THE *BAMBOO ANNALS* REVISITED: PROBLEMS OF METHOD IN USING THE CHRONICLE AS A SOURCE FOR THE CHRONOLOGY OF EARLY ZHOU, PART 1

By DAVID W. PANKENIER
Lehigh University, Bethlehem, Penn.

The challenge of establishing the chronology of the early Zhou dynasty, especially the date of the Zhou Conquest of Shang, periodically arouses the intense interest of scholars. Down the centuries interest in the general problem has revived whenever advances in calendrical, astronomical, or textual knowledge seemed to offer the promise of a breakthrough. Extraordinary efforts have repeatedly been brought to bear, but until quite recently little progress was achieved in verifying benchmarks prior to 841 B.C., a date already regarded as secure in the time of Sima Qian 司馬遷 toward the end of the second century B.C.

Since at least the end of the Warring States period (403–221 B.C.) three main types of evidence have invariably been exploited in studying the problem of the early chronology: annalistic records of the reigns of various feudal princes and Zhou kings, occasional calendrical dates giving the month and cyclical day of noteworthy historical events, and sparse astronomical records of eclipses, lunar phases, and the like. All three sources of transmitted data are deficient in that they are fragmentary, of questionable reliability, and often contradictory, a frustrating state of affairs which was already deplored by Sima Qian in the introduction to his reconstruction of the chronology.

Research on historical chronology languished from the Tang dynasty until the first half of the present century when both Western and Chinese scholars again took up the question of the historical evidence for the early dynasties. Redoubled philological efforts, focusing generally on the same three types of evidence available to traditional scholars since the discovery of the *Bamboo Annals* chronicle 竹書紀年 last galvanized the field in the third century, have succeeded largely in generating an embarassment of solutions to the dating of the Zhou Conquest clustered in the mid to late eleventh century B.C., without notably advancing the state of our knowledge. None of these comprehensive studies, usually rendered conjectural by a combination of special pleading and a positive lack of conclusive evidence, has been able to persuade many scholars to embrace its conclusions, or even to abandon the traditional date of 1122 B.C. first proposed by Liu Xin 劉歆 (d. A.D. 24) in the mid-Han dynasty.

Within the past two decades, study of the early chronology has been revolutionized by developments unprecedented since the discovery of the *Bamboo Annals*. First, analysis of the oracle bone inscriptions of the Shang dynasty transformed our understanding of the historical background to the conflict between Shang and Zhou and prompted a re-assessment of the authenticity of annalistic accounts of the period preserved in *Shiji* 史記 and in transmitted Zhou texts like *Shang shu* 尚書, *Yi Zhou shu* 逸周書 and the *Bamboo Annals* (*BA*). In addition, chronological research focusing primarily on the Shang inscriptions made it possible to close in on the date of the founding of Zhou from the perspective of the preceding dynasty and pointed strongly toward a date in the middle decades of the eleventh century for the overthrow of Shang. The fact that the transmitted version of the *Bamboo Annals* dates the event to 1050 B.C. has lent added impetus to the efforts to validate the chronological system integral to that text. This system, sometimes defective,

occasionally contradictory, and in part the result of late interpolation, seemed to hold the promise of yielding vital new clues to the chronology if only it were taken seriously and subjected to the right kind of rigorous analysis.

Second, the wealth of Western Zhou bronze ritual vessels archaeologically excavated in China since 1950, many of them carrying lengthy, dated inscriptions, seemed to hold the promise of establishing once and for all the reign lengths of the Western Zhou kings. If this sequence of reigns could be fixed in relative terms, other dating information contained in the inscriptions—lunar phase, month, cyclical date—might permit the actual reconstruction of the calendar itself and conclusively establish the date of the Zhou Conquest.

Intensive research in both areas has led to some remarkable results, especially when it comes to verifying scientifically historical information found in the *Bamboo Annals* bearing directly on the date of the Zhou Conquest. In the case of the Western Zhou bronze inscriptions, however, apart from considerable progress in establishing a developmental sequence and in analysing the historical content of individual inscriptions, solving the puzzles posed by the dating formulas in the inscriptions has proved an intractable problem. Despite claims to the contrary on the part of scholars for whom reconciliation of the dated inscriptions with their reconstructions of the absolute chronology of Western Zhou is an article of faith, the promise of the inscriptions to settle the chronology once and for all has not been fulfilled.

In what follows I shall be concerned for the most part with certain methodological issues encountered in studying the *Bamboo Annals* and with the implications for the analysis of the chronology of early Zhou. My approach to the *Bamboo Annals* and to the dating of the Zhou Conquest has consistently been a focused one, in contrast to the more comprehensive agendas of other scholars who have sought to establish in detail the entire chronology of Western Zhou. Not surprisingly, my major conclusions have been at odds for a decade with those of others, and it is the purpose of this article, and that of a second on the interpretation of the bronze dating formulas, to examine critically the reasons for these contrasting results.

Questions of method

In 'Astronomical dates in Shang and Western Zhou'[1] I suggested that a focused astronomical approach to the problem of dating the transitional period from Shang to Zhou could be based primarily on the chronology of the Conquest period found in the *Bamboo Annals* 今本竹書紀年. In this way it would not be necessary to begin by reconstructing the entire subsequent chronology of Western Zhou. Unlike traditional approaches which had already yielded an abundance of 'solutions', the method proposed did not demand at the outset that one overcome the formidable obstacles standing in the way of reconciling a hypothetical unitary calendar with still obscure dating formulas in the bronze inscriptions. I expressed reservations about alternative approaches that rely heavily on unproven assumptions about the meaning of the inscriptional lunar phase terms and about the authenticity of dated passages attributed to the 'Wu cheng' chapter of *Shangshu*.'[2]

It seemed to me that, by trying to accomplish too much at once, such efforts ran the risk of demonstrating little if anything convincingly. Valid conclusions about the *Bamboo Annals*, in particular, would be tainted by the conjectural

[1] *Early China* 7 (1981–82), 2–37.

[2] These reservations have proved justified, as is shown by the analysis of the lunar phase problem in my 'Reflections of the lunar aspect on Western Zhou chronology' (*T'oung Pao* [1992]). Briefly, this article, which expands upon a study of the problem in Li Changhao 黎昌顥 (ed.),

nature of corollary hypotheses about the meaning of obscure inscriptional dating formulas, and this in turn would render even firm conclusions about the *Bamboo Annals* unpersuasive. Rather than assuming that all three sources of primary chronological evidence, the *Bamboo Annals*, the bronze inscriptions, and other literary evidence contained in, for example, *Shangshu*, or *Shiji* 史記, necessarily refer to the *same* chronological system, it seemed to me more advisable to devise an independent test of the *Bamboo Annals* chronology first, without prejudging the outcome, to determine whether such a reconstruction could meet reasonably objective standards of proof.[3] Otherwise, if the main test of coherence and validity becomes whether various types of evidence can be brought into conformity with a single hypothesis, generally a presumptive date for the Zhou Conquest, the procedure begins to bear an uncomfortable resemblance to one criticized by Irving Rouse: 'The investigator formulates a "Ruling Theory" and seeks to convince us that it is correct. He does not actually test his theory; he only offers additional evidence to support it—more evidence of the same kind. One can "prove" any plausible . . . hypothesis in this manner, no matter what its validity relative to alternative hypotheses, for the reasoning is circular.'[4]

Other scholars, notably Chou Fa-kao and David Nivison, have advocated an all-inclusive approach, formulated most explicitly by the latter:

> My procedure will be to develop at first several independent lines of argument leading to the same conclusion about the dating of the beginning of Chou. Some of these lines of argument, in particular, will require certain kinds of analysis of the data bearing on the dates of the following kings, analysis that could not be carried out successfully unless my conclusions about these dates are correct. . . . When complete, the whole interconnected argument is validated by its own coherence. Some individual statements in this structure of argument would not bear examination if taken by themselves, and if considered in this way they will seem tendentious. But it is the whole structure that should be the object of critical appraisal; and that structure will be found to be tied to a firm empirical base at certain points that are logically connected to every other part of it.[5]

To me the advantages of the alternative 'benchmark' approach are obvious. For one thing, in view of the uncertainty about calendrical practices in Western Zhou, such an approach recognizes that it is neither necessary nor advisable to claim that 'the problem of the Conquest date and the problem of

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Zhonguo tianwen xue shi 中國天文學史 (Beijing: 1981), shows that the terms *chuji* 初吉, *jishengpo* 既生霸, *jiwang* 既望, and *jisipo* 既死霸 could not be the names of four lunar phases. *Chuji* 初吉, strictly speaking, does not denote a lunar phase at all, but is a calendrical term referring to the first ten-day week of the month during which each of the 'heavenly stems' *tiangan* 天干 makes its initial appearance. The remaining three terms refer to the waxing fortnight, the day or days of full moon, and the waning fortnight, respectively. In addition, the article demonstrates that the dated records in *Han shu* 漢書 quoted from the 'Wu cheng' 武成 chapter of *Shang shu* 尚書 show unmistakable evidence of manipulation as a result of attempts to establish the calendar of the Conquest year by the Yin calendar school 殷曆家 of chronology in the fourth century B.C.

[3] This is all the more desirable in the case of the *Bamboo Annals* since some chronological data it contains have already been proven to be more reliable than those contained in *Shiji* 史記; see Henri Maspero, 'La chronologie des rois de Ts'i au IV^e^ siècle avant notre ère', *T'oung Pao*, 25, 1928, 367–86.

[4] Irving Rouse, *Migrations in prehistory: inferring population movement from cultural remains* (New Haven: Yale University Press, 1986), 13.

[5] David S. Nivison, 'The dates of Western Chou', *Harvard Journal of Asiatic Studies*, 43.2, 1983, 484; Chou Fa-kao 周法高, 'Xi Zhou niandai xin kao 西周年代新考', *Dalu zazhi* 大陸雜誌, 68.5, 1984, 1.

the dating of reigns of later kings cannot be separated; the dating of the kings must be right if the dating of bronzes is to be mathematically possible; and the Conquest must be correctly dated if the analysis of the literary terms [i.e., a four-phase interpretation of the lunar phases] is to work.'[6]

Thus, for example, applying this method in his comprehensive reconstruction of the chronology of the Western Zhou kings, for which something approaching mathematical rigour is claimed, David Nivison assigns the date 903 B.C. (and/or 901 B.C.) to the beginning of Yi Wang's 懿王 reign, in part on the basis of a famous 'double-dawn' solar eclipse record from that king's first year (Chou Fa-kao, in contrast, assigns Yi Wang the dates 917–909). But an earlier dating of that eclipse to 899 B.C. by Pang Sunjoo has now been independently confirmed by astronomers studying the problem of ancient eclipses,[7] so that it is obviously incorrect to state that 'the dating of the kings must be right if the dating of the bronzes is to be mathematically possible.' Clearly, using David Nivison's method and assumptions (from which Chou Fa-kao departs only in minor detail) it is quite possible to date incorrectly not just one, but at least a dozen bronze inscriptions in the reign of a single king. Yet, here we are said to have a 'firm empirical base which is logically connected' to every other part of the reconstructed chronology. What happens then, one must ask, to the entire reconstructed edifice of Western Zhou chronology, the proposed date of the Conquest, the analysis of the lunar phases, and the argument from coherence, when the date 903 B.C. proposed for Yi Wang is demonstrably wrong by four years? If it is true that scientific knowledge advances by disproofs, in the present case where it is the whole structure that is meant to be the object of critical appraisal, one is left to wonder what has been proved when few of the underlying assumptions have been tested independently, and when it is possible for the same method to generate not only two radically different reconstructions of Western Zhou chronology as a whole but also two different dates for the Conquest five years apart.[8]

[6] Nivison, 'The dates of Western Chou', 492, also 487, 491.

[7] Pang Sunjoo 方善柱, 'Xi Zhou niandaixue shang de ji ge wenti' 西周年代學上的幾個問題, *Dalu zazhi* 51.1 (1977), 15; David W. Pankenier, 'F. R. Stephenson and M. A. Houlden, *Atlas of historical eclipse maps: East Asia 1500* B.C.–A.D. 1900: a review article, *BSOAS*, LI, 3, 1988, 523–4; Kevin Pang *et al.*, 'Computer analysis of some ancient Chinese sunrise eclipse records to determine the earth's past rotation rate', *Vistas in Astronomy*, 31, 1988, 842.

[8] Chou Fa-kao, 'Xi Zhou niandai xin kao', basing himself on the same corpus of bronze inscriptions containing complete dating formulas, and using virtually the same definitions for the lunar phase terms as David Nivison, arrived at dates for the bronzes which agree completely with Nivison's (i.e., both as to reign and date) in only 9% of cases, or five inscriptions out of fifty-three. In an additional ten cases where the two agree about the assignment of an inscription to the reign of a particular king, they disagree as to the year because their reconstructions of the dates and lengths of reign of the eight kings Cheng 成 through Yi 夷 differ considerably:

	Chou Fa-kao		Nivison	
#Wu Wang	1045–1043	(3 years)	1049–1043	(7 years)
Cheng Wang	1042–1019	(24 years)	1042/0–1006	(37 years)
Kang Wang	1018–993	(26 years)	1005/3–978	(28 years)
Zhao Wang	992–974	(19 years)	977/5–957	(21 years)
Mu Wang	973–947	(27 years)	956/4–923	(34 years)
Gong Wang	946–918	(29 years)	922/0–904	(19 years)
Yih Wang	917–909	(9 years)	903/1–883	(21 years)
Xiao Wang	908–894	(15 years)	882/76–868	(7/15 years)
Yi Wang	893–860	(34 years)	867/5–860	(8 years)
#Li Wang	859–842	(18 years)	859/7–842	(18 years)
#Gonghe	841–828	(14 years)	841–828	(14 years)
#Xuan	827–782	(46 years)	827/5–782	(46 years)
#You	781–771	(11 years)	781/79–771	(11 years)

The difference in regard to Wu Wang's reign is merely one of definition. For Nivison's alternative date of 1040 for the Conquest, see his, '1040 as the date of the Chou Conquest', *Early China*, 8, 1982–83, 76–8.

The point here is not to denigrate the efforts that produced these reconstructions of the Western Zhou chronology, but simply to suggest that something is seriously amiss with the general method and with certain assumptions on which the reconstructions are based. What we ought to be aiming for is the sort of stepwise approach that John R. Platt has denoted by the term 'strong inference': 'the method of most rapid progress in such complex areas, the most effective way of using our brains, is going to be to set down explicitly at each step just what the question is, and what all the alternatives are, and then to set up crucial experiments to try to disprove some.'[9]

This is not the place to undertake a detailed critique of the arguments adduced in the interpretation of the individual bronze inscriptions, which analysis is, ultimately, crucial. It is appropriate to suggest, however, that methods which at this stage permit such flexibility may be legitimately challenged as not living up to the claim of mathematical rigour. Throughout reconstructions based on the dating of bronze inscriptions, such as those of Nivison, Chou and others, various assumptions about calendrical conventions come into play, frequently in concert, which permit the month in question to vary by plus or minus one, and/or the precise location within the lunar phase to vary by up to seven or eight days. This makes for considerable latitude when it comes to placing specific inscriptions in the reconstructed calendar of years, months, and cyclical signs. If, in addition, as in Nivison's reconstruction, the assignment of otherwise incompatible inscriptions is achieved by dating them two years later than would be expected on the assumption that each king maintained two distinct royal calendars commencing two years apart, the cyclical dates defining a given month can conveniently be increased by 18 days: if the first day of the first month of 922 B.C. was day *guiyou* (10), the first day of the first month of 920 B.C. will be day *xinmao* (28).

Thus, if one is hard pressed to fit an inscription in a particular lunar quarter of a given month, the chances of success improve significantly if a second alternative is assumed to exist two years later. In this way a total of 48/60 (i.e., days 10 to 58) or 80% of all possible sexagenary designations now become available as target dates. If, in addition, one also allows the expedient (as Nivison does) of choosing a target month 29 or 30 days earlier or later depending on which definition of 'first month' is adopted for that particular year (yielding in the example above months beginning on days 57 or 58), then well over 100% of all possible sexagenary combinations (i.e., days 10–58 plus days 58–28 in the example from 920 above) become potentially available, while at the same time the lunar phase can in certain cases be varied by up to a fortnight. That being the case, it is difficult to see how the numerical imperatives implicit in the procedure tell us more about Western Zhou calendrical conventions than about the degree of permissiveness necessary for the dating method to succeed.

Small wonder that such a method can allow the misdating (or misidentification) of at least a dozen inscriptions in the reign of a single king. The fact that Chou Fa-kao was able to place the identical fifty-three inscriptions within the same calendar of two hundred years without resorting to the expedient of dual royal calendars underscores the tenuousness of that thesis.[10] Underlying this method is the paradoxical proposition that it is possible to proceed from the assumption that the Western Zhou calendar was not fixed, but rather quite fluid, to the conclusion that imperfectly understood inscriptions can be dated

[9] 'Strong inference', *Science*, 146.3642, 1964, 350, 352.

[10] For Nivison's argument see 'The dates of Western Chou', 528 ff. For a dispassionate study that addresses the methodological shortcomings of various attempts to reconstruct Western Zhou chronology, including those of David Nivison, Chou Fa-kao, Shirakawa Shizuka 白川靜, Ma

with absolute precision. Add to this the unjustified assumption that all the inscriptions relate to a single official calendar regardless of their provenance,[11] and it should not be surprising that divergent chronological schemes can be devised to fit the same inscriptional evidence, or conversely, that numerous inscriptions can easily be misdated. What is true of the dozen bronze inscriptions assigned to the reign of Yi Wang is certainly also true of others as well, even if no equally conclusive way of disproving their attribution on astronomical, epigraphic, or typological grounds currently exists. One thing is abundantly clear, however—the two alternative chronologies for Western Zhou proposed by Chou Fa-kao and David Nivison in no way validate their conclusions about the dating of the Zhou Conquest of Shang. Rather, it is possible to demonstrate that misconceptions about the validity of the method described above have introduced unnecessary confusion into the critical assessment of the most important source of literary evidence bearing on the dating of the Conquest period—the *Bamboo Annals*. It is my intention, therefore, to refocus attention on that text here in an effort to clarify what can be asserted with confidence about the chronology of the Conquest period and to take account of studies that have appeared since the publication in 1983 of my 'Astronomical dates in Shang and Western Zhou'.

Systematic error in the Bamboo Annals *disclosed by astronomy*

Earlier I reported on the astronomical dates of the planetary portents that evidently signalled the bestowal of Heaven's Mandate on the Three Dynasties Xia, Shang, and Zhou.[12] These data together with the dates of certain other events accompanying the Zhou Conquest make it possible to analyse in isolation the chronology and internal composition of significant portions of the *Bamboo Annals* without relying on potentially misleading assumptions about the dating of later bronze inscriptions and without first attempting to reconcile the *Bamboo Annals* with chronologies foreign to the *Bamboo Annals* system. It is apparent from the astronomical dates of events that certain distortions have been introduced into the *Bamboo Annals* chronology in the course of its redaction, both prior to burial of the work in 296 B.C. and subsequent to its discovery in A.D. 281. Moreover, the systematic nature of the distortions that have been worked on the *Bamboo Annals* chronology make it clear that, then as now, they very probably came about as a direct result of unsuccessful attempts to establish by some means the dates of the Zhou Mandate and Conquest. By studying the effects of these early revisions of the chronology of the Conquest period, it is possible to trace the developments that produced the system now found in the *Bamboo Annals* without relying on contingent hypotheses originating in solutions to the chronology current during late Zhou and Han, or, for that matter, devised within the past few years.

Chengyuan 馬承源, Liu Qiyi 劉啓益 and He Youqi 何幼琦, see Asahara Tatsuro 淺原達郎, 'Western Zhou bronze inscriptions and calendars', 西周金文と暦 *Tōhō gakuhō* 東方學報, 58, 1986, 71–120. Among other things, Asahara concludes (pp. 75, 100) that the significance of the inscriptional lunar terms is still not understood, and he states flatly (p. 75) that the explanatory value of the four-phase interpretation of the lunar terms in unproven.

[11] On this point, see for example Zhang Peiyu, 'Early China Forum', *Early China*, 15, 1990, 142.

[12] Pankenier, 'Astronomical Dates'; David W. Pankenier, 'Early Chinese Astronomy and Cosmology: The "Mandate of Heaven" as Epiphany', Stanford University Ph.D. dissertation, 1983; David W. Pankenier, '*Mozi* and the dates of Xia, Shang, and Zhou: a research note', *Early China*, 9–10, 1983–85, 175–83; David W. Pankenier (班大爲), 三代的天文觀察和五行交替理論的起源 (Astronomical observation in the Three Dynasties period and the origin of five phases correlative theory), in *Yinxu bowuyuan yuankan* 殷墟博物苑苑刊, 1,1989, 183–8. (Data in tables 1–4 after Pankenier, 'Early Chinese astronomy and cosmology', 1983).

As I have attempted to show, a number of facts have come to light which, taken together, reveal the existence of a consistent four-year backdating of events throughout the *Bamboo Annals* chronology of Shang and Western Zhou (table 1). For example: (i) the date in the *Bamboo Annals* assigned to the planetary event accompanying the founding of the Shang Dynasty is 1580 B.C.—in fact, this phenomenon occurred in 1576; (ii) the 'gathering of planets' in Cancer that signalled the conferral of the Mandate on King Wen actually occurred in 1059 B.C., although the *Bamboo Annals* gives 1071 and the location Scorpius (in this case the discrepancy of twelve years will be shown to comprise both the general four-year component and a 'local' eight-year component arising from a Han period misconception about the actual location of the planetary conjunction, about which more later); (iii) in the biography of Shu Xi 束晳 (261–303) in *Jin shu* 晉書 there appears a quotation from the original, unreconstructed version of the *Bamboo Annals* which Shu Xi had a hand in restoring: 'From the receipt of the Mandate by Zhou to King Mu was 100 years.' This explicit statement, together with my discovery of the 1059 planetary augury conferring the Mandate on King Wen, and the consequent identification of 1058 as the first year of the new order inaugurated by him, indicates that King Mu's first year was 958, again exactly four years after the date 962 given by the *Bamboo Annals*. Considerably more evidence has been adduced elsewhere, but for the moment we need only consider the above three items, which are fairly well-established. The remarkable consistency of this systematic four-year error throughout most of the chronology for Shang and Western Zhou, the verifiable astronomical facts that led to its discovery, and their usefulness in detecting other idiosyncrasies in the *Bamboo Annals* chronology still to be discussed, all attest to the correctness of this analysis of the Conquest chronology, at least in so far as the *Bamboo Annals* is concerned.

In addition to the observations of celestial events cited above, an independent record in the 'Xiao kai' 小開 chapter of *Yi Zhou shu* 逸周書 of the total lunar eclipse of 12–13 March, 1065 B.C., in what is stated to be King Wen's 35th year, confirmed that the declared first year of the Mandate, 1058, was King Wen's 42nd year.[13] This means that the sources which variously assign his death to the '9th year of the Mandate' (e.g., *Shangshu* 'Wu cheng', *Han shu* 'Lü li zhi' 律曆志, *Yi Zhou shu*, 'Wen zhuan' 文傳 chapter), or to his 50th year as ruler of Zhou (*Shiji*, 'Basic Annals of Zhou' 周本記), or to the 10th year after the planetary portent signalling Heaven's conferral of the Mandate (*BA*), are all in agreement—King Wen died in 1050 B.C.

This identification of crucial benchmarks within the Conquest chronology also proved the accuracy of the tradition that a 'Mandate calendar' came into use in 1058, the year King Wen arrogated to himself the title of 'King', which same tradition also held that the actual military defeat of Shang took place in the 13th year of this Mandate reckoning (e.g. *Yi Zhou shu*, 'Da kuang' 大匡 and 'Wen zheng' 文政, *Han shu*, 'Lü li zhi')—i.e., 1058 minus 13 (inclusive) equals 1046—again four years after the *Bamboo Annals* date of 1050 for the Conquest.[14] Following in this way several avenues of approach to the relative chronology of the Conquest period, one repeatedly obtains results that cor-

[13] Pankenier, 'Astronomical dates', 5; *Zhongguo tianwenxue shi*, 21. Note that the date of this eclipse in mid-March, and the designation of that month as *zheng* 正 in the text demonstrates unequivocally that the convention then in use identified the first month of the year as the second lunation after the month containing the winter solstice. This fact is often overlooked in speculative accounts of what the Shang and Zhou calendars must have been like in the pre-Conquest period.

[14] It is worth noting here that the 'Feng bao' 酆保 chapter of *Yi zhou shu* also contains the following passage: 'In was in the 23rd year *gengzi* (day 37), new moon; the Lords of the Nine Regions all came to Zhou. The King was at Feng. In the morning twilight, the King stood in the Lesser Hall. The King announced to Dan, Duke of Zhou, "Wuhu! The various Lords have all come

roborate the conclusion that the *Bamboo Annals* chronology is consistently four years early.[15]

Post-discovery reconstruction of the Bamboo Annals *chronology*[16]

By the Han Dynasty the distinction between the *de jure* receipt of the Mandate, signified by the revelation of the planetary portent in 1059, and the subsequent military conquest or *de facto* transfer of the Mandate to the new dynasty, was no longer clearly understood. Or at least, if a clear distinction between the two occasions was made, it had become ambiguous as to which occasion the phrase 'Zhou received the Mandate' ought to apply. In part as a consequence of the accretion of legendary material about supernatural apparitions in connexion with the dynastic founding, this ambiguity also clouded the issue of whether a planetary portent actually coincided with the former or the latter event, or with both. For example, in separate apocryphal passages quoted in a single work, Huan Tan's 桓譚 (33 B.C.–A.D. 39) *Xin lun* 新論, King Wen is said on the one hand to have observed in the sky a 'diagram' described as a gathering of the planets in lunar mansion *Fang* 房 'Room' (Scorpius in Jupiter station Great Fire),[17] while on the other hand, on the day of the conquest of Shang, day #1 *jiazi*, the five planets are said to have lined up in the heavens 'like strung pearls' and the sun and moon to have 'matched up like jade *bi*'.[18] While the latter passage is obviously a conventional rendering of what by the mid-Han Dynasty was astrologically *de rigueur* in connexion with dynastic transitions, as I have pointed out both accounts do contain a kernel of truth.[19]

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to felicitate us. [They have] suffered bitterly in service to Shang. How shall I preserve and keep [their loyalty]? How shall I employ them and send them off?"' As I have pointed out earlier the text presently reads '23rd ritual cycle', but this is certainly an error; see Pankenier, 'Early Chinese astronomy and cosmology', 334, n. 49. If the text originally read '13th year' instead of '23rd year', a common enough transcription error, day *gengzi* can immediately be identified as the new moon day of the Zhou 4th month in the year of the Conquest (April 26, 1046 B.C.; JD 133 9847), precisely at the time when the sources agree that the various lords gathered in Zhou to be reinvested by the new king. Because of the error placing this event in a '23rd' year the passage became separated at an early date from the remainder of the account of the Conquest year which is now contained in the 'Shi fu' 世俘 chapter of *Yi Zhou shu*. As a benchmark calendrical date in the Conquest year 1046 this record confirms that dating hypothesis; see Zhu Youzeng 朱右曾, *Yi Zhou shu jixin jiaoshi* 逸周書集訓校釋 (Changsha: Shangwu yinshu guan, 1940), 3.27.

[15] Although Edward Shaughnessy repeatedly emphasizes the presence of just such a four-year error in the chronology, he fails to recognize its true character as a general systematic error; see his 'The "Current" *Bamboo Annals* and the date of the Zhou conquest of Shang', *Early China*, 11–12, 1985–87, 48–50, 52. Shaughnessy overlooks the fact that the four-year error in the dates he discusses is implicitly accounted for in the chronological analysis found in Pankenier, 'Astronomical dates', 8, 22, table 1, p. 23; table 2, p. 33.

[16] The following analysis is reproduced with some revision of presentation from ch. iv, pt 2: 'History of the *Bamboo Annals* chronology' in Pankenier, 'Early Chinese astronomy and cosmology (1983). Readers may observe a congruence between certain of my arguments and conclusions and those published in 1985 by Edward Shaughnessy in 'The "Current" *Bamboo Annals* and the date of the Zhou conquest of Shang'. It should be noted that the relevant details of my method of analysis and specific conclusions have remained unchanged since 1983.

[17] Pankenier, '*Mozi* and the dates of Xia, Shang, and Zhou', 175; *Taiping yulan* 太平御覽 (Tainan: Ping ping chubanshe, 1975), 84: 5b.

[18] Pankenier, 'Early Chinese astronomy and cosmology', 230; *Taiping yulan*, 329:5a.

[19] Pankenier, 'Early Chinese astronomy and cosmology', 245–6. While the conclusion seems inescapable that the Chinese observed and preserved accounts of an impressive planetary conjunction in February 1953 B.C. (Pankenier, '*Mozi* and the dates of Xia, Shang, and Zhou', 177 ff.), the argument by David Nivison and Kevin Pang ('Astronomical evidence for the *Bamboo Annals*' chronicle of Early Xia', *Early China*, 15, [1990], 87–95) that a late quotation describing such a phenomenon using the Han period cliché 'the sun and moon matched up like jade *bi*, and the five planets were like strung pearls' constitutes an authentic report of the same conjunction disregards the obvious anachronisms in the text. Furthermore, the cliché refers not merely to a simple clustering of the planets along the ecliptic as Nivison and Pang believe but to a theoretical 'stacking' of all five plus the sun and moon one atop the other at precisely the same degree of longitude, a hypothetical feature of Han mathematical astronomy dictated by the necessity of calculating from a single starting point; see my contribution to 'Early China Forum', *Early China*, 15, 1990, 117–23.

What is of particular interest here, however, is not the accuracy of the popular conception during the Han, but rather the introduction of certain misconceptions which had become just as firmly established by this time, largely on numerological or cosmological grounds. During the first century and a half of Han rule ideological considerations revolving around the question of the 'cosmological' legitimacy of the Qin dynasty led to politically-charged debates concerning the sequence of 'virtues' *de* 德, or cosmic forces thought to have influenced the fortunes of the preceding dynasties.[20] It was initially proposed by Jia Yi 賈誼 shortly after the accession of Emperor Wen 文帝 in 180 B.C., and again by Gongsun Chen 公孫臣 in Wen's 14th year (166 B.C.), that the patron virtue of Han was Earth, hence yellow was fixed as the imperial colour. This fitted in with Zou Yan's 騶衍 (d. 240 B.C.) 'mutual conquest' sequence of the five virtues—Wood, Metal, Fire, Water, Earth—though only if one conferred on Qin an unacceptable degree of cosmological legitimacy. A rival theory with powerful adherents maintained that each of the forces engendered its successor, yielding the 'mutual production' order of elements—Wood, Fire, Earth, Metal, Water—the sequence espoused by Wen di's Chancellor Zhang Cang 張蒼, and later Dong Zhongshu 董仲舒 (*c.* 179–104).

The ideological dilemma posed by the Qin Dynasty, which evidently never actually received the Mandate of Heaven, made the existing ambiguity intolerable. Though 'illegitimate' and therefore not entitled to equal status with the preceding Three Dynasties, the harsh Qin rule, ostensibly under the regime of Water, nevertheless required some rationalization in terms of the morally indifferent alternation of the cosmic forces. The debate persisted for decades, eventually to be resolved in favour of the 'mutual production' order, but not without recourse to the expedient of a super-numerary, 'non-substantive', or 'intercalary' water phase. The definitive formulation of this solution is found in Liu Xin's 劉歆 (d. A.D. 24) 'Canon of the Ages' 世經,[21] and he is generally thought to have been largely responsible for it. Whereas in the previous 'mutual conquest' scheme the cosmic forces Wood, Metal, Fire, Water, Earth were associated with Xia, Shang, Zhou, Qin and Han respectively, in the 'Mutual production' order the sequence became: Xia—Metal, Shang—Water, Zhou—Wood, 'Qin—'intercalary Water', Han—Fire. This system provided the conceptual underpinning for much of the cosmological speculation in the apocryphal works that began to make their appearance during the reigns of Emperors Ai 哀 and Ping 平 (6 B.C.–A.D. 5), and it became institutionalized after Guang Wu di 光武帝 (25 B.C.–A.D. 57), first of the Eastern Han emperors.

At this time too, correlations of the five elements continued to expand beyond their most basic association with the seasons of the year to categories of five which ran the gamut of natural phenomena. Among these were also numerological associations such as the following from the *Guanzi* 管子:

> When we see the cyclical sign *chia-tzu* arrive, the element Wood begins its reign. After seventy-two days this period is over . . . When we see the sign *ping-tzu* arrive, the element Fire begins its reign . . . When we see the cyclical sign *wu-tzu* arrive, the element Earth begins its reign . . . When we see the cylical sign *keng-tzu* arrive, the element Metal begins its reign . . . When we see the cyclical sign *jen-tzu* arrive, the element Water begins its reign. . . .[22]

[20] Michael Loewe, 'Water, Earth and Fire—the symbols of the Han Dynasty', *Nachrichten der Gesellschaft für Natur- und Völkerkunde Ostasiens/Hamburg*, 125, 1979, 63–8.

[21] *Han shu*, 21B.1011 (all references to the standard histories will be to the modern editions published by Zhonghua shuju); cf. Jack L. Dull, 'A historical introduction to the apocryphal (*ch'an-wei*) texts of the Han Dynasty,' Ph.D. dissertation, University of Washington, 1966, 124 ff.

[22] Tr. Joseph Needham, *Science and civilisation in China*, Vol. 2: *History of scientific thought* (Cambridge: Cambridge University Press, 1956), 248–9.

In this passage, presumably interpolated into the *Guanzi* during the late third or second century B.C., the five elements are arranged in their 'mutual production' sequence to reflect their periodical dominance during the course of the year.

Because of the ideological debate described above and perhaps also because of the association of 'Wood' with *jiazi* (the first in the series of sixty *ganzhi*, the day of the planetary conjunction of 1059 B.C., and the day of the Zhou Conquest), the phase 'Wood' came henceforth to be closely linked with the prestige of Zhou. Consequently, by mid-Han times astrological speculations concerning the founding of Zhou began to associate that dynasty with Wood as well as with Fire.[23] One source, an apocryphal commentary to the *Spring and Autumn Annals* known as *Chunqiu yuanming bao* 春秋元命苞 (earliest citation A.D. 60)[24] is a fruitful source of speculation about the portents that accompanied the transfer of the Mandate to Zhou. The following are relevant passages from *Chunqiu yuanming bao* culled mainly from Tang works:

(*a*) 'Chang of the Ji clan [i.e., King Wen], the quintessence of the Azure Emperor, his position is in [lunar mansions] Room (*Fang*) and Heart (*Xin*).'
'The Azure Emperor, *Lingweiyang* 靈威仰 [i.e., spirit of planet Jupiter]'.

(*b*) 'In the time of Zhou 紂 of Yin, the five planets gathered in Room (*Fang*). Room is the quintessence of the Azure Spirit; basing themselves on it the Zhou 周 arose.'
'The Zhou rose with Room and the five planets gathered there; [this was] the auspicious sign [that Zhou would] acquire all under Heaven.'

(*c*) 'A Phoenix grasping a Cinnabar Writing in its beak entered King Wen's capital.'

(*d*) 'Fire descended as a Phoenix and grasping a Writing in its beak it wandered about King Wen's capital; therefore King Wu received the records contained in the Phoenix Writing.'

(*e*) 'When King Wen received the Cinnabar Writing he declared himself King, reformed the calendar, and punished Hu, Marksman of Chong.'[25]

Although the earlier, astronomically correct association of the cosmic force of Fire with the Zhou dynasty persists in the passages concerning the Phoenix, Cinnabar Writings, and the like, the more detailed speculation has clearly shifted in favour of the association with Wood and correlated categories like the colour azure, the planet Jupiter, lunar mansion Room, and by implication, Spring, the East and so on. Furthermore, the statement in (*b*), 'the five planets gathered in Room (Fang)' 五星聚于房, is the precise wording found in the current *Bamboo Annals* entry recording the planetary portent. This fact, together with the mid-Han date of the linkage of Zhou with cosmic phase 'Wood', clearly establishes that the location 'Room' in Scorpius was assigned to the Mandate portent during the Han Dynasty. This location was subsequently interpolated into the *Bamboo Annals* account of the Conquest period

[23] As late as the mid third century B.C. the association of Zhou with Fire and the colour scarlet was still firmly in place. *Lüshi chungiu* 呂氏春秋 (Sibu beiyao ed., 13:4a), for example, says: 'King Wen declared, "The fire aura has overcome! The fire aura has overcome!" Therefore, the colour honored [by the Zhou] was scarlet and their affairs were modelled on Fire'.

[24] Jack Dull, 'Apocryphal texts', 481.

[25] All in Ma Guohan 馬國翰; *Yuhan shanfang ji yishu* 玉函山房輯佚書 (Taipei: Wen hai chubanshe, n.d. [Guoxue jiyao waibian photolithograph of Jinan xylographic ed. of 1871]), vol. 4, 2113.

during the process of editing and reconstructing the chronicle after its discovery in the late third century.

This error concerning the location of the Mandate conjunction had major implications for late attempts to reconstruct the chronology of the Conquest period. We know that Liu Xin and his father Liu Xiang 劉向 (77–6 B.C.) were well acquainted with portions of the chronology for the Conquest period which we now find in the *Bamboo Annals* In particular, Liu Xin knew of the accepted date (in his time) of 1050 for the defeat of Shang, and he knew that King Cheng's first year was supposed to be 1044.[26]

Although Liu himself thought that the Conquest occurred in the 13th year of the Mandate, by the late Zhou and Han periods it had come to be widely believed that the final battle took place in King Wu's 12th year, just as we now find in the *Bamboo Annals*. The trouble with this notion, as Liu makes clear in his alternative analysis, later to be incorporated by Ban Gu 班固 into the 'Treaties on harmonics and calendrical astronomy' in *Han shu*, is that it confuses King Wu's year count with that begun with the first year of the Mandate. Had Liu not been seduced by his own calendrical calculations, he might actually have deduced that the Mandate was conferred on King Wen in 1062 (= 1050 + 13), a result far superior to his ultimate conclusion of 1122.

During the post-discovery restoration of the *Bamboo Annals*, after the date of the Conquest itself was first assigned to 1050, a major adaptation of the pre-Conquest chronology took place which we are now in a position to reconstruct in detail. What the authors of this reworking of the chronology came up with was the system shown in table 2, which reproduces the *Bamboo Annals* dates as we have them today. A principle task confronting Shu Xi and the others involved was the necessity of reconciling the outstanding contradictions relating to the sequence of events immediately preceding the Zhou Conquest. Most significant among these contradictions would have been that arising from three mutually irreconcilable pieces of information: first, the editors took from the 'Discourses of Zhou' 周語 in *Guoyu* 國語 the information that Jupiter was in duodecimal station Quail Fire during the Conquest campaign;[27] second, they knew that according to tradition only twelve or thirteen years had elapsed between King Wen's receipt of the Mandate and the Conquest; third, they thought they knew the location in lunar mansion Room (in Jupiter station Great Fire) of the planetary portent which signalled the conferral of the Mandate on King Wen. Confronted thus with the physical impossibility of a Great Fire (Scorpio) location for Jupiter at the time of the planetary portent, and a Quail Fire (Leo) location twelve to thirteen years later at the time of the Conquest—when in fact Great Fire precedes Quail Fire by only eight years in the sequence of twelve Jupiter stations—the authors of the *Bamboo Annals* chronology attempted to accommodate both. The tradition that thirteen years intervened between the Mandate and the Conquest, though recorded in venerable sources like the 'Hong fan' 洪範 chapter of *Shang shu*, and the 'Da kuang' and 'Wen zheng' chapters of *Yi Zhou shu*, and most prominently espoused by Liu Xin and their own contemporary, Huangfu Mi 皇甫謐 (A.D. 215–282), was scrapped along with Liu's Conquest date of 1122, and the supposed Mandate conjunction in lunar mansion Room was backdated eight

[26] As Leopold de Saussure demonstrated, this is evident from the manipulations Liu Xin was obliged to perform on the reign lengths of the kings who ruled Zhou before 841 B.C. in order to push the date of the Conquest back as far as 1122; see 'La chronologie chinoise et l'avènement des Tcheou', *T'oung Pao*, 23, 1924, 299–329.

[27] Whether or not the *Guoyu* is correct is irrelevant. What matters is that the passage was unquestionably believed to be accurate in the third century. The passage in question from the 'Discourses of Zhou' is revisited in Part 2 under 'Once again: the *Guoyu* Record'.

years to the next Great Fire year when the five planets (Jupiter, of course, among them) ought to have been located in Scorpio. It is virtually certain therefore that it was at this juncture that the phrase 'the five planets gathered in [lunar mansion] Room', or a portion thereof, was interpolated into the text of the *Bamboo Annals*. In this way the authoritative traditions in *Guoyu* and *Zuozhuan* about the roles of Quail Fire and Great Fire in their association with Shang and Zhou [28] could both be accommodated. An unanticipated advantage was the resulting emergence of symmetrical portent-to-Conquest periods of twenty-one years preceding the founding of *both* Shang and Zhou dynasties (see table 2).

The most obvious alteration of the unreconstructed *Bamboo Annals* chronology that resulted from this compromise was the additional backdating by eight years of the Mandate conjunction and other events contingent on this date, such as the dates of King Wen's death and King Wu's first year (cf. table 1). From this it is evident that this additional eight-year distortion was: (i) superimposed on a pre-existing chronology that already incorporated the general four-year error described above, and (ii) localized to the pre-Conquest period, since had this not been the case the entire pre-Conquest chronology would surely also have been backdated an additional eight years, making the date of the planetary portent which preceded the Shang founding, for example, 1588 rather than 1580. It is for this reason that only the dates in the immediate Conquest period *dependent on the date of the Zhou Mandate portent* exhibit a total (8 + 4 =) twelve-year distortion; they have all been 'pulled back' as it were, an additional eight years along with the conjunction.

Even more telling is a less obvious but equally significant manipulation of the *relative* chronology of events during the Conquest period, which affected not only the assignment of events to specific years in Di Xin's and King Wu's reigns but also their absolute dates. Careful examination of this 'juggling' of the figures reveals how and why the alterations came about and when they were introduced, findings which confirm the post-discovery date (i.e. after A.D. 281) of this revision of the chronology.

In the reconstruction of the *Bamboo Annals* chronology which resulted from the work of restoration, besides the data giving the location of Jupiter and the general conjunction which had to be accommodated, there was of course the crucial interval between the receipt of the Mandate and the Conquest campaign. The statement that the Conquest occurred not just in *a* 12th year, but in the 12th year of *King Wu*, a conception integral to the post-discovery reconstruction of the *Bamboo Annals* chronology, first appears in the *Lüshi chunqiu* composed in the mid-third century B.C.[29] This tendency to take the date to refer to a year in King Wu's reign, while unprecedented, is understandable, since King Wu was in fact responsible for achieving the final military victory. Such a tendency was also encouraged by the gathering obscurity surrounding the Mandate phenomenon itself—who received it, when, and what it was. As early as Mencius, King Wen's Mandate was already understood to refer to his appointment to succeed his father as ruler of Zhou,[30] and a comment in the *Bamboo*

[28] Pankenier, 'Astronomical dates', 7–8.

[29] *Lüshi chunqiu* (Sibu beiyao ed.), 14:8a.

[30] *Mencius* 2A/1 gives King Wen's age at death as 100 years. This inflated figure is based on a misreading of the passage in *Shang shu*, 'Wu yi' 無逸 chapter: 'When King Wen received the Mandate he was in mid-life; his rule of the kingdom lasted 50 years'. Mencius has taken 'received the Mandate' to refer to Wen's appointment to succeed his father, making him 50 years of age at his accession in Zhou. Adding another 50 years of rule would make him 100 years old at his death. 'Received the Mandate' must, however, refer to the events of 1059–58, making King Wen actually only about 58 years old when he died.

Annals attributed to Shen Yue 沈約 (441–513), in the 33rd year of Di Xin (i.e. 1070, the year following the record of the Mandate conjunction) clearly reflects Shen's belief that 'received the Mandate' referred to Wen's appointment as Earl of the West by the Shang King.[31] It follows that King Wu's accession would also have been interpreted in this way, the Mandate being transferred to him by virtue of his succession. This would have resulted early on in a tendency for the ambiguously defined Mandate calendar, which began in 1058, to coalesce with the enumeration of the years of King Wu's personal reign, which in actual fact could not possibly have begun before King Wen's death in 1050.

Ambiguity of this sort is also in evidence in the 'Basic Annals of Zhou' in *Shiji*, where Sima Qian appears in one place to be enumerating years in terms of King Wu's reign, and in another in terms of the Mandate calendar sequence similar to that preserved in *Shangshu dazhuan* 尚書大傳.[32] When the chronologies of events are compared, however, it is evident that Sima Qian thought that both calendars somehow fit into the same interval, as if he sensed that the two reckonings must become concurrent at some point, as indeed they do. The result of his treatment is a somewhat ambiguous and disjointed discussion of the events, first in terms of King Wen's reign and then in terms of King Wu's reign, with no explicit statement reconciling the apparent contradiction.[33]

Later on, although Liu Xin and Liu Xiang in their turn display an awareness of the dates 1050 for the Conquest and 1044 for King Cheng's first year as found in the *Bamboo Annals*, there is no evidence to suggest that the current *Bamboo Annals* date of 1071 for the Mandate portent had already been proposed at this

[31] Fang Shiming 方詩銘 and Wang Xiuling 王修齡, *Guben zhushu jinian jizheng* 古本竹書紀年輯証 (Shanghai: Shanghai guji chubanshe, 1981), 231.

[32] See Pankenier, 'Astronomical dates', 14–15.

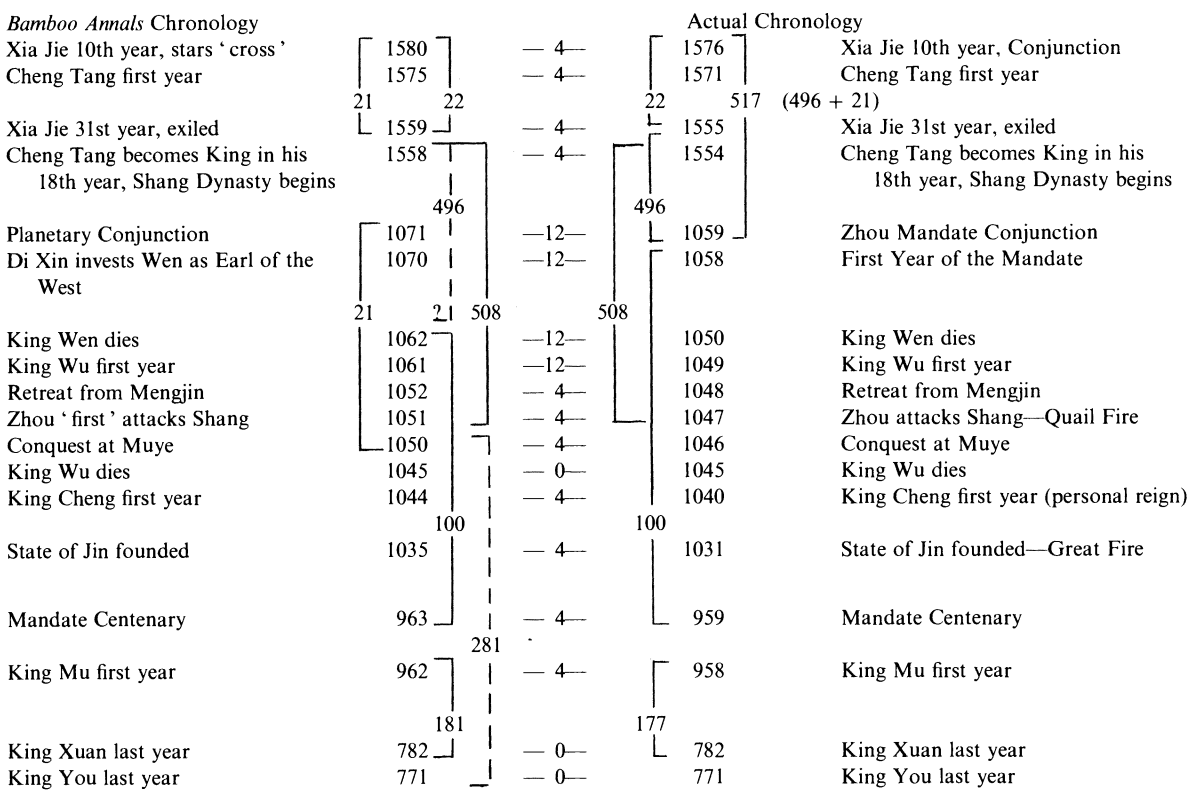
[33] Sima Qian's ambiguity with regard to the Conquest chronology in 'Basic Annals of Zhou' is only apparent, however. A passage that settles the matter is contained in his account of the northern barbarians (*Shiji*, 110.2881). There Sima Qian states that from Zhou Tai Wang's 太王 settling at Qixia 岐下 in the Wei River valley to Zhou Wen Wang's attack on the Quan yi 犬夷 barbarians (the year following King Wen's receipt of the Mandate according to the 'Basic Annals of Zhou') was 'a little more than 100 years'. Then the historian says that from this to King Wu's attack on Shang was 'a little more than 10 years'; from this to King Mu's 穆王 attack on the Quan rong 犬戎 was 'a little more than [one] hundred years' (the text actually says '200' years, but this is an obvious copyist's error); and from this to King You's 幽王 assassination (in 771 B.C.) was 'a little more than 200 years'. From these statements we can draw several important conclusions. First, the *Bamboo Annals* is probably close to the mark in assigning Tai Wang's settling at Qixia in the first year of Shang king Wu yi 武乙 to the year 1159, since the date of Wen Wang's attack on the Quan yi was in fact 1055 (actually the 4th year of the Mandate, as stated in *Shangshu dazhuan*, not the 1st as in 'Basic Annals of Zhou'). Thus the Mandate conjunction of 1059 occurred close to the centennial of Tai Wang's settling at Zhouyuan. Second, since Sima Qian here unambiguously asserts that 'a little more than 10 years' separated King Wen's attack on the Quan yi (immediately after receiving the Mandate in Sima's view) from the Conquest, and since the 'Basic Annals of Zhou' suggests that King Wen died six years after that Quan yi conflict, Sima Qian obviously thought that the Conquest occurred after King Wen's son, King Wu, had reigned for at most only five or six years (i.e. 6 plus another 5 or 6 years equals 'a little more than ten'). This means that where Sima Qian's 'Basic Annals' version of events dates the Conquest campaign to an ambiguous '11th year, 12th month' (*Shiji*, 4.121), or alternatively, to the '11th year, 1st month' (*Shiji*, 32.1480), the historian could not possibly have taken these to be years in King Wu's *personal* reign, as Nivison has argued, but must have understood them to refer to the reckoning that began with King Wen's receipt of the Mandate. There is also a possibility that the original dates in the 'Basic Annals' were subsequently altered, since Xu Guang 徐廣 (352–425) is quoted in *Shiji jijie* 史記集解 (*Shiji*, 4.121, n. 2) as saying that earlier Qiao Zhou 譙周 (201–270) had said that 'in *Shiji*, King Wu went east to inspect the troops in the 11th year, and in the 13th year defeated [Shang] Zhou 紂,' which I argue is the correct solution.

Table 1: *The* Bamboo Annals *chronology prior to discovery and reconstruction in the third century* A.D.

Bamboo Annals Chronology					Actual Chronology	
Xia Jie 10th year, stars 'cross'	1580		—4—		1576	Xia Jie 10th year, Conjunction
Cheng Tang first year	1575		—4—		1571	Cheng Tang first year
		22		22	517	(496 + 21)
Xia Jie 31st year, exiled	1559		—4—		1555	Xia Jie 31st year, exiled
Cheng Tang becomes King in his 18th year, Shang Dynasty begins	1558		—4—		1554	Cheng Tang becomes King in his 18th year, Shang Dynasty begins
		496		496		
Planetary Conjunction	1063		—4—		1059	Zhou Mandate Conjunction
First post-conjunction year	1062	508	—4—	508	1058	Mandate First Year
Retreat from Mengjin	1052		—4—		1048	Retreat from Mengjin
Zhou 'first' attacks Shang	1051		—4—		1047	Zhou attacks Shang—Quail Fire
Conquest at Muye	1050		—4—		1046	Conquest at Muye
King Wu dies	1049		—4—		1045	King Wu dies*
		100		100		
King Cheng first year	1044		—4—		1040	King Cheng first year (personal reign)*
State of Jin founded	1035		—4—		1031	State of Jin founded—Great Fire
Mandate Centenary	963		—4—		959	Mandate Centenary
King Mu first year	962		—4—		958	King Mu first year

*For a more detailed discussion of these dates see nn. 92 and 93, part 2 of this paper, in *BSOAS*, LV, 3, 1992.

Table 2: *The* Bamboo Annals *chronology after discovery and reconstruction in the third century* A.D.



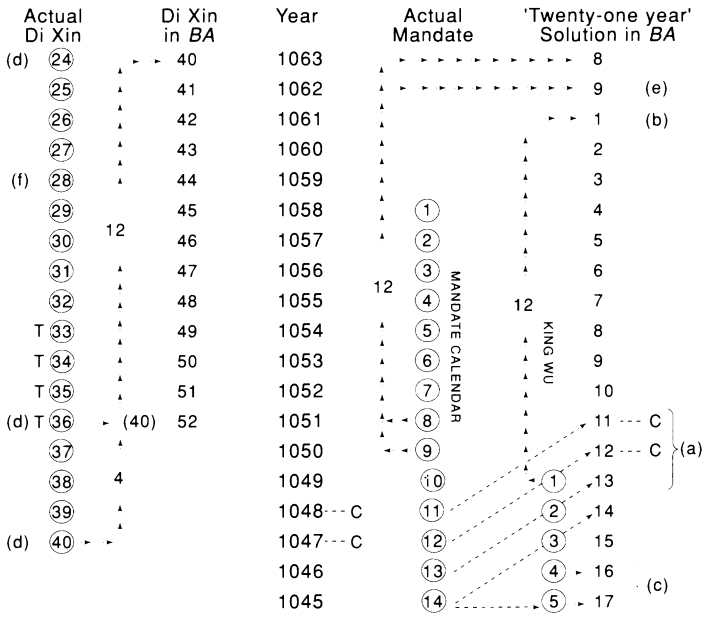
time. The necessary preconditions existed, namely, that the planetary conjunction was thought by some to have occurred in Great Fire and the Conquest in King Wu's 12th year, but no one had yet thought to make the Mandate count and King Wu's reign run *consecutively*. Hence there is no trace of the 'twenty-one year solution' that follows from this conception. Moreover, both Liu Xin and Huangfu Mi argue forcefully for the thirteen-year Mandate sequence, with the last four years of the Mandate count being at the same time the first four years of King Wu's reign—in fact, the correct solution, as we shall see.

Detailed study of the text of the *Bamboo Annals* in comparison to the actual chronology as I have reconstructed it in tables 1 and 2 reveals a number of important clues about how the most recent revision came about. The complex process of 'unpacking' the *Bamboo Annals* system is best illustrated in the schematic representation of the latter portion of the 'twenty-one year solution' in table 3, which shows in detail how the year count of Di Xin's reign employed as the baseline in the *Bamboo Annals* relates to the Zhou method of reckoning the early years of the dynasty. Both are matched in turn with the actual sequence of calendar years to which they correspond.

The discussion which follows is an attempt to work backwards from the existing *Bamboo Annals* system through the various dislocations discernible in the chronicle—those in Di Xin's reign, those in King Wu's reign, and those in the thirteen-year Mandate sequence—to arrive at the original chronology. What we have in the current *Bamboo Annals* chronology before us is a compromise based on what was thought to be the best available evidence. Determining what that evidence was and how it was applied reveals much new detail about the condition of the chronicle at the time in question and about what alterations were worked on the antecedent chronology. The point of this discussion, then, is not so much to recapitulate conscious steps taken by the authors of the revised chronology as a means to a desired result, but rather to provide a heuristic model which illustrates in each case what specific alterations were necessary to reconcile the defective text of the *Bamboo Annals* with the prevailing conceptions at the time the revisions were undertaken. These systematic adaptations will in turn be found to corroborate in detail the numerical imperatives implicit in the true chronology of events as reconstructed here.

The reason why the dislocations are so difficult to survey or to summarize as a whole is that they are not unidirectional. It is as if one had a slide-rule with three independently movable scales, the left-hand scale graduated using the years of Di Xin's reign, the centre scale marked off in years B.C., and the right-hand scale showing the Mandate sequence plus King Wu's reign. In the unreconstructed *Bamboo Annals* chronology recovered from the tomb (table 1) both the left-hand and the right-hand scales were slid back, as it were, four years relative to the centre scale graduated in years B.C.. Then, during the process of reconstruction of the chronology in the third century A.D. both left and right scales were not slipped further, but instead were suddenly *extended* both ways from the middle by having twelve additional years spliced into them precisely in the Conquest period. And, to make matters worse, the splices were not made in the equivalent locations in each. The result was that the left and right-hand scales were incommensurately dislocated relative to the centre scale, and relative to each other, so that in numerical terms the amount of dislocation in a single scale *vis à vis* another may actually vary depending on whether one compares the portion of the chronology preceding or following the splice. Individually the dislocations will be simple enough to understand, but visualizing how they all relate to one another is another matter. The dislocations will all be explained

Table 3: *Correlation of the Mandate calendar with the Bamboo Annals* chronology and the 'twenty-one year' model



The circled figures indicate true correspondences between the various reign years and calendar years when read across the table, e.g. Di Xin's last year, his 40th, corresponds to 1047 B.C., which was the 12th year of the Mandate and the 3rd year of King Wu.

C denotes the date of a Zhou campaign against Shang.

T indicates a true equivalence between Di Xin's reign years as given in *Bamboo Annals* (years 33–36), the events of those years as recorded in *BA*, and the same events identified elsewhere as having occurred in Mandate years 5–8.

The arrows illustrate the backshifts of the year counts in comparison to the calendar years to which they originally corresponded; e.g. Di Xin's last year, his 40th, was initially moved back four years to 1051 in the pre-Han *BA* chronology, then an additional 12 years to 1063 with the extension of his reign by 12 years during the third century reconstruction of the chronology.

Noteworthy other examples of transformations resulting from the conversion from a 13-year model for the conquest chronology to the *BA* 21-year model:

(*a*) Events originally recorded under Mandate years 11–13 (1048–1046) become transformed into King Wu's years 11–13 (1051–1049).

(*b*) Events of Mandate year 10 (King Wu's 1st year) are now found under his 'new' 1st year 1061, rather than 1049.

(*c*) King Wu's last two years, his 4th and 5th, are redefined as his 16th and 17th: events of his last year, Mandate year 14, have been divided between his 'new' 14th and 17th years in *BA*.

(*d*) Events of Di Xin's original last year, his 40th, are now recorded in *BA* under his 'new' last year, his 52nd. His 'new' 40th year 1063 is now 16 years earlier than the original 1047.

(*e*) King Wen's death in the 9th year of the Mandate, or 1050 B.C., is now recorded in the 9th post-conjunction year 1062, twelve years earlier.

(*f*) The Mandate conjunction, originally recorded in Di Xin's 28th year or 1059, is now found in *BA* under his 32nd year (increment +4) which corresponds to 1071 (increment +12, not shown here).

All exhibit dislocations of 4, 12, or 16 years either in relative or absolute dating consistent with the analysis presented here.

and illustrated, but it will help to keep the above image in mind through the discussion that follows.

'Deconstructing' the Bamboo Annals *chronology*

The *Bamboo Annals* chronology assumed its present form only after being reconstructed in the third century to conform with an analysis of the early Zhou system of reckoning shown in table 3. There we see graphically what the *Bamboo Annals* 'twenty-one year solution' looks like in terms of the Zhou year counts: first the initial nine years of the Mandate calendar (corresponding to the *Bamboo Annals* years 1070 to 1062), followed by the supposed twelve years of King Wu's reign which were now thought to have preceded the Conquest. This solution, found nowhere else but in the *Bamboo Annals*, represents an attempt to reconcile as many conflicting sources and interpretations concerning the chronology as possible. It has the virtue of accommodating both the Mandate conjunction in lunar mansion Room in Great Fire and the Quail Fire location of Jupiter during the Conquest campaign, all nine years of the Mandate calendar up to and including King Wen's death in the ninth year (mentioned in e.g. *Han shu*, 'Lü li zhi', and 'Wen zhuan' chapter in *Yi Zhou shu*), and it is compatible with the sources which date 'attacks' *fa* 伐 on Shang to the 11th and 12th years, the former now referring to the start of the Conquest campaign and the latter to its conclusion after the turn of the year, rather than to two separate campaigns in successive years. In terms of actual calendar years, what this solution does is simply backdate part of the Mandate calendar and the beginning of King Wu's reign twelve full years and make them run consecutively rather than overlap, the last three years, eleven to thirteen of the Mandate count, which ought to have overlapped King Wu's years two to four, being dropped and their events listed under years eleven to thirteen of King Wu instead (see table 3).

In precise numerical terms, what this means is that from the thirteen-year Mandate sequence which originally defined the interval, the last four years have been eliminated, leaving nine years. This nine-year sequence was made to precede the presumed twelve years of King Wu, making a total of twenty-one years for the interval. In real terms, this produced a net inflation of eight years ($21 - 13 = 8$). In this way, a twelve-year backdating of the entire Mandate calendar and the accession year of King Wu relative to the date of the Conquest translates into an equivalent eight-year shift back of the date of the planetary conjunction. This eight-year backdating, together with the antecedent four-year error in the entire chronology of Shang and Western Zhou, produced the total twelve-year error in the date assigned in *Bamboo Annals* to the conjunction, making it 1071 rather than the true 1059 (see table 2).

Here the temporal sequence of the innovations, indeed the whole problem of cause and effect, although complex, becomes especially interesting, for the numerical consequences of the third-century A.D. adaptation of the chronology are different depending on whether we are speaking in terms of absolute or relative dating. As we saw, the twelve-year backdating of the Mandate calendar described above is not simply a result of the insertion of twelve fictitious years into the reign of King Wu. Rather, it was first and foremost an *ad hoc* solution to a problem in *relative* chronology—how to reconcile the traditional concept of a Mandate calendar, identified with the final years of King Wen's reign and the Conquest, with a Conquest date in a 12th year supposed to belong to King Wu's reign. This problem arose gradually in late Zhou and Han as speculative theories proliferated and the actual sequence and significance of the early events became increasingly obscure. The adoption of the Mandate conjunction loca-

tion of Great Fire was originally a Yinli innovation dating from the fourth century B.C.,[34] it certainly predated the discovery of the *Bamboo Annals*. When the problem and this innovation were brought together in the late third century A.D. during the effort to reconstruct the newly discovered text of the *Bamboo Annals*, the location Great Fire newly assigned to the planetary portent now served as a catalyst in stimulating a rethinking of the conundrum involving the Mandate calendar and King Wu's reign. A new synthesis was devised—'the twenty-one year' solution—whose twelve-year apparent (effectively only eight-year) shift back of the Mandate led to a compounding of the pre-existing four-year error. Therefore it was the adoption of the location Great Fire for the Mandate conjunction that was at once the cause of the shift from a thirteen to a twenty-one year model for the *relative* chronology, as well as the cause of the backdating of the conjunction by an additional eight years to 1071 in *absolute* terms.[35]

That it was indeed this revision that produced the *Bamboo Annals* chronology as it now appears is evident from several peculiarities in the way events are reported during the nine years of Di Xin's reign following the planetary conjunction, and from a contingent discrepancy of sixteen years in the correlation between Di Xin's reign and his true calendar years.

The sixteen-year distortion

It is apparent from table 3 that the distortion in the current *Bamboo Annals* reign years for Di Xin, in comparison to the actual years of his reign circled at left, amounts ot sixteen years. This of course explains why there is a sixteen-year error in the *Bamboo Annals* date for the beginning of Di Xin's reign—1102 instead of 1086—making Di Xin's actual first year, 1086, his 17th in the *Bamboo Annals* system. The question is how did this come about? Up to now we have dealt with a four-year and an eight-year error, which add up to only twelve years of cumulative dislocation.

The explanation for this is that although the date of the conjunction was only moved back eight years, from the 13th year before the Conquest to the 21st, twelve full years had to be added to the *end* of Di Xin's reign to provide for the Conquest date in King Wu's supposed 12th year, since Di Xin had to die early in that year. Because Di Xin's last year—his 40th—had already been backdated four years relative to the Conquest by the editors' embracing 1050 as the date of that event, adding an additional twelve years to the end of his reign produced a total sixteen years of dislocation in relation to Di Xin's true dates, so that the *Bamboo Annals* identifies the final Conquest campaign in late 1051 as Di Xin 52 rather than the actual Di Xin 36. Thus, in absolute terms, the antecedent four-year backdating of the entire *Bamboo Annals* chronology based on the presumed date of 1050 for the Conquest compounds the twelve-year extension of Di Xin's reign, with the result that, for example (reading across table 3): calendar year 1053, Di Xin's true 34th year, according to the *Bamboo*

[34] See Pankenier, 'Early Chinese astronomy and cosmology', 237 ff., where the conjunction of Jupiter and Saturn of 364 B.C. is implicated as the starting point for the Yinli extrapolation that settled on 1084 as the date of the Zhou Mandate. Zhu Wenxin 朱文鑫 earlier proposed 370 B.C. as the approximate date of the construction of the Yinli and Zhuanxu 顓頊 calendars; cf. *Zhongguo tianwenxue shi*, 74. David Nivison ('1040 as the Date of the Chou Conquest', 77) is mistaken in supposing the Yinli calculations post-date Sima Qian. It is noteworthy that William Hung too, basing himself on evidence from *Zuo zhuan*, dated the beginning of retrospective chronological calculation using the Jupiter cycle to about 364 B.C.; see his preface to *Harvard-Yenching Institute Sinological Index Series*, Supplement No. 11, *Combined concordances to Ch'un-ch'iu, Kung-yang, Ku-liang and Tso-chuan* (1937), lxxxiv.

[35] This implies, of course, a date of 1063 for the Mandate portent in the pre-Han *Bamboo Annals* chronology as indicated in table 1.

Annals is his 50th, for an increment of sixteen years. By the same token, Di Xin's 34th year, according to the *Bamboo Annals* is 1069—sixteen years earlier. As for the beginning of Di Xin's reign, the *Bamboo Annals* gives 1102, as I mentioned. This is simply the inclusive sum of his last year 1051 plus a supposed fifty two years of rule, or put another way, his true accession in 1086 backdated sixteen years.

In terms of the correlation between Di Xin's years and the twenty-one year, Mandate-calendar-plus-King-Wu sequence, however, this adaptation shows up as a discrepancy of either four or eight years. In the early years of the Mandate calendar, half of its previously mentioned eight-year backdating in real terms is compensated by the incommensurate shift back of Di Xin's reign by sixteen years (versus only twelve years relative to the Conquest for the Mandate calendar and the early events of King Wu's reign), so that the *Bamboo Annals* date for the planetary portent in Di Xin's reign (Di Xin 32) is only four years too high in comparison to the true date in his reign (Di Xin 28). In the latter part of the *Bamboo Annals* account of Di Xin's reign, on the other hand, the discrepancy is a full twelve years, so that the *Bamboo Annals* date for the Conquest campaign is Di Xin 52nd year versus a true Di Xin 40th year (see table 3).

Yet another example is the date of King Wu's death—it was 1049 in the unreconstructed *Bamboo Annals* chronology containing the general four-year error (table 1); it has become 1045 (in fact the correct date), but now defined as the end of King Wu's 17th year rather than the end of his first year after the year of the Conquest (5 + 12 = 17). In tandem with the parallel expansion of Di Xin's reign, in the transition from the unreconstructed *Bamboo Annals* chronology to the current *Bamboo Annals* chronology, the net result of the insertion of twelve fictitious years into King Wu's reign was that in absolute terms his accession was backdated twelve years from 1049 to 1061, while his demise was moved down four years from 1049 to 1045, again for a total of sixteen years. Thus King Wu's reign in the current *Bamboo Annals* chronology has effectively been expanded in both directions, both forward and backward. In relative terms, he has gone from ruling one full year after the Conquest year in the pre-reconstruction *Bamboo Annals* (table 1) to five years (net forward gain four years, see table 3); he has gone from effectively ruling five years in his own right after King Wen's demise (table 1) to ruling seventeen years (net backward gain twelve years); in absolute terms, his first year has moved from 1049 to 1061 (net backward gain twelve years); while his demise has moved from 1049 to 1045 (net forward gain four years) for an absolute total in both cases of sixteen years.

Transformations in King Wu's reign

The consequences of the conversion to the twenty-one year model are no less noticeable in the way other historical events are recorded during King Wu's reign. The events of his actual five years of rule from 1049 to 1045, after King Wen's death in 1050, have beeen redistributed among the seventeen years allotted to him in the *Bamboo Annals* in telltale fashion (table 3). His accession in 1049 has been backdated twelve years and is now recorded under Di Xin's 42nd year, 1061. Mandate years eleven to thirteen, which contained the accounts of the two campaigns against Shang, the Conquest and reinvestiture of the lords in Zhou, and the interview with Jizi, have become transformed into the equivalent years in King Wu's ' new ' seventeen-year reign. Most of the events pertaining to the actual campaigns and the Conquest from Mandate years eleven to thirteen have ended up being listed under King Wu's fictitious years eleven to thirteen, with two interesting exceptions. The interview with Jizi dated

by both 'Hong fan' and *Shiji* to the 13th year of the Mandate has not been backdated; it occurred in the 13th year, 1046, to begin with, and it is still listed under 1046, but now this is called King Wu's 16th year instead of his 4th. Here the distortion is not in the absolute date of the event, but in the *relative* date in King Wu's reign, however, the net change remains twelve years. Similarly, King Wu's death has been moved down four years from 1049 (table 1), thereby cancelling out the four-year general error in the *Bamboo Annals* chronology and restoring Wu's demise to 1045 (and zero error, see table 2). It is especially noteworthy that as a result of the transformation of Mandate years twelve and thirteen into King Wu's years twelve and thirteen, two campaigns in successive years, 1048 and 1047,[36] have coalesced in the *Bamboo Annals* version of events into a single campaign late in 1051 culminating in the Conquest early in 1050. This explains a major contradiction on this score between the *Bamboo Annals* account and that found in *Shiji*, 'Basic Annals of Zhou', and shows beyond a doubt that this distortion in the *Bamboo Annals* is integral to the third-century rearrangement of the chronology.

In this connexion it is worth noting that in a recent article,[37] Edward Shaughnessy showed that in practical terms the inflation of the latter portion of King Wu's reign could have been accomplished in part through the displacement of a bamboo slip from the reign of King Wu's successor, King Cheng, containing the records of King Cheng's 14th, 15th and 16th years. As Shaughnessy illustrates graphically,[38] in the unreconstructed *Bamboo Annals* the original contents of King Cheng's 14th year (but now taken to be year 14 of Wu's reign) were split, so that part stayed in year 14, but the actual record of Wu's death ended up in his 'new' 17th year. If Shaughnessy's analysis of the misplaced strip is correct, it suggests that King Wu's death in the unreconstructed *Bamboo Annals* actually was recorded in a '14th year', and this could only have had reference to the original Mandate calendar. This original 14th year is none other than the last year of the Mandate count shown in table 3, or 1045 B.C.[39] The arrows in table 3 at this point indicate the transfer of contents from this original 14th year entry to both years 14 and 17 in the 'twenty-one year' solution in *Bamboo Annals* on the right—Shaughnessy's discovery thus provides independent confirmation of the parallel transformation that I previously proposed had been worked on Mandate years 11 to 13 during the reconstruction of the *Bamboo Annals* (see also table 4 for a precedent under Mandate year 8 for the splitting of the contents of a single original entry). The misplacement of

[36] The reasons for abandoning the campaign in 1048 are explored in Pankenier, 'Astronomical dates', 14–16; see also n. 57, Part 2 of this paper.

[37] Edward L. Shaughnessy, 'On the authenticity of the *Bamboo Annals*', *Harvard Journal of Asiatic Studies*, 46.1, 1986, 149–80.

[38] ibid, 166–7.

[39] From this it follows that the record in 'Jin teng' 金縢 chapter of *Shang shu*, which implies that King Wu died two years after having defeated Shang, should be understood inclusively, i.e., as referring to the year *following* the Conquest, and not to the second year following the battle as argued by Shaughnessy, 'Authenticity of the *Bamboo Annals*', 156, 167. Han-period texts on which Shaughnessy relies which suggest otherwise do so on the basis of the misconception that the Conquest occurred in a 12th year, rather than the 13th, in combination with the implication deriving from the *Yi Zhou shu* 'Zuo luo', 'Da kuang' and 'Wen zheng' chapters that King Wu died in a 14th year; see 'Authenticity of the *Bamboo Annals*', 158–9. Shaughnessy cites approvingly the three passages from *Yi Zhou shu* which identify as a 13th year in the Mandate reckoning the year in which King Wu, *said to be at Guan, appointed his viceroys in the former Shang territory*. 'Zuo luo' goes on to say that King Wu died the following year in the 12th month, which Shaughnessy (p. 159) correctly points out would be the 14th year. This is confirmed (p. 167) by the analysis of the misplaced strip which shows that King Wu's death in the unreconstructed *Bamboo Annals* actually was recorded in a 14th year. Then, Shaughnessy (p. 173), commenting further on *Bamboo Annals*, remarks that 'in the entry for King Wu's 12th year, the "Current" *Bamboo Annals* records that in the fourth month King Wu returned to Feng, performed a sacrifice in the great temple, *arranged for the supervision of the former Shang territory, and "then hunted in Guan"*'. Because of his

another bamboo slip containing what was actually a King Cheng 16th year record of a visit by Jizi to the Zhou court also explains why the reconstructed *Bamboo Annals* now contradicts both *Shiji* and 'Hong fan' which insist on dating this event to the 13th year.

To summarize the foregoing, the adjustments to the chronology inherent in the 'twenty-one year' model had important, predictable consequences for the *Bamboo Annals* dating assignments. First, they made systematic dislocations inevitable in the overall relationship between Di Xin's and King Wu's true reign years, each ruler's year counts in the current *Bamboo Annals*, and the absolute dates of events. Second, they are a contributing cause of the predictable and telltale distribution of historical events during the latter years of Di Xin's reign in the transmitted version of the *Bamboo Annals*, as will become even more apparent in the discussion to follow. Third, it now becomes clear that, like *Shiji*,[40] the original *Bamboo Annals* must have recorded events between King Wen's death and the Conquest according to the Zhou Mandate calendar promulgated by King Wen, since traces of those original headings for Mandate years 11 to 14 survived in the text recovered from the tomb and to some extent must have constrained the third-century work of reconstruction, as shown most notably by their *direct transformation* into years 11 to 14 in King Wu's reign (table 3) in the current version.

Through thick and thin

Let us now consider the dislocation of Di Xin's reign years relative to the Mandate calendar. Di Xin's 40th year initially corresponded to the 12th year of the Mandate (table 3). As a consequence of the incommensurate backshift of Di Xin's reign, his 40th year came to correspond to the 8th year of the Mandate rather than to the 12th. Or, to put it simply the conversion to the *Bamboo Annals* 'twenty-one year' model for the interval had the effect of backdating Di Xin's reign by four years relative to the Mandate sequence.

At least four entries in the *Bamboo Annals* though, those for Di Xin's 33rd to 36th years, actually preserve *true* identifications of the year in Di Xin's reign during which the reported post-Mandate events must have occurred. For example, *Shangshu dazhuan*[41] dates the Zhou attack on Chong, the Shang vassal state guarding the eastern end of the Wei River valley, to the 6th year of the Mandate (the 'Basic Annals of Zhou' concurs).[42] Counting six years down from 1058 B.C., the actual first year of the Mandate, yields 1053. The corresponding reconstructed date in Di Xin's reign is year 34, based on his accession in 1086 and his demise in his 40th year 1047 (table 3). Remarkably, under Di Xin's 34th year in the *Bamboo Annals* we do indeed find the account of the attack on Chong. Di Xin's years 33 to 36 are the only four thus far discovered about which this is true. They are especially significant because they

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commitment to the Han period '12th year Conquest' hypothesis, Shaughnessy overlooks the obvious contradiction here between the reconstructed *Bamboo Annals* and the pre-Qin passages from *Yi Zhou shu* which he has just cited, in which this immediately post-Conquest activity takes place in a '13th year' *not* a '12th year'. If, as Shaughnessy argues (p. 158), *Shiji* is correct in making the Conquest take place in a 'Mandate 12th year', how can pre-Qin *Yi Zhou shu* which he also quotes approvingly date the same events to the Mandate '13th' year? The explanation for this contradiction between *Yi Zhou shu* and reconstructed *Bamboo Annals* (following *Shiji*) is that it is the result of the same confusion, to which I have repeatedly referred, between the original Mandate calendar and the years of King Wu's reign (which actually only lasted three years beyond the twenty-five months of mourning for his father). Again it is pre-Qin *Yi Zhou shu* that has proved correct in dating King Wu's death to the year after the Conquest.

[40] 'Basic Annals of Zhou', *Shiji*, 4.120; see also n. 33 above.

[41] *Shangshu dazhuan* (Sibu congkan ed.), 4:5a, 2:16b.

[42] ibid., 4:5a, 2:16b; *Shiji*, 4.118.

Table 4: *Compression of the early Mandate sequence in the* Bamboo Annals

Thirteen-year Mandate Sequence				Corresponding *Bamboo Annals* Sequence		
Event	*Mandate*	*Di Xin*	*Date*	*Date*	*Di Xin*	*Event*
Mandate conjunction		28	1059	1071	32	Planetary conjunction; Earl of the West attacks Mi.
Wen styles himself ' King '; settles dispute between Yu and Rui (*SJ*, *SSDZ*)	1	29	1058	1070	㉝	Mi surrenders; Zhou removes to Cheng.
Zhou attacks Yu (*SSDZ*)	2	30	1057	1069	㉞	Zhou armies attack Qi and Yu, then attack Chong; Chong surrenders
Zhou attacks Mixu (*SSDZ*, *SJ*)	3	31	1056	1068	㉟	Famine in Zhou; Earl of the West removes from Cheng to Feng
Zhou attacks Quanyi (Shi, *SSDZ*); Zhou defeats Qi (*SJ*)	4	32	1055	1067	㊱	Convocation in Zhou; Zhou attacks Kunyi; Heir Apparent Fa sent to survey Hao
Zhou removes to Cheng (*YZS*); Zhou attacks Qi (*SSDZ*)	5	33	1054	1066	37	Zhou builds Bi Yong
Wen attacks Chong (*SSDZ*), *SJ*)	6	34	1053	1065	38	No entry
Famine in Zhou (*YZS*); Wen removes to Feng (Shi)	7	35	1052	1064	39	Xin Jia flees to Zhou
King Wu sent to lay out new city Hao; Wen refuses to send tribute (*HF*)	8	36	1051	1063	40	Zhou builds Spirit Tower; Di Xin demands jade tribute
King Wen dies (*SSDZ*, *YZS*, *HS*)	9	37	1050	1062	41	Earl of the West dies in spring

Key: *SJ—Shiji; SSDZ—Shangshu dazhuan*; Shi—*Shijing*; *YZS—Yi Zhou shu*; *HF—Hanfeizi*; *HS—Han shu*

Broken lines indicate that the sources (*SJ*, *SSDZ*) disagree but that, whichever is correct, the *Bamboo Annals* tendency to backdate the event relative to the Mandate sequence is clear.

Note that in the *Bamboo Annals* chronology Di Xin's reign years 33–36 (circled at right) are correctly associated with the historical events which occurred in those years when collated with the Mandate sequence at left—e.g. 34th year Zhou attacks Chong; 35th year famine in Zhou; 36th year King Wu (Fa) surveys Hao. They have all been moved back exactly four years in relation to the Mandate calendar.

prove that here his reign years were indeed shifted back precisely as predicted as a consequence of the post-discovery reconstruction of the text.[43]

During restoration of the *Bamboo Annals* after its discovery, many other manipulations would clearly have been necessary to rearrange the disordered bamboo slips in a plausible sequence, as thirteen years of actual history were being 'stretched' to occupy twenty-one years of the chronicle. At the same time, events of Di Xin's years 33 to 36 are reproduced as they must originally have appeared before any distortions entered the chronicle. This being the case, their 'fixed' location, because of the fact that they could easily be keyed to the events dated according to the Mandate sequence by collation with sources like *Shangshu dazhuan*, also imposed constraints on the reconstruction of the chronology that are bound to have left traces.

Like the Mandate sequence, these four years of Di Xin (33–36) were moved back relative to the Conquest because of the addition of twelve years to the end of Di Xin's reign. In absolute terms, therefore, the events of Di Xin's 34th year, for example, now became correlated with 1069, rather than with 1053 as in the true chronology, for a total shift of sixteen years (table 3). But because the dates of the Mandate sequence were only moved back a total of twelve years in absolute terms, Di Xin's 34th year, originally equivalent to the 6th year of the Mandate, now came to correspond to the second post-conjunction year, or by definition, the 2nd year of the Mandate. The result was, of course, a net 'loss' in absolute terms of four Mandate sequence 'slots' in which to record events, so that, for example, events of the original Mandate years two to five (e.g. as reported in *Shangshu dazhuan*) would all have had to be squeezed into the short space of only two years between Di Xin's 32nd year (the *Bamboo Annals* date in his reign for the planetary conjunction) and his 34th year. If we now examine table 4 with this in mind we find that this is obviously the case in the current *Bamboo Annals*.

To take another example, Di Xin's true reign of forty years was lengthened by twelve years which he never actually lived in order to provide the span of time needed to correspond to the hypothetical eleven-year pre-Conquest reign of King Wu, plus the final year of King Wen. Di Xin's years 37 to 40 actually corresponded to Mandate years 9 to 12 and should contain the account of King Wen's death and the closing years of the Shang dynasty. But when the chronology was expanded, Mandate years 10 to 12 became transformed into King Wu's years ten to twelve, and Di Xin's years 37 to 40 suddenly became a rather inconsequential period a dozen or so years before the end of the dynasty in his 'new' 52nd year. They were essentially emptied of their contents, the events they contained being reassigned to the 'new' final years of his reign, years 49 to 52. When we look up this period in the *Bamboo Annals* and compare it with the Mandate sequence as reported in other sources, we find something rather interesting (table 4).

In the 36th year of Di Xin's reign the *Bamboo Annals* correctly records that King Wen sent Heir Apparent Fa to lay out the new city Hao. We know that this would have followed the removal to Feng in the 7th year, hence we conclude that the date was originally equivalent to the Mandate 8th year. Then,

[43] This point received special emphasis in my 'Early Chinese astronomy and cosmology', 280–84, where it was also called a 'crucial finding' (pp. 319–20). Two years later Edward Shaughnessy ('The "Current" *Bamboo Annals*', 49) also drew attention to three of these dates but overlooked the fourth, documenting King Wen's activity in Di Xin's 36th year, the 8th year of the Mandate, which corresponds to 1051; see table 4. As I made clear already in 1983, there is a necessary connexion between the survival of these four accurately dated events in Di Xin's reign and my accompanying reconstruction of the entire pre-Conquest chronology. Their significance as solid confirmation of the chronology I had previously proposed evidently escaped Shaughnessy's attention.

in the 40th year of Di Xin's reign the *Bamboo Annals* currently records that Zhou built the Spirit Tower and that the Shang king sent an emissary to demand jade in tribute from Zhou. From other sources we know that King Wen was responsible both for constructing the Spirit Tower and for refusing to pay tribute,[44] hence these events could not really have taken place *four* years after those of the 36th year, since King Wen died in the spring of Di Xin's true 37th year, the 9th year of the Mandate. These two entries in the *Bamboo Annals* thus record separate events that actually occurred in the *same* year; the present *Bamboo Annals* record for Di Xin's 36th year is true and that for the 40th year is false. Only two of the intervening years 37 to 39 have entries in the *Bamboo Annals*, and the sketchy reports they contain are either misplaced, undatable, or both—they are merely ' place-holders '. The same gaps and sketchiness in the chronicle are evident in the ' phantom ' years of Di Xin's reign numbered forty-three to forty-nine. In this way, the superfluous years of the expanded ' twenty-one year ' solution were glossed over or filled with inconsequential or undatable contents.

By now it should be clear that this pattern of distortion in the chronicle's contents as well as the sixteen-year discrepancy between the *Bamboo Annals* chronology and Di Xin's true year count were caused by (i) the twelve-year backdating of the early Mandate calendar relative to the Conquest implicit in the ' twenty-one year ' model employed in reconstructing the *Bamboo Annals* after its discovery, and (ii) the survival in four cases of true records of events that in fact occurred in the precise years in Di Xin's reign to which the chronicle presently assigns them. Only once the 1059 date of the Mandate was astronomically established in 1982 did it become possible to collate the early sequence of events in the Mandate calendar with the current *Bamboo Annals* version of events. The results just outlined therefore attest to the true correspondence between Di Xin's reign years and their absolute dates as given here. Their dislocation by precisely the amounts predicted both in relative (four years) and absolute terms (sixteen years), based on the incommensurate dislocation of the Mandate scale relative to the Di Xin scale, establishes the accuracy of this analysis of the chronology.

The picture of the reconstruction process that emerges from this consideration of the crucial period from conjunction to Conquest can be summarized as follows: first, a ' twenty-one year ' model for the chronology was settled upon, based on the received traditions about the location of Jupiter during the Conquest and during the earlier planetary conjunction, and based on the mistaken assumption that the Conquest occurred in King Wu's 12th year. On the basis of this model the attempt was made to identify the proper year to which the *Bamboo Annals* entries, many of which lacked dated headings, should be assigned. Once the model was decided upon, the conjunction and Conquest were easily entered under the appropriate years, as were the entries for Di Xin's years thirty-three to thirty-six that still must have carried the original dated headings. These could be directly checked against the Mandate sequence as reported elsewhere. Since, however, these were original records, they forced certain adjustments when inserted into the new distorted chronology. One result was that the events of Mandate years two to five were squeezed into a space of only three years, while the events of Di Xin's 36th to 40th years became thinly distributed over the twelve newly-created years 41 to 52. The wholesale

[44] See ode 242 ' Ling tai ' 靈臺 in the decade of ' Wen Wang ' in the *Book of Odes*, tr. Bernhard Karlgren (Stockholm: Museum of Far Eastern Antiquities, 1950), 196–7; *Han fei zi* 韓非子 (Sibu beiyao ed.), 7:6a.

manipulation of both the relative chronology just described and the consequences for the absolute chronology, i.e., the additional eight-year backdating of the Mandate conjunction, together with the interpolation of the location ' Room ' for the conjunction, and the likely misplacement of the slip containing three years of King Cheng's reign, all point to a post-A.D. 281 date for this entire process, one that bears all the earmarks of a painstaking effort to reconstruct a seriously defective text.