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# The Jishi Outburst Flood of 1920 BCE and the Great Flood Legend in Ancient China: Preliminary Reflections

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## Abstract

On August 5, 2015, *Science* published an article by Wu Qinglong and a team of distinguished archaeologists that reported on the discovery of evidence for a massive outburst flood in the upper reaches of the Yellow River c. 1920 BCE. The archaeologists identified this flood with the one brought under control by Yu 禹, who was traditionally regarded as the founder of the Xia dynasty. They further argue that since Erlitou culture originated around 1900 BCE, the coincidence of date serves to confirm the identification of Xia and Erlitou culture. This article argues against the historical interpretation of this evidence for an ancient flood. In the early texts, Yu did not control a flood along the Yellow River; he dug all the riverbeds throughout the world so that the waters could flow into the sea. Moreover, the story of Yu controlling the waters and the foundation of the Xia dynasty were not linked in the earliest accounts. This story originated as part of a cosmogonic myth in which the world was made habitable and conducive to agriculture. Thus, it cannot be identified with any particular flood or used to date the foundation of the Xia. Finally, it argues that a great flood was more likely to have caused social disruption than the development of a new level of state power. However, this flood may have caused people from the Qijia culture, which was centered in the region of the flood and already had primitive bronze-casting technology, to flee to other regions including that dominated by Erlitou culture. This cultural interaction introduced metallurgy which was further developed in the context of Erlitou culture, thus spurring its development as a state-level society.

## Keywords

ancient history – Erlitou – great flood – Xia dynasty – Yu

On August 5, 2015, *Science* published an article by Wu Qinglong 吳慶龍 and a team of distinguished archaeologists that reported on the discovery of evidence for a massive flood in the upper reaches of the Yellow River in 1920 BCE. The archaeologists identify this flood with the one brought under control by Yu 禹, who was traditionally regarded as the founder of the Xia dynasty. The Xia dynasty is often identified with early Bronze-Age culture centered on Erlitou 二里頭 culture [c. 1900-1550 BCE] in Yanshixian 偃師縣, Henan Province, but this identification remains contentious. In the article, the authors argue that the flood provides evidence for both the historicity of the Xia and its identity with Erlitou culture. This is a significant archaeological discovery, and the archaeologists should be congratulated on the ingenious detective work that allowed them to determine the cause, nature, and date of this flood.<sup>1</sup> I have previously written about Yu and the Xia dynasty as mythological constructs. I look forward to the publication of a fuller archaeological report and to further considering the issues I raise herein. In the meantime, I thank the editors of the *Journal of Chinese Humanities* for the opportunity to offer a preliminary reaction to this important discovery and its implications.<sup>2</sup>

To summarize the article: A great lake was formed after an earthquake caused a landslide in the upper reaches of the Yellow River. The eventual breach of the barrier resulted in a flood originating at Jishi 積石 Gorge in present-day Qinghai Province, in about 1920 BCE. This flood breached the natural levees of the Yellow River causing rare, extensive flooding, possibly even an avulsion in the lower reaches of the river. The flood was so catastrophic that it was preserved in the collective memory and became the basis of the accounts of a great flood controlled by Yu mentioned in early texts, such as the *Book of Documents* [*Shujing* 書經] and *Records of the Grand Historian* [*Shiji* 史記]. Since Yu was also the founder of the Xia dynasty, the date of the flood provides evidence for the beginning of that dynasty. Yu and his father (Gun 鯀) are said to have labored to control the flood for twenty-two years, so the beginning of the Xia dynasty would be about 1900 BCE. This date corresponds to the beginning of Erlitou culture and the transition from the Neolithic to the Bronze Age in the Yellow River valley. Thus, they argue, their discovery and analysis

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- 1 Qinglong Wu, Zhijun Zhao, Li Liu, Darryl E. Granger, Hui Wang, David J. Cohen, Xiaohong Wu, Maolin Ye, Ofer Bar-Yosef, Bin Lu, Jin Zhang, Peizhen Zhang, Daoyang Yuan, Wuyun Qi, Linhai Cai, and Shibiao Bai, "Outburst Flood at 1920 BCE Supports Historicity of China's Great Flood and the Xia Dynasty," *Science Magazine* 353, no. 6299 (August 5, 2016).
  - 2 Sarah Allan, "The Myth of the Xia Dynasty," *Journal of the Royal Asiatic Society* 2 (1984); idem, *The Shape of the Turtle: Myth, Art and Cosmos in Early China* (Albany: State University of New York Press, 1991), 57-74.

support the identification of Erlitou culture with the Xia, though they date its foundation somewhat later than the Xia-Shang-Zhou Chronology project.

My arguments concerning Yu and the Xia dynasty as mythological constructs were made within the context of a larger attempt to reconstruct an early system of mythical thought that, I argued, originated in the Shang dynasty [c. 1600-1046 BCE] and was later historicized. According to this argument, the idea of a Xia dynasty derived from a Shang myth about an earlier people who were their opposite—the Shang identified themselves with the ten suns, birds, the mulberry tree, the East, the sky and life; the Xia, by contrast, were identified with water creatures such as dragons and turtles, the Ruo tree, the West, the Yellow Springs, and death. Yu's control of the waters originated as part of a cosmogonic myth, and he was regarded as the founder of the Xia dynasty. When the Zhou conquered the Shang, they interpreted this myth in light of their own historical context and their need to establish political legitimacy. Thus they took the idea of a previous people defeated by the Shang ancestors as a precedent for their defeat of the Shang. This created the idea of a dynastic cycle of Xia, Shang, and Zhou, and it is through this prism that the Xia dynasty was understood in later times.<sup>3</sup>

The crux of the problem in discussing history before the Shang dynasty is that, although we now have extensive material evidence about the development of sedentary societies and civilization in China extending back almost 10,000 years, we do not have contemporaneous texts until the late Shang dynasty, around 1300 BCE. Moreover, we do not know when writing began in China. The late Shang dynasty divinations engraved on bones and shells include the names of royal Shang ancestors who received ritual offerings, but they are written from the perspective of the late Shang kings and close associates and provide little information about earlier eras. Indeed, if we did not have later records, we would know only that Tang 湯 (唐 in oracle-bone writing) was an ancestor of the Shang kings in a lineage that begins many generations earlier with Shang Jia 上甲. From the offerings proposed for him, we would know that he was a particularly powerful spirit, but we would not have any evidence with which to identify him as the founder of the Shang dynasty. All evidence about Yu and the Xia dynasty are from the Zhou dynasty [c. 1050-222 BCE] or later. This is not disputed by Wu and his colleagues, but they argue that the flood was so catastrophic it could have been retained in people's collective memory. I do not deny the possibility of this type of memory. However, as I discuss below, a closer look at the story of Yu in the ancient texts does

3 Ibid.; Sarah Allan, "Sons of Suns: Myth and Totemism in Ancient China," *Bulletin of the School of Oriental and African Studies* 44, no.1 (1981): 290-326.

not suggest a correlation with this archaeological evidence of a flood along the Yellow River. Furthermore, any attempt to date the beginning of the Xia dynasty on the basis of transmitted records will have inherent methodological problems. Nevertheless, this flood may provide a key to the rise of Erlitou culture as an early Bronze-Age society.

### Yu and the Flood

The most critical problem in linking the archaeological evidence of a catastrophic flood in the upper reaches of the Yellow River with that of the story of Yu is that the water controlled by Yu in the ancient texts is never described in the ancient texts as a flood of the Yellow River. Yu's accomplishment was not in dredging the Yellow River—or any other particular river. He dug all the riverbeds in the world, so that the waters could drain into the sea. The “Tribute of Yu [Yu gong 禹貢]” chapter of the *Book of Documents* is the *locus classicus* for the story of Yu's travails. Yu is described as traveling to all nine provinces. In each place, the names of the rivers and mountains and characteristics of the topography are given. The Yellow River is mentioned in this context, but it is never singled out as the place of the flood.

The “Tribute of Yu” in its present form was probably compiled in the Warring States period [475-222 BCE]. Nevertheless, the opening line is very similar to the opening line of the inscription on a middle Western Zhou bronze vessel, the Bingong xu 鬲公盨.<sup>4</sup> The “Tribute of Yu” reads: “Yu spread out the earth. Following along the mountains, he cut down trees. He determined the high mountains and great rivers.”<sup>5</sup> And the Bingong xu: “Sky/heaven commanded

4 This vessel was not archaeologically excavated, and some scholars question its authenticity. The proper transcription of the name of the Lord to whom it is dedicated is uncertain; it is also called the Suigong xu 遂公盨. For interpretations and transcriptions, see articles by Li Ling 李零, Li Xueqin 李學勤, Qiu Xigui 裘錫圭, and Zhu Fenghan 朱鳳瀚 in *Zhongguolishiwenwu* (2002). For a consideration of the authenticity of the vessel on the basis of its form and decoration, see Louisa G. Fitzgerald-Huber, “The X Gong Xu: Brief Notes on the Question of Authenticity, with an Excursus into the Derivation of the Xu Vessel Type,” in *The X Gong Xu: A Report and Papers from the Dartmouth Workshop*, ed. Xing Wen, *International Research on Bamboo and Silk Documents Newsletter*, Special Issue (2003). This same newsletter includes full translations by Constance A. Cook and the present author. Constance Cook has published another full translation in “Sage King Yu 禹 and the Bin Gong xu 鬲公盨,” *Early China* 35-36 (2012-2013).

5 禹敷土、隨山刊木、奠高山大川. Bernhard Karlgren, “The Book of Documents,” *Bulletin of the Museum of Far Eastern Antiquities* 22 (1950): 13 (Chinese text; translation is by author).

Yu to spread out the earth, follow along the mountains, and make channels for the rivers.”<sup>6</sup> That it was sky/heaven who ordered Yu in the inscription, rather than a human ruler, is an indication of the original cosmogonic status of the story. Another early reference is found in “Chang fa” 長發, a hymn in the “Shang song” 商頌 section of the *Classic of Poetry* [*Shijing* 詩經]. It probably draws on the Shang tradition, though it is likely to have been recorded in the Zhou. It begins, “Deep and wise was the Shang, and long-lived was its good fortune. Vast were the flooding waters, Yu arranged the lands and regions below.”<sup>7</sup> Interestingly, mention of Yu and the flood occur here in a hymn that celebrates the Shang ancestors, and there is no mention of the Xia. This is consistent with the absence of any Xia hymns in the *Classic of Poetry*.

*Rongchengshi* 容成氏 is a bamboo manuscript in the Shanghai Museum of unknown date but was buried around 300 BCE. The account in the manuscript is similar to that in the “Tribute of Yu” in its general conception; that is, the world has nine regions [*jiuzhou* 九州], and Yu travels through each one. However, the account is less elaborate and the geographical description of the provinces and rivers is not identical. In this manuscript, it is quite clear that the reason for the flood was the absence of courses for the rivers and that Yu personally dug the channels that allowed the rivers to flow freely:

<sup>23</sup>Shun administered the government for three years.<sup>8</sup> There were no clear paths through the mountains and hills and the rivers and streams did not drain out, so he established Yu as the Master of Works. When Yu had <sup>15</sup>received his command, he dressed in straw clothing and put on a bamboo hat . . .<sup>24</sup>His face was chapped, his feet filthy, and hair no longer grew on his limbs. The streams flowed without banks and the waters ran together. Yu personally took up a scoop and ploughshare. He banked up the Ming Du [i.e., Mengzhu] Marsh and <sup>25</sup>cut beds for the nine rivers; hence, Jia Province and Xu Province could begin to be inhabited. Yu cut a bed to link the Huai and Yi, so that they could flow east to the sea; hence, Jing Province and Ju Province could begin to be inhabited. Yu then cut beds to link the Lou and Yi rivers, so they could flow east to the <sup>26</sup>sea; hence, Luo Province could begin to be inhabited. Yu then cut beds linking

6 天令禹敷土、隨山、濬川。

7 濬哲維商、長發其祥、洪水茫茫、禹敷下土方。Cheng Junying, ed., *Shijing zhuxi* 詩經注析 (Beijing: Zhonghuashuju, 1991), 1034.

8 The subscript numbers refer to the slip numbers given in the original publication. Alternative readings of the Chu graphs and different slip sequences are also given therein.

the Threefold Rivers and Fivefold Lakes,<sup>9</sup> so they could flow east to the <sub>27</sub>sea; hence, Jing Province and Yang Province could begin to be inhabited. Yu then cut beds linking the Yi and the Luo, together with the Chan and Jian, so they could flow east to the [Yellow] River; hence, Yu Province could begin to be inhabited. Yu then cut beds linking the Jing and the Wei, so they could flow north to the [Yellow] River; hence, Ju Province could begin to be inhabited. Yu then made five hundred valleys, running south from the Han, <sub>28</sub>and five hundred valleys, running north from the Han.

When all the people under the sky were settled, then he prepared a feast. He appointed Hou Ji to be the supervisor of the fields.<sup>10</sup>

The commission to Yu was given by Shun, and, after Yu had accomplished his task of making the riverbeds, Shun appointed Hou Ji 后稷, the culture hero who taught people agriculture.

“Canon of Yao [Yao dian 堯典]” is the first chapter of the *Book of Documents*. It was probably also compiled in the Warring States period, but it is a multi-layered text and includes names for the four directional quadrates and their peoples that can be correlated to those of the four quadrates and their winds in Shang oracle-bone inscriptions.<sup>11</sup> I have previously argued that the “Canon of Yao” derives from a cosmogonic myth and that Yao 堯 was a transformation of Shang Di 上帝 [Lord on High], whereas Shun was Jun 俊 (駿), the first human ruler and an ancestor of the Shang.<sup>12</sup> In any case, in the “Canon of Yao,” Yao

9 The terms “Threefold Rivers” and “Fivefold Lakes” follow the translation in Vera Dorafeeva-Lichtmann, “Ritual Practices for Constructing Terrestrial Space (Warring States-Early Han),” in *Early Chinese Religion*, ed. John Lagerwey and Marc Kalinowski (Leiden: Brill, 2009), 633, as does my understanding of how the waters were linked.

10 For the original publication of this manuscript, see Ma Chengyuan 馬承源, ed., *Shanghai bowuguan cang zhanquo chu zhu shu* 上海博物館藏戰國楚竹書 [Chū-Script Bamboo Slip Manuscripts in the Shanghai Museum Collection] (Shanghai: Shanghai guji, 2001), 2: 91-146, 247-293. This translation is based on my own modern character edition; see Sarah Allan, *Buried Ideas: Legends of Abdication and Ideal Government in Early Chinese Bamboo-Slip Manuscripts* (Albany: SUNY Press, 2015), 239-242.

11 Allan, *The Shape of the Turtle*, 79-83; Hu Houxuan 胡厚宣, “Shi Yindaiqiunianyusi fang he si fang feng de jisi 釋殷代求年於四方和四方風的祭祀,” *Fudanxuebao* 1 (1956).

12 After the first line of the “Yao Dian [Canon of Yao],” the protagonist is called Di rather than Yao. See Allan, *The Shape of the Turtle*, 34, and “Sons of Suns.” As Jun, Shun would be the husband of Xihe, the mother of the ten suns, and identifiable with Di Ku 帝嚳, the first Shang ancestor. In Warring States period Chu-script bamboo-slip manuscripts, Shun’s name is consistently written with the *yun* 允 phonetic, which provides support for the identification with Jun that was not available earlier.

(or Di) establishes harmony among the people and then orders the brothers Xi 羲 and He 和 to “calculate and delineate the [movements of] the sun, moon, and other celestial bodies and respectfully give the people the seasons.”<sup>13</sup> After the sky is in order, he turns to the earth, which is flooded with water everywhere, making human habitation difficult:

Di said, Oh you, Si Yue (Four Peaks), voluminously the waters everywhere are injurious, Extending to embrace the mountains and rise above the hills, so vast, they swell up to sky/heaven. The people below are groaning so.<sup>14</sup>

Yao first appoints Gun to calm the flood, but Gun is not successful. Then, after Shun has become the ruler, he appoints Yu, who successfully controlled the flooding, followed by Hou Ji, who introduces agricultural practices. Thus, people were able to grow crops and feed themselves.<sup>15</sup>

Hou Ji was the first ancestor of the Zhou, born miraculously after his mother trod on a giant footprint. This association of Yu and Hou Ji—the waters brought under control and then the introduction of agriculture—is common and is an indication of the cosmogonic nature of the story. In many Zhou and Han texts, Gun, Yu, and Yu’s son, Qi 啟, have supernatural characteristics, such as miraculous births and deaths and the ability to transform themselves into water creatures.<sup>16</sup> However, even when Yu seems to be a human ruler, digging the riverbeds to prepare the world for agriculture was a supernatural feat.

Most texts do not explain why the world was flooded. The *Rongchengshi* passage cited above, which attributes it to the absence of passages for the water to flow through the mountains, is an exception. In the “Canon of Yao,” no cause is given. However, it mentions Gong Gong 共工 as a figure of rebellion. Gong Gong and Yu are often textually linked, and Gong Gong’s destruction of Buzhou 不周 Mountain, a pillar that joined the earth and sky, may be the cause of the flood. The sky then tilted downward in the northwest, and the waters on

13 歷象日月星辰，敬授民時。

14 帝曰。咨四岳。湯湯洪水方割。蕩蕩懷山襄陵。浩浩滔天。下民其咨。Karlgrén, “The Book of Documents,” 2-3 (Chinese text, author’s translation).

15 I do not think that the years attributed to the work of Gun and Yu in the *Shangshu* and *Shiji* should be considered a factual recording. Nevertheless, in the texts, their work in allaying the flood is not described as immediately successive, so, even if Gun worked for nine years and Yu for thirteen, the time spent should not be added together to make twenty-two consecutive years.

16 Allan, “The Myth of the Xia,” 249-252.



earth flowed toward the southeast.<sup>17</sup> If there was water, but it did not have any beds, this tilting of the earth would have caused flooding everywhere. Another possibility is that the waters came from underground. There are many natural springs in the Central Plains, which was presumably the source of the idea that the underworld was the watery “Yellow Springs” [*huangquan* 黃泉]. Indeed, in the “Heavenly Questions [Tianwen 天問],” the flooding waters controlled by Yu are called *hongquan* 洪泉 [flooding springs].<sup>18</sup>

In sum, the story of Yu and the flood are aspects of a cosmogonic myth in which the earth was habitable and conducive to farming after Yu had dug riverbeds, which directed the water in a controlled manner. In the texts that mention the flood, the Yellow River is only mentioned in the context of Yu’s travel through the nine regions. Although the destruction caused by the outburst flood in the upper reaches of the Yellow River in 1920 BCE was particularly catastrophic, there is no reason to believe that any single flood was the source of the story of Yu. In ancient times, China had many floods as well as springs that burst up from under the ground. That people should have imagined that the world was once covered with water is more likely to have resulted from a combination of these conditions than from any particular flood.

### The Problem of the Xia

Because Yu is traditionally regarded as the founder of the Xia dynasty, the authors of this article use the identification of Yu’s flood with that of the Jishi flood to date the beginning of that dynasty. But, even if we assume that Yu, with all his supernatural aspects, was based upon a human ruler, the textual evidence that Yu founded a dynastic state is problematic. According to the *Records of the Grand Historian*, Yu was succeeded by his son, Qi, but Qi’s successor, Tai Kang 太康, immediately lost the state and fled into exile.<sup>19</sup> It is difficult to understand how a ruling dynasty can be considered to have been founded when the state was immediately lost. It also makes any attempt to date the foundation of the Xia problematic. Three generations later, from Yu 予 on, we have a list of kings but almost no information except their names. Indeed, so

17 For textual support for the idea that Gong Gong was the cause of the flood, see Mark Edward Lewis, *The Flood Myths of Early China* (Albany: SUNY Press, 2006), 55-60.

18 *Chu ci* 楚辭 [*Lyrics of Chu*] 3/6b (Sibucongkan edition).

19 Lü Simian 呂思勉 suggested that the interregnum was an insertion. See GuJiegang 顧頡剛, ed., *Gushibian* 古史辨 [*Debates on Ancient History*] (Shanghai: Shanghai guji, 1982), 7 (*xia* 下), 282-290.



little information about these figures is available that it may in fact be a list of ancestors. But whose ancestors were they? And did they rule Erlitou? Or somewhere else? And if they were Xia “kings,” who was the first to actually rule the state—Yu 禹, his son Qi, or perhaps Yu 予, even though Yu 予 is not present in later historiography? These questions cannot be answered without writings earlier than those discovered to date. My argument that the Shang had a myth about a Xia dynasty that was reinterpreted by the Zhou in light of their own historical context cannot be proved without earlier writing either. Nevertheless, it provides an alternative explanation for the presence of a Xia dynasty in transmitted texts. Thus, it places the burden of proof on those who regard the later tradition of such a dynasty as historical in nature.

Even more important, understanding the Xia as the first “dynasty” in a succession of Xia, Shang and Zhou involves a conceptual problem. The reason is that the theory of dynasties that were subject to a changing celestial mandate is implicit in this formulation. This theory made sense in the historical context of the early Zhou rulers who had just defeated a long-established state and adopted many of its features. But it would not have had any meaning to people who lived in the early second millennium BCE and did not know that other dynasties were yet to come. Nevertheless, the association of the Xia dynasty with Erlitou has an undeniable rationale, even if it cannot be proven. Erlitou represents a state-level early bronze culture, it precedes the Shang, and its location corresponds generally to that in the later textual tradition. However, this interpretation of the formative significance of Erlitou in the development of the state is a modern historical paradigm. The first rulers of Erlitou would have looked backward for their comparisons, not forward, and we have no means of understanding how they saw themselves in relationship to their ancestors or earlier Longshan culture leaders and contemporaneous societies.

### An Alternative Interpretation of the Effect of the Flood

Because the report in *Science* is necessarily brief, many things are left unexplained. I am uncertain how the authors understand the relationship between this flood and the formation of Erlitou culture in practical terms. If this flood was powerful enough to produce major flooding in the middle reaches of the Yellow River, would a late Neolithic ruler have had the technological means to prevent its flooding by dredging it? We would expect the devastation of a flood to lead to social turmoil. How could such a flood, on the contrary, have assisted a ruler of Erlitou in establishing a higher level of social complexity and political organization?

The coincidence of this outburst flood and the formation of Erlitou culture around 1900 BCE is nevertheless intriguing, and I propose an alternative scenario to explain it. By the time it traveled to the middle reaches of the Yellow River, where Erlitou culture is centered, the flood had weakened. According to the Peking University archaeologist Sun Hua 孫華, the layers of pure silt that indicate flooding are relatively easy to identify but have not been found at the Erlitou site.<sup>20</sup> However, the Jishi Gorge is in a region dominated by Qijia culture [c. 2300-1500 BCE]. The Qijia were the earliest bronze-casting culture in China, and they had already developed bronze metallurgy. The technology was still relatively simple, but it included at least the use of two-part molds. Archaeologists have recognized cultural interactions between the Qijia and many other cultures. Artifacts found at both Qijia and Erlitou culture sites include turquoise-inlaid bronze plaques, ring-handled bronze knives, and pottery pouring vessels with spouts and dome-shaped lids.<sup>21</sup> If massive flooding in the upper reaches of the Yellow River caused the movement of people from the Qijia culture region to the middle reaches, then the migrants to the central plains with knowledge of metallurgy could have spurred the development of an indigenous bronze-casting technology in the Erlitou region. In this way, the flooding in the upper reaches of the Yellow River and the development of the state-level Erlitou society were indirectly connected.

### Works Cited

- Allan, Sarah. *Buried Ideas: Legends of Abdication and Ideal Government in Early Chinese Bamboo-Slip Manuscripts*. Albany: SUNY Press, 2015.
- Allan, Sarah. "The Myth of the Xia Dynasty." *Journal of the Royal Asiatic Society* 2 (1984): 242-256.
- Allan, Sarah. *The Shape of the Turtle: Myth, Art and Cosmos in Early China*. Albany: SUNY Press, 1991.
- Allan, Sarah. "Sons of Suns: Myth and Totemism in Early China." *Bulletin of the School of Oriental and African Studies* 44, no. 2 (1981): 299-330.

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- 20 As quoted in Wu Nan 吳楠 and Zhang Chunhai 張春海, "Shiqianhongshui zhengming Xiachao cunzai yinqi xueshulunzheng 史前洪水證明夏朝存在引起學術論爭," *Wenhua*, August 17, 2016 (<https://kknews.cc/culture/6lpzxp.html>).
- 21 Li Shuicheng 李水城, "Xibei yu zhongyuan zaoqi ye tong ye de quyu tezheng ji jiaohu zuoyong 西北與中原早期冶銅業的區域特征及交互作用," *Kaoguxuebao* 3 (2005); Li Liu and Xingcan Chen, *The Archaeology of China* (Cambridge: Cambridge University Press, 2012), 331.

- Cheng, Junying 程俊英, ed. *Shijing zhuxi* 詩經注析. Beijing: Zhonghuashuju, 1991.
- Cook, Constance A. "Sage King Yu 禹 and the Bin Gong xu 鬲公盃." *Early China* 35-36 (2012-2013): 69-103.
- Dorafeeva-Lichtmann, Vera. "Ritual Practices for Constructing Terrestrial Space (Warring States-Early Han)." In *Early Chinese Religion*, ed. John Lagerwey and Marc Kalinowski, 595-644. Leiden: Brill, 2009.
- Fitzgerald-Huber, Louisa G. "The *X Gong Xu*: Brief Notes on the Question of Authenticity, with an Excursus into the Derivation of the *Xu* Vessel Type." In *The X Gong Xu: A Report and Papers from the Dartmouth Workshop*, ed. Xing Wen, ed. *International Research on Bamboo and Silk Documents Newsletter Special Issue* (2003): 34-43.
- Gu Jiegang 顧頡剛, ed. *Gushibian* 古史辨 [Debates on Ancient History]. Shanghai: Shanghai guji, 1982.
- Hong Xingzu 洪興祖 (Song Dynasty), ed. *Chu ci* 楚辭補注. Sibucongan edition, Shanghai: Shangwuyinshuguan, 1927-1935.
- Hu Houxuan 胡厚宣. "Shi Yindaiqunianyusi fang he si fang feng de jisi 釋殷代求年於四方和四方風的祭祀." *Fudanxuebao* 1 (1956): 49-86.
- Karlgren, Bernhard, trans. "The Book of Documents." *Bulletin of the Museum of Far Eastern Antiquities* 22 (1950): 1-81.
- Lewis, Mark Edward. *The Flood Myths of Early China*. Albany: SUNY Press, 2006.
- Li Ling 李零. "Lun [Bin] Gong xu faxian de yiyi 論【鬲】公盃發現的意義." *Zhongguolishiwenwu* 6 (2002): 23-27.
- Li Shuicheng 李水城. "Xibeiyu zhongyuan zaoqi yeyong de quyu tezhenqing ji jiaohu zuoyong 西北與中原早期冶銅業的區域特征及交互作用." *Kaoguxuebao* 3 (2005): 239-278.
- Li Xueqin 李學勤. "Lun [Sui] Gong xu ji qi zhongyao yiyi 論【遂】公盃及其重要意義." *Zhongguolishiwenwu* 6 (2002): 4-12.
- Liu, Li, and Xingcan Chen. *The Archaeology of China*. Cambridge: Cambridge University Press, 2012.
- Ma Chengyuan 馬承源, ed. *Shanghai bowuguan cang zhanguo chu zhu shu* 上海博物館藏戰國楚竹書 [Chu-Script Bamboo Slip Manuscripts in the Shanghai Museum Collection]. Shanghai: Shanghai guji, 2001.
- Qiu Xigui 裘錫圭. "[Bin] Gong xumingwenchushi 【鬲】公盃銘文考釋." *Zhongguolishiwenwu* 6 (2002): 13-22.
- Sima Qian 司馬遷. *Shiji* 史記 [Records of the Grand Historian]. Beijing: Zhonghuashuju, 1959.
- Wu Nan 吳楠 and Zhang Chunhai 張春海. "Shiqianhongshui zhengming Xiachao cunzai yinqi xueshulunzheng 史前洪水證明夏朝存在引起學術論爭." *Wenhua*, August 17, 2016 (<https://kknews.cc/culture/6lpzxp.html>).
- Wu, Qinglong, Zhijun Zhao, Li Liu, Darryl E. Granger, Hui Wang, David J. Cohen, Xiaohong Wu, Maolin Ye, Ofer Bar-Yosef, Bin Lu, Jin Zhang, Peizhen Zhang,

Daoyang Yuan, Wuyun Qi, Linhai Cai, and Shibiao Bai. "Outburst flood at 1920 BCE supports historicity of China's Great Flood and the Xia dynasty," *Science Magazine* 353, no. 6299 (August 5, 2016): 579-582.

Zhu Fenghan 朱鳳瀚. "[Bin] Gong xumingwenchushi 【鬲】公盃銘文初釋." *Zhong-guolishiwenwu* 6 (2002): 13-22.