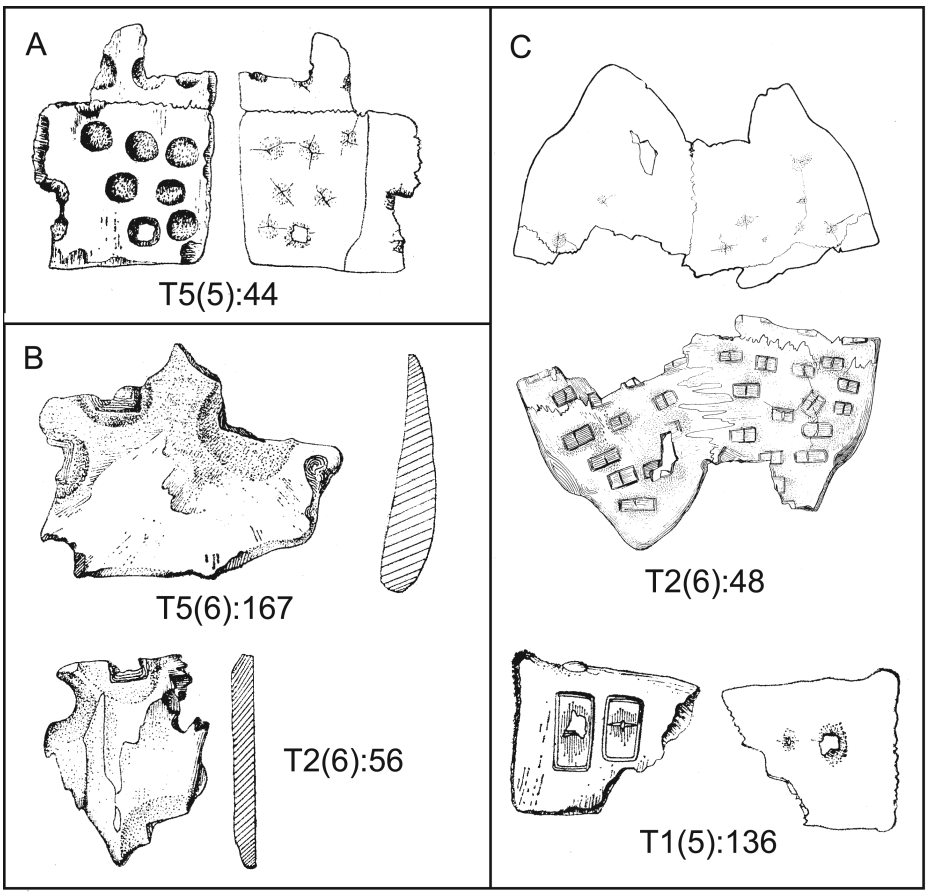

Figure 7. Oracle bones from Zhihuijie, one-quarter scale (after SDB and CSB 1987). *A*, turtle plastron fragment with circular hollows; *B*, plastron fragment with rectangular hollows within circular depressions; *C*, plastron fragment with rectangular hollows containing horizontal incised lines.

burning directly onto the dorsal surface of the plastron without the initial preparation of hollows. When hollows were prepared, they were circular and may have been formed by either drilling or chiseling. Subsequently, starting in phase III-3 (ca. 500–380 BC), thin grooves are commonly found at the base of prepared hollows. At first the hollows with grooves are typically oval or circular. Then, in phases III-4 and III-5 (380–310 BC and 310–200 BC respectively), they tend to be rectangular with incisions that are perpendicular to their long sides. By the end of the period the rectangular hollows seem to have been created in parallel rows. There was, however, no standard procedure.

To the west, in the Upper Yangzi River drainage in the area around Chengdu, Zhou-period oracle bones further demonstrate the idiosyncratic nature of Yangzi oracle bones relative to their counterparts in the Yellow River Valley (Jiang 2005; Luo 1988; Zhang 1996). They also demonstrate diachronic developments in the associated divination procedures. Specimens from the sites of Fuqin Xiaoqu, Jiangjun Yamen, Zhihuijie, Minshan Fandian, and Qingyanggong in Chengdu City show that the earliest oracle bones, contemporaneous with the Late Shang, included circular hollows, some drilled and others chiseled into the bone (fig. 7, *A*). Later specimens have rectangular hollows within circular depressions (fig. 7, *B*) and rectangular hollows within which single lines were incised to facilitate cracking (fig. 7, *C*). In other words, some oracle bones exhibit evidence of increasing elaboration. As is the case at Zhongba, however, the various types of preparation were not systematically employed. Instead, there is a great deal of chronological overlap among them and overall heterogeneity in the oracle bone corpus from all periods in this region. The evidence does not suggest that these oracle bones were closely tied to political power in the societies of the Chengdu region.

The divination marks on plastrons from Zhongba and other sites in the Yangzi River drainage differ in structure from those found in the Yellow River Valley. They all lack the pairing of the pronounced groove and attendant hollow that characterize

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the northern specimens of the Shang and Western Zhou eras and are relatively heterogeneous in each stage of development. This variation indicates that several diviners of different degrees of originality may have existed at a single site at any one time.

Finally, it should be mentioned that pyromancy using mammal bones did not cease during the later Bronze Age. In fact, scapulimancy probably continued in the Northern Zone throughout the Bronze Age and into later eras. A Han Dynasty pig scapula used in pyromancy has been discovered at Dongxing in Hailin City, Heilongjiang (HSWKY and JDK 1996). Similar practices continued in the south as well, as evidenced by an oracle bone dated to the Tang era (AD 618–907) discovered in the Three Gorges at Mingyueba in Yunyang, Chongqing (SLDLKZ 1998, 107). This bone is, to my knowledge, the most recent oracle bone known from archaeological contexts in China. In addition, limb bones, scapulae, and turtle-shell fragments used as far away as Japan from the last several centuries BC through the first several centuries AD document this persistence (Lee 1981*c*, 61). These finds are scattered and rare, however, and there is little archaeological evidence of systematic, elaborate, and standardized pyro-osteomancy as an important mechanism of authority in post–Bronze Age contexts.

Summary

Pyromancy begins with scapulimancy using bones of deer and sheep in Northeast Asia. Subsequently, during the first half of the second millennium BC, pig, camel, bear, and, most commonly, cattle scapulae were used, and eventually cattle bones became dominant. During the later part of the Shang era, turtle plastrons became most common. These taxa were symbolically important animals in the communities whose ritual specialists used their bones in divination. Most were domesticated animals, which were fundamental to subsistence across North China. Turtles played a powerful symbolic role in Chinese ideology, and their increased use in pyromancy during the Shang contributed to the evolution of this symbolism.

Subsequently, plastromancy and scapulimancy persisted into the Zhou era. Although textual sources suggest that the practice continued in later Chinese dynastic courts (Keightley 1978*a*, 4 n.4; Loewe 1988) and in peripheral states such as Koguryo, Silla, and Paekche on the Korean Peninsula (Lee 1981*a*, 42; 1981*c*), late-period archaeological evidence is more common in southern China than in the north. Ethnographic and historical sources document pyro-osteomancy into the nineteenth and twentieth centuries in Japan (Blacker 1981; also see references in Keightley 1978*a*, 4 nn. 5, 6), Mongolia (Bawden 1994 [1959*b*]), and elsewhere (Keightley 1978*a*, 5 n. 13).

The spread and persistence of pyromancy in East Asia involved the sharing and protecting of specialized knowledge by diviners who engaged in this practice. The inscribed Zhouyuan oracle bones discovered at Fengchu and Qijiacun, among other places, reflect this sharing (Cao 2002, 8–9; Qiu 2000, 68–69; Wang and Yang 1999, 281–336; Wang Yuxin 1984; 1989, 417–36).[14] Some of the inscriptions include the names of Shang ancestors. It is clear, therefore, that the procedures and inscriptions of the Zhouyuan diviners were directly derived from Shang divination even though scholars disagree about whether the diviners or the scribes were ethnically Shang. Zhou diviners may have invoked Shang ancestors as part of an effort to assume leadership in the Central Plains. However, the inscriptions use essentially the same character set and, while structured differently, seem to be representative of the same linguistic and divinatory tradition as the Anyang inscriptions. The intimate association between ritual activity and writing is maintained and, furthermore, the techniques used to prepare the divination hollows are generally similar to the procedures used in Yinxu divination. We can be fairly certain that the Zhouyuan diviners were either former participants in the Terminal Shang divination system or trained by Shang diviners. They employed similarly elaborate divination procedures and seem to have remained tied, at least initially, to court activities.

The broad tradition of pyromancy was not, however, restricted to groups in direct contact with or under the direct influence of the Shang court. The practice penetrated into more distant regions during the Late Shang and post-Shang periods, and in these places the procedures used were less systematic and less elaborate. The complex process by which divination was transmitted to these places likely involved intentional imitation by diviners who were not fully conversant with the procedures used by the state diviners and may have built upon local, existing divination practices for which we have no archaeological evidence. As they adopted and adapted pyro-osteomancy, local practitioners developed their own procedures based loosely on Shang traditions but less closely tied to structures of political power. The role of these diviners was probably more similar to that of diviners in the Early Shang or those in the Late Shang dynastic core who were not connected to the royal court (Loewe 1988).

Diviners in peripheral regions such as the Yangzi River Valley who picked up and developed pyro-osteomantic procedures in the Zhou period probably had only a vague notion of the significance that pyromancy had once had to the Shang state. Nevertheless, they adopted and adapted this practice with an implicit understanding of the social power that it entailed (cf. Allan 2007). They received the tradition through a form of "down-the-line" imitation similar to the process by which divination practices spread among politically unconnected groups in southern Africa (Zuesse 1975). Those who mastered this system gained high prestige within their own groups: "The greatest authority is given to diviners who

14. See, in particular, the discussion in Cao (2002) of the positions of various scholars and the extensive bibliography of studies of Zhouyuan oracle bones and their inscriptions in that same work (pp. 191–98). The brief discussion here follows this summary.

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have traveled into far-off cultures to learn wisdom; unlike local oracles, these practitioners make use of complex methods requiring long training. . . . the more strange the wisdom, the more power it has" (Zuesse 1975, 166). Symbols that reflect distant times and places are often powerful (Helms 1993). Diviners who employed pyromancy in peripheral regions of ancient China invoked the prestige of a foreign ideology and established themselves as ritual specialists within their communities.

Conclusion

The power associated with pyro-osteomancy in ancient China emerged through a long process in which the practical mastery involved was controlled and elaborated by specialist diviners. This was true both where elaborate divination procedures became codified and systematized, as in the Late Shang case, and where divination was not as directly tied to the state. Even in peripheral regions, practical mastery increased over time. Divination practices became more elaborate although not more standardized as independent specialists protected their craft. They were one of many sources of social power and served as a significant source of *political* power only where they were systematically elaborated by the state diviners of the Late Shang.

For the Shang, this specialized divination practice involved restriction of access to knowledge about it. The king and his diviners used this restricted knowledge to support the existing social hierarchy, which was established and maintained on the basis of other sources of power, such as military force. Rituals including divination were crucial to the maintenance of the Shang state (Chang 1983, 1994; Keightley 1988). Outside the Shang sphere, divination did not become central to a hierarchical social system, possibly because the communities there were more heterogeneous and heterarchical.

The pattern of oracle bone divination seen in the Central Plains supports the notion that elaboration of ritual practices was a process that restricted this activity to a select portion of the population who used it as a significant source of social power. This did not occur at the beginning of state formation in China, however. During the Erlitou and Early Shang periods, although oracle bone use was becoming increasingly prevalent, it was not yet highly codified. It is only during the Late Shang that we see the strong evidence of integration and systematization that suggests the use of divination by the ruling elite to establish and maintain their positions of authority. Other types of ritual behavior likewise seem to have been increasingly codified during this period (Yuan and Flad 2005).

The patterns observed in the development of pyro-osteomancy in ancient East Asia show some parallels with similar practices known from ethnographic contexts. The degree to which these procedures are elaborated and standardized relates to the extent to which the associated ritual system is a source of power for the political elite. The relationship between divination and power was therefore flexible and dynamic both over time and contemporaneously in different areas. The control of ritual knowledge is a component of systems of power that can be best understood through a nuanced exploration of how knowledge is operationalized and protected in specific social contexts.

Acknowledgments

This paper developed out of a presentation given at the Workshop on Early Chinese Civilization: Social, Cultural, and Historical Dynamics of Early Chinese Civilization in Archaeological, Paleographical, Philological, and Historical Perspectives, at the University of British Columbia on March 10, 2005. I thank the organizers of the conference, Jing Zhichun, Ken-ichi Takashimak, and Tang Jigen, for the wonderful forum for discussing these ideas and the other participants for constructive feedback. I owe a great debt to David Keightley, who directed me to many of the references, and I received helpful comments on early drafts from Roderick Campbell, David Carrasco, Cameron Monroe, Michael Puett, Adam Smith, and Jason Ur. I am grateful to the Zhongba archaeological team, especially the director, Sun Zhibin, for permission to include unpublished data from Zhongba.

Comments

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Although there is a large literature on the inscribed oracle bones found at Anyang, this excellent study is the first comprehensive account of pyromancy in ancient China. By divorcing the analysis of oracle bone divination from the study of the writing on oracle bones, this study allows us to view the inscribed oracle bones of Late Shang and Early Zhou dynasties within the context of longer and more widespread divination traditions. It also opens up the possibility of viewing oracle bone divination as one aspect of a set of ritual practices that developed in the second millennium BCE as markers of elite culture. This is a major contribution. New research inevitably provokes further speculation. I offer the following comments in this spirit.

Oracle bone inscription scholarship often stresses the exclusive role of the Shang king in oracle bone divination. However, as recent finds at Huayuanzhuang have made clear, not all divinations at Anyang were performed by the king, and some diviners were associated with other elite individuals or groups. The vast majority of oracle bone inscriptions are records of questions (or, more properly speaking, propositions) inscribed after the bones were cracked; relatively few record supernatural responses or verifications. This suggests that the

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inscriptions were primarily records of the divination process. In light of this study, perhaps we should regard the addition of inscriptions to oracle bones simply as further complexity such as the trimming and polishing of the bones and the preparation of regular series of hollows.

Within the context of elite ritual practice, an analogy may be made between elaborately prepared and inscribed oracle bones and the use of bronze vessels for ancestral offerings. Bronze vessels, like pottery ones, were used to make ancestral sacrifices, but bronze vessels were more desirable, probably because of the attractive appearance of their shining metal, their durability, and the great cost in labor and resources necessary to produce them. Our only key to the purpose of oracle bone divination is the inscribed examples. These indicate that their intent was to ensure that the ritual offerings to ancestral and nature spirits being proposed would be sufficient to defray curses (Allan 1991, 112–23). Although pyromancy was not an exclusive prerogative of the Shang kings—others could divine about the offerings to their own ancestors—their impressive and elaborate divination system, which included written records, increased the status of both their ancestors and themselves.

Divination was surely an instrument of state power. Conversely, however, the quest for resources (metal ores, turtles, animals, and human victims) and the need to organize and train specialist diviners and ritual practitioners to enhance the effectiveness of their rites was a major impetus for the formation and development of the state. The association of bronze with a set of ritual practices centered on ancestral offerings first occurred at Erlitou (Allan 2007). Flad's observation that the oracle bones found at Erlitou had not undergone preparation before divination although some bones at the Dadianzi site in Inner Mongolia had been prepared is interesting, because the two sites are closely related. No bronze vessels have been found at Dadianzi, but pottery vessels from this site are related to bronze vessels at Erlitou. The absence of prepared oracle bones at Erlitou may be an accident of archaeology—the absence of inscribed oracle bones before the sudden appearance of a complex writing system at Yinxu is a cautionary reminder of the limitations of archaeological discoveries. However, this suggests the possibility that divination practices at Dadianzi influenced those at Erlitou.

This study is also revealing about the relationship between the Shang and the Zhou. Here my analysis is somewhat different from Flad's. According to his data, the earliest oracle bones with rectangular hollows are from a southern site and belong to the Middle/Late Shang period. Late Shang/Early Zhou-period plastrons with rectangular hollows have also been found on the upper reaches of the Yangtze in Sichuan. The other site where oracle bones with rectangular hollows (including three plastrons with inscriptions) have been found is the northern site of Liulihe, near Beijing, but this site is primarily Western Zhou and the oracle bones appear to be Zhou.

Many Early Zhou oracle bones from Zhouyuan have rectangular hollows (Chen Quanfang 1988, 103–5). Although some of the inscriptions found there are similar to those found at Yinxu and mention Shang royal ancestors, many scholars believe that these inscriptions were made by the Shang, not the Zhou. Other (Zhou) inscriptions are very distinctive: the characters are so small that they are difficult to read without magnification, many characters are unknown or unusually constructed, and the divination formulae differ from Anyang inscriptions. While I agree that Zhou divination practice ultimately derives from that of the Shang, these differences suggest that Zhou pyromantic practices were not a simple continuation of those of the Shang but had already begun to diverge at the time of the conquest. The rectangular hollows on oracle bones from the Yangzi River region suggest the possibility of some type of interrelationship with the Zhou. The Liulihe divinations probably imitate Zhou practice after the conquest.

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Flad has presented a highly stimulating and original approach to a topic of long-recognized importance (Chang 1983; Keightley 1978*a*, 1999*b*, 2000). Part of the novelty of his approach is his creative adaptation of theories of craft specialization and Mann's (1986) "sources of social power" to the issue of divination and power in early China. Perhaps the greatest contribution of the paper, however, is the regional and diachronic contextualization of ancient osteomantic practices. While much ink has been spilt over the inscribed oracle bones recovered from Anyang and a few other sites, the facts that inscribed bones represent less than 10% of those collected and that osteomancy was widespread and long-lived have generally not figured into discussions of divination and power. Flad's pioneering approach thus opens up an opportunity for discussing the variable ways in which osteomancy articulated with local economies of power beyond the royal court at Anyang. As with burial and sacrificial practices, it is now clear that divination was not an elite monopoly and that elite practices were not categorically distinct from less exalted ritual forms but set in a graded hierarchy of symbolic and material expense (Campbell 2007). Nonelite divination and other practices of social power are thus crucial to understanding the constitution of authority in the Late Shang polity. This holistic, social-economic understanding of power raises two major problems for Flad's approach.

The first issue concerns Flad's Weberian assumption of a linkage between "state" and "bureaucracy." What, for instance, is this reified, decontextualized thing called "the state" (Ferguson 2003; Jessop 1990; Smith 2003), and why does its divination need to be elaborate, standardized, and "bureaucratic"? If divination is a source of social power, why should

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it necessarily be monopolized by the "state"? What would the osteomantic equivalent of a Delphic oracle look like archaeologically? Would it not also be elaborate, systematized, perhaps materially marked off from less prestigious practices but not controlled by any polity? Nor is there a lack of historical examples of ritual practices within complex polities that did not share in a general ethos of "bureaucracy," such as the Han Emperor Wudi's patronage of motley assortment ritual entrepreneurs in his attempt to re-create the Feng and Shan sacrifices (Sima 1963). Beyond the problematic linkage of political context and divinatory standardization and elaboration there is the issue of archaeological visibility. In Evans-Pritchard's (1989) description of Azande oracular practices, there is a more authoritative and elaborate royal poison-oracle performed by the king, but there would be nothing archaeologically visible to distinguish it from the poison-oracle of a villager (except, perhaps, context). A dead chicken is, after all, a dead chicken. Thus, Flad's claim that the less elaborate and systematized Erlitou and Erligang divination was not a "significant state-sponsored activity," while plausible, remains undemonstrated. Given that mortuary ritual and sacrifice, along with osteomancy, underwent increasing elaboration and hierarchical differentiation over this period, with a marked increase at Anyang (Campbell 2007), it may be that the relationship between ancestral ritual and political power was not a constant, that the nature of "the state" itself changed across this span of 800 years, or that distinction was marked in less archaeologically visible ways in earlier times.

The second issue with Flad's approach involves his admittedly creative use of craft specialization theory, with its Marx-derived focus on the alienation of the product and the reduction of political relations in divination to group-individual and commoner-elite dichotomies. We might ask, for instance, insofar as divination is a skill, to what extent it is alienable. The point here is not that an agent in possession of a certain form of symbolic capital could not be coerced into using it for another's benefit but that in being the source of that capital the power that accrues from it is in some ways inseparable from the diviner himself. Indeed, the generally accepted understanding of the reduction of diviners in Late Shang royal divination from dozens to a handful aside from the king is that court divination was a source of authority that was increasingly a strict royal monopoly (Ito and Takashima 1996; Keightley 1978*b*, 1999*a*). It is also important to remember that diviners were only a part of the production of Shang royal divinations, with royal consorts frequently preparing the scapula or plastron, a diviner and/or the king performing the divination, and a scribe inscribing the actual divination (Keightley 1978*a*). Thus, the archaeologically visible manifestation of standardization and elaboration did not necessarily have anything to do with the diviners, who were, in any case, just one group of agents involved in the "production" of the courtly divination. This and the above points suggest the importance of seeing divination as an embedded but independent social institution with its own rules, history, and changing relations to other forms of social power rather than as a passive reflection of its political context.

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I share Flad's belief that more elaborate divination procedures are associated with bureaucratic institutions as a source of state power. In fact, many researchers have described the increasing elaboration of divination practices over time in this region, beginning with scapulimancy using bones of pig, deer, sheep, dog, and cattle from the late Neolithic and early Bronze Age to scapulimancy using primarily cattle bones and plastromancy in the late Shang dynasty (e.g., Chen Mengjia 1988 [1956], 19–29; Li Chi 2006 [1963] 57–59; ZSKYS 2007 [1994], 152–54; 2003, 351; Song 2004, 866–82). The correlation between the sophistication of divination practices and the power of the Late Shang state has been stressed in various works (e.g., Chang 1983; Keightley 2000).

I like the idea that diviners as ritual specialists take on a variety of roles similar to craft specialists in complex societies, but it is unclear to which kind of craft specialists Flad means to compare them. He also argues that the Late Shang oracle bones in the Central Plains are the medium of state-controlled divination, but the meaning of state control in this context is unclear. Ritual bronze casting, for example, was at one point a state-controlled craft specialty; it is clear that the production of ritual vessels (which represented ritual power) was monopolized by the royal elite during the Erlitou and Erligang periods, for there is no archaeological evidence suggesting that bronze vessels were made anywhere outside of the Erlitou and Zhengzhou sites (Liu and Chen 2003). In contrast, though divination was codified and institutionalized in Late Shang times, it is not likely to have been monopolized by the Shang kings and high elites because, as Flad mentions, independent diviners did not cease their activities in rural areas and peripheries. It is fair to say that the Late Shang court practiced a more elaborate form of divination, but this does not mean that the general method and the cult were monopolized by the Shang kings as he suggests.

Contrary to Flad's claim that the oracle bones discovered in the Central Plains were primarily scapulae of domesticated cattle and plastrons of turtles and other taxa used previously were no longer employed, bones from pig, deer, sheep, and even horse were still being used in the Late Shang period in Yinxu (Chen Mengjia 1988 [1956], 4–9; ZSKYS 2007 [1994], 152–54). In addition, turtle shell became the medium for divination earlier than the Erligang period. The earliest plastrons that were burned directly have been found at Yinjiacheng in Sishui, Shandong, and dated to the Longshan culture (ca. 2500–2000 BC) (SDLKJ 1990, 197). The tradition of turtle shell use in the coastal area and the Huai River valley can be

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traced back to Early and Middle Neolithic cultures such as the Peiligang (ca. 6500–5000 BC) and the Dawenkou (ca. 4300–2500 BC) (Chen and Lee 2004). The tradition in which turtles were symbolically important and their plastrons conducive to structured and elaborate pyromantic practice has its roots in prehistoric times.

The practices of plastromancy and scapulimancy did not evolve unilineally in relation to state formation. Their development was mosaic in time and space, and changes in their forms may have been related not only to political process but also to the availability of materials and local traditions.

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The archaeological evidence summarized by Flad demonstrates the considerable regional and temporal variability of osteo-pyromantic practices in China during the Neolithic and the Bronze Age. The article thus establishes a new context for understanding the Late Shang–period (ca. 1350–1146 BC) oracle bone inscriptions, the earliest known instance of full writing in continental East Asia. These inscriptions were not entirely limited to the Shang court, but Flad is undoubtedly correct in arguing that they were linked to the religious legitimation of elite rule.

It may be worth pointing out that, even though the engraving of oracle bones apparently ceased after the Shang period, textual evidence amply attests that osteo-pyromancy continued to be practiced during the succeeding Zhou period (ca. 1046–256 BC) both at the royal court and at the courts of various regional polities. One text in which diviners appear is the *Rites of Zhou* (*Zhou li*), an idealized reconstruction of the government of the Zhou Dynasty (ca.1046–256 BC) that was compiled, partly from earlier materials, about the fourth century BC. Here practitioners of osteo-pyromancy—grand crack-makers (*dabu*), crack-making masters (*bushi*), ordinary crack-makers (*buren*), turtle handlers (*guiren*), torch handlers (*chuiren*), and interpreters of divinatory messages (*Zhanren*)—rank foremost and are the most numerous among the various official diviners serving in the Ministry of Rites. At least in the minds of the compilers of the *Rites of Zhou*, then, osteo-pyromancy continued to be the most prestigious of official divinatory techniques. Unfortunately, no archaeological traces of Zhou-period court divination have so far come to light that could be compared with the various regional osteo-pyromantic phenomena from the period presented by Flad.

The *Rites of Zhou* text reminds us, furthermore, that it would be a mistake to equate osteo-pyromancy with divination as such. It is merely the archaeologically most visible of a host of divinatory techniques that were current in early China. Practices mentioned in the *Rites of Zhou* include, under the Ministry of Rites, dream divination, cloud divination, and divination by means of the trigrams and hexagrams of the *Classic of Changes* (*Yi jing*). In addition, the *Rites of Zhou* mentions military diviners placed under the Ministry of War. Except for some early hexagrams inscribed on some eleventh- to ninth-century-BC ritual bronze vessels and some fourth- to -second-century-BC manuscript texts related to hexagram and cloud divination, no archaeological traces have been found of these techniques, which nevertheless are likely to have been commonly practiced in elite as well as nonelite circles. Almost certainly, moreover, these techniques—with the possible exception of hexagram divination—were already known during pre-Zhou times, and the variety of their regional manifestations may well have equaled that of pyro-osteomancy. Because of the perishable nature of the materials involved, archaeology cannot establish their relative importance vis-à-vis osteo-pyromancy. Equally elusive in their material manifestations are various other divinatory techniques (e.g., astrological divination and divination by acoustic phenomena) that are not mentioned in the *Rites of Zhou* but are mentioned in other sources.

While there is no doubt that osteo-pyromancy in early China was the same sort of phenomenon as ethnographically attested osteo-pyromantic customs elsewhere in the world, the extent to which such later evidence can illuminate the specifics of early Chinese practices is problematic because of the absence of traceable historical links between them. A complementary approach might be to position osteo-pyromancy in early China on the continuum of divinatory practices attested during Chinese history down to the present day. Here lies a challenge to historians of religion. Recent scholarship in that field has begun to illuminate the medieval roots of present-day practices, for example, in Taiwan and Fujian. One hopes that eventually the time depth of such studies will include the pre-Imperial period.

In this connection, one wonders why osteo-pyromancy apparently ceased to be part of popular religious practice in Imperial China (221 BC–AD 1911). One might be tempted to argue that the chief reason may have been practicality. Osteo-pyromancy demanded specialized expertise, considerable preparation time, and expenditure of resources on the animals whose bones were to be used for divination. By comparison, hexagram-based divination with the help of the *Classic of Changes*, which conventionally involved the manipulation of yarrow stalks but could be effectuated with any number of low-cost materials, was far more economical, and anyone familiar with the *Changes* could practice it. The temple oracles popular in East Asia today—divination blocks and spirit writing, for instance—are likewise significantly less resource-intensive than osteo-pyromancy. But Flad's article shows that in many places during pre-Imperial times, osteo-pyromancy was practiced by fairly low-ranking (and by no means wealthy) groups or individuals; while unable to provide a positive explanation of the apparent demise of osteo-pyromancy in China or, indeed, to pinpoint a date for that demise, the evidence presented here would thus seem to con-

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tradict a simplistically materialistic explanation of religious change.

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This article is the first to focus on the relationship between the processing of oracle bones and political and social power from an anthropological perspective since the discovery of oracle bone inscriptions in 1899, and it makes us think more deeply about the degree to which archaeological finds present a systematic picture. Overall, I agree with the author's opinion that divination is frequently employed as an important source of social and political power.

Flad presents a very careful and detailed overview of oracle bone pretreatment traces such as scraping, drill holes, and chisel marks. However, oracle bones represent only part of divination behavior. We should also investigate the way our ancestors treated these bones after they had been used through analysis of their affiliation with other archaeological remains.

As far as we know from published materials, most of the Neolithic oracle bones have been unearthed from large-scale and even walled settlements, and this reminds us that pyro-osteomancy was already rather closely related to elites in society at this time. Oracle bones spread during the Longshan era along with other ritual activities and prestige goods such as the sacrifice of animals and humans, specific types of jade objects, high-quality pottery, and cinnabar. The emergence of all of these across a broad area is the result of interaction among different regions. Although their form and representation are not always identical, the ideological system they represent is shared. Pretreatment of oracle bones was initially not complex, but the meaning behind these bones would have been the same across these different regions. Oracle bones are not just bones but representatives of a whole set of skills, knowledge, and practice including prayer, assessment, and decision making, through all of which elites tried to exert control and legitimate and sustain their authority.

It is clear that the Late Shang saw divination become codified and systematized, with distinctive pretreatment procedures such as drilling and chiseling. (Incidentally, one should add to this the placement of cuts on the top end of scapulae.) Therefore, the conclusion that divination served as a significant source of state power is well-founded. However, state control was probably applicable only to the early part of the Late Shang. After the expansion of the area of Shang culture, oracle bones with double hollows became so popular that, like the most common types of pottery, such as the *li* tripod and the *gui* bowl, they are found at sites of different sizes, including ordinary settlements such as Qianzhuangcun in Pinlu, Shanxi, and Kuangzhong and Liutaizi in Jiyang, Shandong. After all, the processing of scapulae and turtle shells, even using the double-hollows technique, was not difficult for ancient people who were familiar with bone and horn tool production. In my opinion, what the Late Shang royal court tried to control was not pretreatment procedures but large turtle shells and scapulae and, most important, the writing system. Large turtle shells and large cattle scapulae are the most common bones at Yinxu, and beyond Yinxu oracle bone inscriptions can be found only at the single site of Daxinzhuang (the examples found in Zhouyuan were unearthed from Western Zhou features). It is obvious that bones of long-lived animals had great spiritual significance for the Shang people, while the writing system was a rare aggregation of communication and knowledge (including ritual and religious knowledge). It is through the control of all of these key resources that the Shang royal court realized its domination of an integrated system of divination.

Furthermore, the Late Shang court tried to initiate another method of divination, namely, the *gua yao* system, based on the counting of yarrow sticks. Although we do not have enough evidence to say whether pyro-osteomancy gave way to the *gua yao* system in terms of significance, the ubiquity of oracle bones at Shang sites could be seen as a sign that pyro-osteomancy had less mystification than before. The Western Zhou saw the consummation of the *gua yao* system, while oracle bones clearly became less significant. Pyro-osteomancy was thus reduced to insignificance as a component of necromancy related to Taoism and persisted mainly in peripheral areas.

The research on oracle bones unearthed from peripheral sites is quite compelling. Until now there has been no comprehensive classification or interpretation of oracle bones in the Central Plains area during the Shang and Zhou periods. Flad's analysis of oracle bones in the Yangzi River valley, based on materials he himself collected, is a wonderful case study, showing us how local people adopted and adapted traditional divination processes, particularly the pretreatment of oracle bones, from the Central Plains. The diversity of pyro-osteomantic procedures in peripheral areas should be more obvious than that of the pre-Shang period because states had less control over this kind of activity at that time. Site-by-site case studies like this one will reveal more and more new information about this important practice.

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Flad's article is an excellent contribution, an up-to-date survey of recent materials of great value to everyone interested in issues of divination, power, and state formation in ancient China and beyond. I have some questions that I would like to raise about these big issues, but first, some observations on the general discussion about diviners, their social status, and their definition as either individual- or group-oriented

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in their service: This may need some qualification. In stateless, egalitarian societies known ethnographically (such as the Wa of the Burma/China border region in recent history, with which I am familiar), diviners may alternately serve both individuals (and families) and wider social groups (kin groups, villages). But even when the service is oriented toward helping but a small part of society (e.g., a single nuclear family) to choose its course of action in the face of illness or other troubles (the most frequent uses of divination), its availability and the presence of divination as a cultural practice are still of great importance for society as a whole. Even so, diviners are simply ordinary, if divinely gifted, persons who use little more than their own bodies as tools and are not identified as taught craftsmen—something which is probably intimately related to the emergence of social classes in early states, which the article proceeds to discuss.

One quibble here is with the formulation "across China in Shang times": the state structure that goes by "China" hardly existed in Shang times. It was being brought into existence. This makes it necessary to avoid the present nation-state template of "China" and instead speak geographically of "Eastern Asia."

Also, one wonders if any precise context information was recorded for any of the prestate oracle bones mentioned. Sadly, this has seldom been the practice in Chinese zooarchaeology. Most of the pieces mentioned probably have no precise coordinates, only general provenience from a period stratum. If we had coordinates we might expect that in egalitarian societies divination bones and the like (which can serve as a historical memory and indeed record even without writing, as they often have among the Wa) might be kept inside homes or discarded in significant spots nearby. (In state societies they get archived, as is seen in the palaces of late Anyang.)

As regards state formation, in my 2001 piece on hunting divinations I suggested that the successive standardization of expected divination outcomes that is apparent in the Late Shang oracle bone inscriptions (which dovetails with the observation of technological standardization over the same general period), eliminating much of the original uncertainty, indicated the bureaucratization of a securely established state power. There was no longer any point in the king's displaying himself openly on the hunting path as he had done in the past. Ritualized hunting now took place only in secure settings with prearranged prey. The state, based as it was on dramatically more deadly military might than before, had already become so securely established that hunting as a symbolic-performative tool of state formation was no longer useful. No wild animals could threaten such forces as they had threatened people in the Neolithic and preceding periods. And this is what accounts for the abandonment of state bone divination in Zhou times and even for the curious shift to and sometime persistence of turtle-shell divination.

I wonder what the author thinks about this argument and about the intimately related problem of the choice of medium. In my piece, I sought to explain these choices, suggesting that the once-dominant cattle bones were useful because of the symbolically meaningful intermediate location (thus = suitable media!) of royal tamed cattle in the dynamic process of establishing the kingdom by vanquishing the forces of the wild on behalf of what would consequently become the king's people.

It is also worth suggesting that hard bone may well have been the symbolic medium of choice for divining the building of the state, as opposed to the shivering livers gazed at in so many egalitarian societies, where the hardening of any monopoly of power was so widely discouraged.

Lastly, I hope that Flad and other scholars on the frontlines of Chinese (or, perhaps better, East Asian!) zooarchaeology may have the opportunity to examine the substantial and well-preserved collections of animal bone materials from the earliest modern archaeological excavations in China made by Johan Gunnar Andersson in central/north China (Qinghai/Gansu/Henan, etc.) in the 1920s and still stored at the Museum of Far Eastern Antiquities in Stockholm. Long dormant and unstudied since Andersson's times because of lack of local scholarly interest, they beg for comprehensive research and reevaluation. This would include several examples of purportedly Late Neolithic uninscribed divination scapulae that are very similar to the fascinating pieces exhibited in Flad's figure 2.

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Moving beyond the traditional treatment of divination as an evolved religious activity, Flad explores the social aspects of divinatory practice, particularly arguing that the control of access to specialized knowledge about divination could be achieved through the elaboration and standardization of divinatory procedures and that increasingly elaborate divination practice during the late Shang period was likely linked to bureaucratic institutions as a source of state power. I strongly agree with him that a long-term perspective with a special focus on the social dimension of divination will shed new light on the varied forms, dynamics, and histories of the complex societies of early China.

Pyromancy was, as Flad points out, common in various regions in China during the early Bronze Age, but its roles in maintaining social relations and/or legitimizing political authority varied greatly. To a great extent, he treats the Central Plain as a single region for analysis, assuming the evolutionary development of divination as a religious institution from the Erligang through the Huanbei or Taixi to the Anyang period, built upon historical accounts on the Shang's removal of its capital. This assumption leaves little room for inquiry into

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the workings of the various cities and polities, which may show substantial variation.

The one-to-one linkage of more elaborate divination procedures to state institutions may not be empirically grounded. Some early societies in the Central Plain were sufficiently complex organizationally and socially to be called "state societies," but there is little evidence that pyromancy was necessarily a state-sponsored or state-controlled enterprise (e.g., HSWKY 2001; ZSKY 1999). Flad's analysis suggests that divinatory activities using oracle bones at Anyang were perhaps systematized and institutionalized during the Late Shang period. More important, however, they were intensified to an unprecedented degree (Cui 2003; Keightley 1978*b*; Zhang B. 1988), and the same was true of other rituals such as human sacrifice (Huang Z. 2004). These intensified ritual activities were accompanied by social and cultural transformations, as manifested by the invention of writing, the introduction of horse-drawn chariots, intensified exchange of material goods, and the presence of ethnically different populations (ZSKY 1994). Clearly all these cannot be explained simply by an evolutionary model in which the cultures or traditions represented at Erligang, Huanbei, and Anyang developed in a linear fashion, with increasing social complexity resulting from technological innovation, economic specialization, social differentiation, and political centralization.

Flad's proposal of the "coexistence of multiple ritual systems or multiple versions of a ritual system" in the Shang society is not well supported. There may instead have been different divinatory traditions, particularly in the early phases of Anyang occupation. Remains of pyro-plastromancy and pyro-scapulimancy tend not to occur together (Liu Yiman 1997), and *li*-group diviners seem to have had a preference for pyro-scapulimancy. The early phases show much more variability and diversity in forms and styles of artifacts (pottery, bronzes, even jades) and architecture than the later phases, possibly suggesting greater heterogeneity of material culture and population in the beginning of urbanization at Anyang and a process of "simplification" toward the end of the Yinxu period. Similarly, there were many diviners in the early phases, and they performed divination in different social contexts for kings as well as nonroyal elites. Many of them were influenced by different divinatory traditions suggestive of their diverse cultural or religious backgrounds (Takashima and Yue 2000). In contrast, only a very few diviners can be identified during the terminal phase of the urban occupation at Anyang. Recent strontium analysis of human teeth suggests the presence of many more migrants from other territories in the early phases than in the late ones.

More and more lines of evidence seem to support the hypothesis that Anyang, like many early cities, may have been intentionally created to serve the interests of different social groups, both local and distant. Here the formation of new group identities may have become crucial because the city represented a new social order in which different social groups interacted and, more important, were recombined under new leadership, probably by means of the development of a new religiously grounded ideology of social order and hierarchy (Yoffee 2005). Intensified divination, human sacrifice, and other ritual activities were the materialization of this ideology, which was used to justify and promote the programs and benefits of the Shang kings and other elite groups. A major source of the social power of the Shang upper classes was the possession of specialized knowledge including elaborate forms of divination (rather than the use of practical knowledge as Flad has it).

It also needs to be emphasized that intensified pyromancy at Anyang during the Late Shang period was historically contingent upon the long-term divinatory tradition developed in northern Henan and southern Hebei. Before the rise of Anyang as a major power this area had a long history of pyromancy unmatched by any other region. Among the many pyromantic remains from Xiaqiyuan is the earliest example of an oracle plastron pretreated with double hollows, dated to the first half of second millennium BC (HWG 1979).

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Flad's "Divination and Power" is a valuable contribution to the field. I have just three minor comments:

1. Divination within the Late Shang changed considerably (Keightley 1999*a*, 243, 245; see also 1997, 27, 30; 2004, esp. 29–44):

> Not only did diviners use complementary, positive and negative charge pairs increasingly rarely, but they reduced the whole scope of the enterprise. . . . Calligraphy, moreover, once large and bold in Period I . . . had become minuscule. . . . Crack notations that, in Period I, had identified the auspiciousness of particular cracks . . . were almost completely discarded. . . . Shang divination, in short, had . . . become more systematic, less spontaneous, and less comprehensive; it had also become routinely optimistic.

What these changes mean is not easy to assess. Probably, several strands of causation are involved: bureauracratic laziness, the growing popularity of the Yijing forms of divination (Vandermeersch 2001), etc. Liu Yiman (1995), for example, on the basis of the cheaper "funeral wares" (*mingqi*) in the tombs, sees a trend of increasing religious skepticism. Underhill (2002), 226) suggests that "the system of social ranking was becoming more entrenched. . . . Only a minority of elites were entitled to high-quality bronze vessels."

2. What was done with the bones and shells after they were used? Tombs, special archives, garbage—all must be considered (Keightley 2006*b*). Generally Flad does not mention the sources of the oracle bones.

3. I wish that Flad had used "ancestor worship" a little

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more. Ancestor worship had deep roots in the Neolithic and Shang (see, e.g., Keightley 1999*c*: 11, 17, 38n. 119, 40, 43–44; 2004). "Shang religious practice rested upon the *do ut des* ('I give, in order that thou shouldst give') belief that correct ritual procedure by the Shang kings would result in favors conferred by Di" (Keightley 1978*b*, 214–l5) or the ancestors (see also Keightley 2004; 3–5, 11–30). Ancestor worship had built the dynasty in part.

When there are no oracle-bone inscriptions, we must proceed cautiously. Even the blank oracle bones (Song 1999, 392) may have contributed to the cult of the ancestors. Presumably the royal diviners shared a culture with the rest of the diviners, including ancestor worship. The writing renders the oracle bones particularly valuable, but even the blank bone was part of the same culture.

I look forward to more of Flad's writings.

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Through his thought-provoking discussion of the way bone-divination rituals were adapted over time in China, Flad touches on issues involving risk in the performance of ritual (for what I consider ritual, see Kyriakidis 2007, 289–96). In exploring this dimension of the archaeology of ritual he may be contributing not only to the understanding of the material at hand but also to the archaeology of ritual in general.

As Flad mentions, "The personality and charisma of independent diviners are a significant part of the effectiveness of their prognostications (Winkelman and Peek 2004, 7)." Indeed, the ability to provide good information, to satisfy the needs of the "patron," and to develop a strategy for tackling the ambiguity of the future are necessary virtues for a successful diviner. Having to deal with a "patron," however, constrains the independence of the diviners: failed prognostications must be explained efficiently, unpalatable divinations will have to be either omitted or "sold" with care so as not to infuriate the "patron," and the tricks of the trade will have to be safeguarded to maintain one's authority. These issues pose a number of risks for a diviner which in fact largely overlap with the types of risk identified for all rituals.

Howe (2000, 69) identifies extrinsic and intrinsic types of risk, the former being "risks which accompany the enactment of a ceremony but are not built into the structure of the rite" and the latter being "integral to the rite itself, part of its very essence." Although I follow Howe's observations on the risks involved with the performance of ritual, I cannot see a disjunction between the structure and the performance of the ritual. In fact, I would claim, the ritual exists through its performance and not on the basis of an intangible "structure," even if this performance is not for public display and does not effect any perceptible change in the world—as with some prayers. To put it simply, if there is no action, no performance, there is no ritual.

The enactment of ritual and the extent to which it follows the norms created through comparisons with previously performed rituals creates risk for the performer. A performance may be considered "correct" or "incorrect," "successful" or "unsuccessful," with immediate consequences for the status of those responsible. Social status is also risked in the public reception of one's projected status in ritual performance or participation. A diviner may undertake to predict something extraordinary or show off with some very expensive equipment, but the "patron" or the public may not be impressed. Since status has to do with public recognition, when it is projected in any ritual performance and especially public rituals it involves risk.

Flad mentions that "diviners drilled hollows into the bones prior to burning to facilitate and control cracking." They had thus developed a strategy for minimizing their risk, ensuring that their status as successful performers was not endangered by the random cracking of the bones. It also means that they could thus avoid surprises that would disadvantage them in their relationships with "patrons." The advantages provided by this treatment of the bones prior to burning may have been behind the spread of this practice throughout the Lower Xiajiadian and then slowly the Erlitou. Although various reasons can be given for the adoption of specific ritual practices, the fact that drill holes were clearly designed to mitigate risk in the first place renders risk a prime motive for the dissemination of this practice: those who resisted it either did not know about it or would have considered it a type of "cheating" that would place their status as "true" ritual performers and "true" diviners at risk. Other divination practices, however, may have spread for a number of reasons, as Flad points out, reflecting class, parochial, or other differences.

In fact, relatively institutionalized, crystallized, and standardized rituals (Kyriakidis 2005, 68–76) such as the Royal Shang divination rituals are more likely to include risk-mitigating elements such as the double-hollow treatment of oracle bones. This is because a ritual with a risk mitigation strategy is more likely to be propagated and repeated for the long period of time that is essential for further institutionalization (Kyriakidis 2005, 68–75).

Flad's inspiring paper offers insight into the changing bone-divination practices in early historic China, but it also beautifully illustrates the role of risk and risk mitigation in the workings of these rituals, an issue relevant to many different rituals in China and beyond.

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As Flad makes clear, East Asian pyro-osteomancy is an extensively attested phenomenon. He lists some 80 localities

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yielding related remains, and further important examples could be supplied from additional Chinese-language studies (e.g., Xie Duanju 1993; Zhang and Li 2007) and from recent excavation reports (e.g., BDK and SDW 2000). Accounting for this well-attested behavioral trait requires explaining what (if anything) it was good for and deciding what beliefs to assign to participants in the practice. What did they *think* it was good for?

The divination records from Anyang indicate that Late Shang kings believed that cracking bony parts of dead animals was a useful (but fallible and testable) technique for predicting rainfall and determining the source of toothache, among other things. They were mistaken, but beliefs of this kind are appealing partly because believers would be empowered if they turned out to be true. They may also be resistant to falsification for the reasons discussed by Delfabbro (2004) and Fugelsang and Dunbar (2004). Moreover, there are reasons for thinking (and some slight evidence) that superstition in moderation may be good for you, fostering the "illusion of control" and enhancing performance on certain tasks (Thompson, Armstrong, and Thomas 1998; Dudley 1999). The illusory promise of divination is what sustains the practice.

But there are other motivations for participating, most obviously the prospect of making a living through its performance as a mantic entrepreneur or an attached specialist. Flad suggests that the evidence he reviews represents, consistently, the output of specialists. The role of specialists at the large Shang-period sites is evident, but their presence at earlier and smaller sites is harder to discern confidently. Some evidence could equally represent attempts by small groups to divine about their own interests without external specialist intercession. The Innu diviners mentioned by Flad were specialists only in the minimal sense of being individuals with a distinctive talent, but the descriptions (see also Armitage 1992) imply that the interests of the group for which they divined were also broadly their own.

A different dynamic accompanies a sharper conflict of interests between the performers and those whose anxieties they address. A diviner who amplifies those anxieties, provides persuasive and elaborately unfalsifiable justifications for divination, draws attention to prognosticatory successes while concealing failures, and prevents creeping incredulity in patrons will prosper at their expense and at the expense of less able competitors.

The resulting competitive ratchet is exemplified, I suggest, by the modifications applied to divination bones (drilling, chiseling, splitting, "double hollows") that Flad discusses. All are attempts to squeeze as many prompt and predictable cracks from the bone as possible. The Yaoxian Beicun report (BDKSZ and SSKY 1994, 330) remarks that drilled holes were deeper in thicker areas of the scapula: the bone was reduced to a uniform thinness at the points where it was to be cracked. The aim was a controlled performance, affording protection against the skepticism of increasingly discerning patrons. The "double hollows" controlled the orientation (left versus right) of cracks. The innovation coincides with the introduction of the symmetrical turtle plastrons, on which positive and negative versions of a divinatory proposition were associated with oppositely oriented cracks and inscriptions on opposite sides of the midline—a novel bit of hocus-pocus but not obviously evidence of increased political significance.

Flad describes Shang-period pyro-osteomancy as "a crucial source of power for the Shang royal house." But were the Shang kings powerful because they practiced divination, or did they lavish resources on divination because they were powerful and believed in it? The two possibilities are not mutually exclusive, but consider the case of the more modestly powerful Chu official Shao Tuo a millennium later: His divination diary survives (Cook 2006, 153–210), and formally and functionally it represents descent with modification from the Shang records Flad mentions. In 317 BC he suffered abdominal pains, was short of breath, and lacked appetite. Diviners prescribed sacrifice to a variety of imaginary beings and dead kings. The following year, five diviners responded to similar symptoms. Recommending the sacrifice of more livestock, they predicted an "auspicious" outcome. Twenty days later another diviner, noting persisting symptoms, predicted "he will not die." More sacrifice was recommended, and the prognostication was "auspicious." A month later an inventory was being drawn up of the contents of the tomb in which Shao Tuo and his divination diary were to be buried. As with the Shang kings, we have strong grounds for attributing belief in divination to Shao Tuo, and his power was apparently diminished rather than augmented by his behavior.

Playing a mixed role of patron and performer and sitting on top of a social hierarchy, the Shang kings may have been less vulnerable, but distinguishing the power that allowed them to indulge in divination from the power generated by the indulgence is a substantial challenge.

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Flad's historical reconstruction of the Shang period of Chinese history on the basis of evidence from oracle bones is fascinating and demonstrates yet another dimension of the valuable information to be gleaned from divination systems and their artifacts. Because divination exists in all human societies and usually involves the fundamental tenets and values of a society, it becomes a rich resource. We are also reminded that virtually any aspect of culture can be traced over time and space and provide valuable historical data. While I cannot comment on the history of Chinese archaeology or Flad's specific citations, I can offer some thoughts on his methodology and the comparative study of divination systems, especially in terms of African cultures.

A number of years ago I attempted a historical study of the divining chain of southern Nigeria (Peek 1982). Related

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to the famous Ifa divination system of the Yoruba peoples, this system uses two chains of eight seed shells each. Cognate terms for configurations and comparable aspects of the divination process allowed comment on the history of peoples of southern Nigeria. Such studies are also possible for other divination systems which have regional distribution such as the divination "bones" used throughout southern Africa. Given the wealth of data we now have on traditional religions and systems of knowledge, intellectual histories of African cultures are quite feasible (Peek 1991, 13). Certainly the extraordinary historical studies of Wim van Binsbergen (2005) demonstrate the wealth of possibilities.

While I am impressed by Flad's reconstruction of the development of state societies in relation to increased elaboration of the divination system, several questions do emerge. I wish there were more textual evidence from the oracles themselves to correlate with the political control which Flad assumes. Such evidence is alluded to at several points but never explicitly presented. A distribution history of forms over space and time documents presence and absence, but correlation cannot be assumed to be causation. In addition, we need to be cautious about assuming that elaboration of a cultural system necessarily means political complexity. Certainly the Ifa system, which requires at least 16 years of training, continues to be taught and practiced by diviners who are very independent. While there are a few still linked to courts, all these diviners pay allegiance to Ifa not secular authority. In fact, there are numerous examples of complex divination systems practiced in nonstate societies throughout Africa.

Along similar lines, to accept the link to political control we need more explicit evidence of the manipulation of oracular messages and divinatory devices. I am troubled by any assumption that divination must involve manipulation by the diviner for personal or state reasons. Closer examination of divination sessions usually negates this characterization. In Africa it is certainly possible for divination and political control to be linked (see, e.g., Mendosa 1982). There is no question that those who control the instruments of knowledge, especially those of an oracular nature, may have great power; but how is this exercised? Those who consult diviners may do so on behalf of others (husbands for wives, fathers for sons, and so on). Was there a similar pattern in the Shang period? Who (if anyone) is manipulating what for whom?

Although I have never performed pyromancy, I am willing to accept that drilling holes affects the cracking patterns in the cattle bones and turtle shells, but, again, I wonder how. If Flad can demonstrate alteration of cracking patterns due to the pattern of drilled holes, we have a much tighter argument. The technique of preparing a grid of marks on which there will be divine effect is widespread. For example, the Dogon diviners of Mali prepare elaborate six-section grids in the sand, full of symbolic markers and scattered corn kernels, which await the night-time passage of a fox whose paw prints create the oracular message to be read in the morning. Indeed, this is a very elaborate, standardized system practiced in a village setting. Elaboration alone does not mean court affiliation or manipulation.

I am delighted to see histories of esoteric cultural practices being pursued. Too often we assume that historiography depends entirely on written records and ignore what artifacts can tell us about cultural practices and how they may change over time and space. Chinese studies have the added aid of local histories, court records, and ancient scholarly commentary, but such studies can be developed for societies with oral traditions as well. Given divination systems' detailed articulation of a culture's values, these histories can be especially illuminating. I hope that this article is a prelude to further investigations of oracle bones in Chinese history.

Reply

I appreciate these extensive and insightful reviews, and I hope that they and my responses to them will foster additional research into the archaeology of divination and ritual generally and into the processes of change that occurred in conjunction with the development of complex societies in East Asia during the last several millennia BC. As is always the case with archaeologically inspired research, future investigations will continue to affect our understanding.

Several commentators recognize the value of long-term perspectives on ancient ritual practices. Allan, Falkenhausen, and Peek make this point most explicitly, and I am sure that this sentiment is shared by others. This is not an idle point or one that applies only to archaeologists. Falkenhausen urges historians of religion to develop diachronic research farther, and the same call can be made to anthropologists who deal with contemporary ritual practices and the material aspects of changing ritual behavior.

Several comments reflect my invocation of Mann's (1986) four sources of social power: ideological, economic, military, and political. I chose not to elaborate on these various components because of the risk of exaggerating distinctions among them at the expense of the holistic approach that Campbell encourages. Although I emphasize the increasing importance of divination as a source of social power during the Shang, I do not mean to suggest that other sources were absent *or unconnected*. As Allan, Chen, and Fang all point out, control over the extraction and acquisition of certain resources was an important source of economic power during the Chinese Bronze Age (see Liu and Chen 2001). Military power is likewise evident not only in the form of bronze weapons and human sacrifice but also in inscriptions on oracle bones that relate to conflict. In fact, these social institutions are all intertwined. Examination of the diachronic course of relationships between certain institutions and social power is nevertheless necessary and important.

The widest range of comments relates to the way we in-

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terpret the elaboration of divination marks. Peek emphasizes ethnographic variation in the relationship between the sophistication of divination practices and political complexity, and Jing criticizes the idea that elaborate oracle bones are straightforward evidence of the existence of states. Although I consider increasing elaboration in the Late Shang indicative of a peak in ideological practices (of a specific type) serving as a critical source of power during this period, I do not believe that this is universally the case. The diachronic change in other types of contemporary ritual activity, such as the intensity of human sacrifice, to which Jing points seems to offer further evidence supporting the changes I observe.

Along with Peek and Jing, Campbell asserts that the association between state bureaucracy and divination elaboration is problematic. His critique is as much of the typological approach to social form and political order as of the proposed linkage between ritual specialization and state control. I am sympathetic to the former concern but follow Yoffee (2005) in believing that states involve institutions that structure society in new ways. Nevertheless, in agreement with Smith (2003), I am ultimately less interested in the problematic definition of "states" than in the institutions of authority and integration that tie complex societies together and structure social interactions.

At Yinxu, the Late Shang capital, one line of evidence that supports a strong connection between divination and political power in the court comes from the inscriptions on many bones. This relationship has been the focus of most oracle bone scholarship. Allan, in support of the notion that elaboration is connected to status, makes the important point that the inscriptions themselves should be taken as an additional element of elaboration. This additional element reflects the development of oracle bone divination during the late first millennium as a "prescriptive production process" (see Li Yung-ti 2007)—the whole set of divided labor, alluded to by Fang, including the acquisition of bones and their storage, pretreatment, use in pyromancy, curation, inscription, and further storage.

The relationship between oracle bone elaboration and political power concerns the nature of divination practice, which I have labeled "specialized." Chen appropriately asks what I mean by this, implying that I suggest that *all* divination was monopolized by Shang kings and high elites during the period of greatest elaboration. This was not my intent. Specialization is a concept that encompasses a great deal of variation that should not be ignored (Costin 1991; Flad and Hruby 2007). Those who were engaged in the most elaborate Late Shang practice were in my view attached to the Shang elite through a relationship that established a monopoly on their services, but, as Smith implies, they need not have been the only diviners in the society. Unattached (or differently attached) diviners were also "specialists" of a sort, particularly according to the broadest definition of specialization, which emphasizes production on behalf of nondependents (Clark 1995; Clark and Parry 1990; Flad and Hruby 2007). It is important to recognize the diversity of specialization and tease out the important differences between practitioners of similar practices in different social contexts.

In relation to this concern with divination as specialized activity, Jing would like me to reconsider my use of the term "practical mastery," suggesting that what I mean is "specialized knowledge." Bourdieu (1977 [1972], 15) uses the term "practical mastery" as a *mode* of practical knowledge to refer to the informal, embedded, unexpressed (and inexpressible) ability to skillfully engage in specific social activity—often (but not necessarily) to the end of manipulating social relationships. "Specialized knowledge," which Jing usefully introduces, is entirely consistent with practical mastery in the context of a specialized activity such as divination. I feel that we should consider the degree of practical mastery (and not just specialized knowledge) when discussing the development of oracle bone divination in East Asia because the success of divination depended in part on the ability to combine mechanical procedures with intuition and insight (Tedlock 2006).

By drawing our attention to my use of "practical mastery," Jing has alerted us to an issue of contention among the various commentators—the relationship between the increased elaboration of bone pretreatment and the issue of predictability. Fiskesjö stresses the importance of changes in divination procedures that would have increased predictability, and this issue is the focus of comments by Kyriakidis, who points out that strategies for minimizing risk (to the diviners) may relate to the nature of client-patron relationships. This intriguing suggestion is echoed by Smith, who compares this to the reliance on illusion and superstition to mitigate unpredictability in modern contexts.

I urge caution with regard to implying that ritual activities (past or present) are "irrational" (Brück 1999; Tedlock 2006), and I believe Peek shares this concern. He is also troubled by the suggestion of manipulation of results by divination specialists. As Smith and others point out, the direction of cracking was clearly controlled by the introduction of the double-hollow form, and in this sense the cracking was made more predictable. We do not know, however, exactly what the divination specialists were interpreting and cannot assume that the *outcome* was being manipulated in a recognizable way. Nevertheless, the divination specialists during the Late Shang would have been concerned with addressing social uncertainty through the authority vested in them as mediators with ancestors and other supernatural forces.

Keightley laments the lack of attention paid to the question of ancestors. He has dealt with this issue extensively for the Late Shang (Keightley 2000, in addition to the references he cites), and the development of ancestor worship for earlier periods has also been explored (Liu Li 2000). Although I have no doubt that ancestors were another critical source of power for the Shang elite, it is worth being cautious in invoking ancestor worship as an explanatory tool, particularly for earlier periods (Whitley 2002). Likewise, I am hesitant to invoke "shamanism" across time in relation to this practice, although

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it is likely that oracle bone divination was in some ways shamanistic.

The double hollows and other pretreatments may require more attention than they are accorded in this paper. Allan posits a possible influence of Lower Xiajiadian practices on Erlitou divination traditions, while Jing focuses our attention on the Central Plains region. In additional comments to me Jing has pointed to several scattered examples of pretreated oracle bones across this region that are contemporaneous with and may be slightly earlier than the Lower Xiajiadian examples I cite. These examples are significant, and I draw attention to them here.

Cattle scapulae from the late Longshan sites of Xiaopangou in Mengjin, Henan (LB 1978, 255) and Xinzhongji in Cao Xian, Shandong (HDWG 1980, 387) are said to have been drilled before being burned. Also in Shandong, at the Longshan site of Xingzhaiwang, in Yucheng, about 10 fragments of scapulae and turtle plastrons have some pretreatment, although these were surface-collected (DDWG 1983, 972). Finally, at Guangshe in central Shanxi, 12 cattle and pig scapulae were used as oracle bones during the late Longshan, and 8 of them seem to have been drilled before burning (Jie 1962, 32).

The Longshan tradition of the Guangshe region may have been significant in the development of the Xiaqiyuan culture that Jing mentions. In addition to 3 directly burned scapulae in the earliest stratum (level 4), the late Xiaqiyuan contexts (level 3) contain 12 cattle and sheep scapulae with chiseled hollows contemporary with Lower Erligang remains (HSWG 1979). In addition, one complete turtle plastron with well-aligned double hollows also apparently dates to this level. This single example predates the earliest double divination marks that I discuss in the text. In level 2, during the period immediately preceding the Late Shang (i.e., "Middle Shang"), 67 oracle bone (plastron and scapula) fragments, 17 of which have double hollows, have been found. These data support the chronology presented for transition in the significance of divination.

The Middle Shang remains from Xiaqiyuan are contemporaneous with the site of Huanbei Shangcheng (Tang, Jing, and Rapp 2000), located immediately adjacent to the Late Shang site of Yinxu. At Huanbei, 46 oracle bones with double divination marks are included among the 150 specimens found at the site in a number of different contexts, including pits at the Huayuanzhuang locus (ZSKYAG 2004) mentioned by Allan, who cites these remains as evidence for nonroyal divination. Although I agree that nonroyal divination occurred, these remains are not strictly contemporaneous with the inscribed bones from Yinxu.

A recently excavated example from Guandimiao may be better evidence of nonroyal Late Shang divination. This site, reported on January 17, 2008, at the Chinese Academy of Social Sciences, is a ~10-ha. village recently excavated in Xingyang, Henan. It is an important example of a nonelite Late Shang community, and it contains two discoveries worth mentioning here. One is a pit containing an articulated cattle skeleton missing its scapulae, interesting because it suggests both the practice of cattle sacrifice and the select harvesting of cattle scapulae (see Yuan and Flad 2005). (In response to Keightley's and Fiskesjö's call for more information about the contexts in which oracle bones are found, it may be said that many are found in pits along with other refuse, some in storage pits, and many in undifferentiated cultural strata. This topic deserves careful study.)

The second relevant discovery from Guandimiao is a cattle scapula used for divination with double divination marks—an example of a Late Shang oracle bone with elaborate preparation but no inscription in a nonroyal context. Fang mentions several others and suggests that these remains indicate a gradual dissemination of this practice. Although, as he points out, the procedures for creating double hollows were not technically difficult, proper divination procedure would have been more than a matter of technical proficiency.

Fang's comments are echoed by several others who draw our attention to changes during the Late Shang. Keightley, for example, points to changes in the characteristics of inscriptions that may, as he suggests, relate to changes in the degree of development of social ranking. We see this in other diachronic studies of Bronze Age ranked communities in ancient East Asia (Flad 2002). Jing calls our attention to the possibility that diverse groups were coming together at the beginning of the Yinxu period, and this may suggest a reason that the performance of elaborate divination may have peaked at this time. Allan mentions that Zhou procedures were already diverging by the time of the transition to the Zhou (i.e., in the late period of Yinxu). This enhances the comments made by Fang and also relates to the wide geographical spread of oracle bone divination after the Shang, when the practice was waning in the Central Plains. The oracle bones from Sichuan, the Three Gorges, and the middle Yangzi region speak directly to this point.

It is interesting to consider why, as Falkenhausen points out, despite ample textual evidence from the Zhou period for oracle bone divination, the scant archaeological evidence is largely limited to regions remote from the Zhou political core. Fang suggests that the change had to do with the introduction of yarrow-stick divination, but others have argued that, while divination at the *popular* level gave way to yarrow sticks, the most important divinations remained the purview of osteomantic specialists (Loewe 1981). Fiskesjö suggests that the demise of oracle bone use reflects the fact that the relationship between the court and the animal world was no longer as significant as it had been during the Shang.

Although considerably more research will be required to address this issue, I would suggest that these patterns of diachronic change are usefully discussed from the point of view that certain ideological practices served as sources of social power for the ruling elite in the Central Plains. I hope that future research will continue to explore these issues.

—Rowan K. Flad

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