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## Chinese Polymaths, 100–300 AD:

### The Tung-kuan, Taoist Dissent, and Technical Skills

This essay is on a relatively new topic of cultural history called polymathy. I examine well-known scholars and writers of an early period of China with specific attention to their mixtures of skills and teachings, why and which ones, and how those skills and teachings might (or might not) have worked synergistically. To some, this may seem mysterious, since it involves, in some sense, smartness and mental goings-on as reified subjects. It can seem superficial as well, if we do not rise above merely cataloging the different things people learned, or could do. I want to avoid both mistakes as much as possible by giving solid cultural and social contexts for a time in China when skills were compounded and advanced, and by looking into certain polymaths' lives and styles of intellectual expression.

The word polymathy comes out of ancient Greek debate and criticism. One pre-Socratic reference, though a negative one, is Heraclitus's criticism of other schools. The relevant passage accuses Pythagoras' "*polymathia*" of being trite and overly broad (a mere concoction of others' opinions and writings) – implying that it was a type of malpractice.<sup>1</sup> Heraclitus valued instead learning that stemmed from "sight, hearing" and "experience," as opposed to hearsay and writings,<sup>2</sup> which tended

I APPRECIATE the insights and corrections offered by both Chou Min-chih (passages from *Chin-shu*) and David Knechtges (comments on a previous draft and leads to articles by current Chinese scholars). There are numerous places in my writing and translations that were profoundly improved, only some of which I point out in the notes. Furthermore, the anonymous reviewers supplied corrections and criticism that led to a recasting of my approach. Naturally, remaining errors are solely my responsibility. I thank Anthony Grafton for pointers to new studies on Western polymathy. Finally, cheerful encouragements were given by Denis Twitchett in the last 15 or 20 months, up until his very recent death (as I write this in Summer, 2006). Denis was intrigued by my having found things to say about Li Ch'un-feng's habits of scholarship. We already miss the grand man very much.

<sup>1</sup> Herbert Granger, "Heraclitus' Quarrel with Polymathy and *Historiê*," *Transactions of the American Philological Association* 134.2 (2004), pp. 246–48.

<sup>2</sup> *Ibid.*, p. 249. Plato's writing shows that leaders were promoting interrelated skills, but, like Heraclitus, Plato had his preferences. He deemphasized mere computations (for exam-

toward solipsism. From this we get clues about methodological and epistemological divergences that may crop up in cultures of writing and debate. Polymathy might be thought aggressive or against other agendas. It might be considered an attempt at a new style; its practitioners might have to prove (in the marketplace) exactly what more is required, over and above extant ways of knowledge.

This aspect of divergence raises a caveat: those who might profess a new compound of arts are already working from a background noise, something I propose to name “polydidactics.” If we are admitting up front that our study concerns highly educated and classically trained social leaders, and not farmers and artisans, many of whom had several skills (including prognostication, which in a sense is all about knowing) but little or no standing in cultural circles, then we must not be misled by statements about “comprehensive studies” (*po-hsüeh* 博學). In early Chinese historical and epigraphical material, especially the social biographies that, beginning around early-Han times, were routinely introduced into historiography, frequently we have the above, and other, judgments, like “comprehended the [many] scriptures 通經”; “surveyed diagrams and prognostication texts 覽圖讖”; and “was a thorough exegete/scholar 通儒.” *Po-hsüeh* in fact is somewhat parallel to the Western word “polymathy” in that *po* means broad, or ample coverage (if not specifically “multi-,” or “many,” as in “*poly*”). *Hsüeh* can imply “*mathêma*,” a Greek word indicating a formal learning – an art requiring discipline; and there are apposite examples of the latter from early Chinese classics.<sup>3</sup> Only later did the contexts of *mathêma* in the West fix more narrowly on calculation and mathematics.

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ple, in buying and selling) and emphasized abstract numerical qualities like proportion and mathematics for preparing minds for higher thinking; Henri Marrou, *A History of Education in Antiquity*, trans. George Lamb (New York: Sheed and Ward, 1956), pp. 74–75. Macrobius, early 400s AD, mentioned the multi-skilled man as a showoff, although his *Saturnalia* was a model of how polymathy should function in Percival Vaughan Davies, trans., *Macrobius: The Saturnalia* (New York: Columbia U.P., 1969), p. 75 (the beginning of *Sat.* 11).

<sup>3</sup> See *Lun-yü* xv1/9, which ranks *hsüeh* (the inculcation of a certain knowledge or art by instruction) beneath innate, sage-like knowledge; but also it divides those who *hsüeh* into those who do or do not go through difficulties (*k'un* 困) in the process. Bernhard Karlgren's *hsieh-sheng* analysis of *hsüeh* 學 judges it a cognate of 斃 (*loc. class.* *Shu-ching*), with the straightforward meaning “instruct/take instruction,” in the context of practical skills like archery; yet he rejects Chinese glosses that attempted to link it phonetically with 教 and 效. In Karlgren's series 學 resonates phonetically and semantically with 覺 (awake, rouse to understanding) and 學 (loc. class. *Shih*, “disturb”); Karlgren, “Loan Characters in Pre-Han Texts,” *BMFEA* 35 (1963), p. 127. This general sense of “disturb” and “rouse” is indirectly present in *Lun-yü*'s “*hsüeh*,” because “difficulties 困” is part of a semantic set that offers “摑 beat or pound,” “樞 闔, door threshold, or sill.” Thus, if one happens not to be a sagely “knower,” then at least it is respectable to gain knowledge by means of a jarring, or wearing discipline.

Functioning as background, polydidactics is the impulse of self-conscious intellectuals to establish encompassing programs of reading and learning, and is common to a variety of early and modern civilizations. When it shades over into defined arts, philosophies, and religious traditions, it can indicate eclecticism or can be the simultaneous, or serial, profession of more than one school of scripture or belief. For early Europe, this background of wide learning has received a grand treatment by Henri Marrou.<sup>4</sup> Roman learning, with its immediacy of application, evolved into programs to help qualify young men for entrance into the social world of erudition and, later, Christian nobility. Oration and the urge to obtain skills needed to hold power, win in battle, and establish a legacy were yielding over time to literary erudition.<sup>5</sup> For Augustine and others, we can generalize by saying that the motive was the immediate pleasure in knowing, not the modern sort of postponement of larger knowledge by building up cooperative subfields of discourse and observation. Augustine's core was traditional – grammar, dialectic, rhetoric, arithmetic, music, geometry, astronomy, and philosophy. But polymathy of this type was still basically polydidactic. It was not for capturing an essence or cause in nature, nor to systematize natural histories. It was for the properly burnished life – a Platonically Christian, yet Roman, culture shared among the elite and the erudite leaders of church and society.<sup>6</sup> We see perhaps a Plato/Aristotle divide here: Plato's educated men were to study abstract figurations (like the *tetraktys*), arithmetic, harmonics, and geometry in order to reach the realm of high contemplation. Aristotle's approach to wide-learning was not just to criticize previous philosophers but to proceed with a whole program of induction and new teachings about theories of the real world. Polydidactics was, in a sense, passive and focused on the wholeness of mind; polymathy relied on broad learning but strove to produce new writings and to synthesize researches.<sup>7</sup>

<sup>4</sup> Marrou, *History of Education*; idem, *Saint Augustin et la fin de la culture antique* (1958; Paris: Éditions E de Boccard, 1983).

<sup>5</sup> Marrou, *Saint Augustin*, pp. 122–25.

<sup>6</sup> *Ibid.*, pp. 192–93. Part of the need to keep arts and skills well-modulated and in service of the proper life was the tendency to view them as potentially unorthodox; eg., some early Christians, like Hippolytus (early third century), criticized astrology, mathematics, and physiognomy as either unknowable, or practices of mere diviners. See Etienne Gilson, *History of Christian Philosophy in the Middle Ages* (New York, 1955), pp. 24–26.

<sup>7</sup> Alfred W. Crosby, *The Measure of Reality: Quantification and Western Society, 1250–1600* (Cambridge: Cambridge U.P., 1997), pp. 15–16. Jan C. Westerhoff cautions that early polymaths did not intend to induce all known major categories of knowledge; there was no dictum to be encyclopedic or universalistic. Instead it was pansemiotic: interest in nominal categories, meanings, renderings, and hidden links – a scholarly style that drew criticism in early-modern times. Moreover, polymathy carried its own literary twin – the *poeta doctus*, the well-educated

This paradigm holds true in a general way for early China. A leading and multi-talented Chinese scholar of the fifth century – P’ei Sung-chih 裴松之 (372–451) – had this to say about enriched learning, as found in his court memorial that explained his new commentary on (and enormous addition to) a late-third-century AD history titled *San-kuo chih* 三國志:

Your subject Sung-chih has this to say: I have heard that when knowledge is complete, then the myriad patternings submit of their own accord 智周則萬理自賓; [just as] if a mirror is [set up] far enough away, then no object escapes reflection 鑒遠則物無遺照. [Although], we [historians] exhaust our inner natures and thoroughly explore minutia, certain profundities cannot be known 雖盡性窮微, 深不可識, and when we get to where the left-over threads [of things] happen to be, we are thus simply taking up the crude traces 至于緒餘所寄, 則必接乎粗迹. Considering such [ideas], the measure of [how much] one embodies complete preparation is found in the saying: ‘He was fond of examining the accessible (lit.: near-to-hand) remarks 是以體備之量, 猶曰好察邇言.’<sup>8</sup> The extent of one’s having “cultivated virtue” lies in his “vast knowledge of former affairs” 畜德之厚, 在於多識往行.<sup>9</sup> . . .<sup>10</sup> In my humble opinion,<sup>11</sup> just as in [making] pictures the plethora of colors forms patterns, also, for [making] honey, the bees select from many scents. In this way, [we scholars] are able to have patterns from the [interlacing of] color into the plain white; and sweetness that stands out beyond

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belle-lettrist who looked into that same web of interlinked meanings; see “A World of Signs: Baroque Pansemioticism, the *Polyhistor* and the Early Modern *Wunderkammer*,” *Journal of the History of Ideas* 62.4 (2001), pp. 640–41; see his n. 51 for a list of recent works in this fledgling field, and p. 650, re. *poeta doctus*. A useful approach to early Chinese thinkers’ multiplex cultures and intellectual choices is given in Robert Ford Company’s “Two Religious Thinkers of the Early Eastern Jin,” in this issue of *Asia Major*.

<sup>8</sup> P’ei here draws on the classic *Li-chi* (sect. “Chung-yung”); cf. James Legge, trans., *Confucius: Confucian Analects, The Great Learning, and the Doctrine of the Mean* (1893; rpt. N.Y.C., Dover Publications, 1971), p. 388: “Shun loved to question others, and to study their words, though they might be shallow.”

<sup>9</sup> This draws on the *I-ching* “Image” commentary to hex. no. 26. Cf. trans. James Legge, *The Yi King*, part 2 of *The Sacred Books of China: The Texts of Confucianism* (rpt. New York: Scribner’s, 1899), sect. 1 of app. 2, p. 300: “The superior man . . . stores largely in his memory the words and deeds of former men, to subserve the accumulation of his virtue 君子以多識前言往行, 以畜其德.”

<sup>10</sup> I omit two passages here: praise for the emperor and a description of how P’ei will fix the deficits in the history he was commissioned to annotate.

<sup>11</sup> At this point P’ei points to Confucius; see *Lun-yü* 111/8, with its metaphor of a beautiful woman whose features are thought of as the colorations 絢 applied to her basic, good plainness 素; Confucius said, “The colours 纘事 [the phrase borrowed by P’ei, below, specifically to mean “pictures”] are put in after the white” (trans. D.C. Lau, *Confucius: The Analects* [London: Penguin Books, 1979], p. 68).

[its mere] basic essence. 竊惟續事以衆色成文，蜜蜂以兼采味，故能使絢素有章，甘逾本質”<sup>12</sup>

P’ei’s rhetoric calls upon the wide-ranging bee in order to form an apologetic: he is explaining why he has reshaped a long-accepted history book. P’ei’s reworked *San-kuo chih* received criticism for having pasted in such a large amount of texts (at another point in the same memorial, he derided his own work as a “mess of ink”), but he truly believes that his was a natural sort of flavor-blending. It was the holism of his craft that he respected. We note that neither his “completed knowledge” (literally, “knowledge that makes a circuit”) nor his wide-angled epistemic mirror spelled out specific skills for pedagogy or for producing new texts and new research, as the Aristotelian program proposed. Although P’ei’s bees could aid the relatively rare world of court historiographers (like himself), they were still not able to deliver a pedagogical premix to virtually anyone, as even Macrobius’s own metaphorical bees, as seen in *Saturnalia*, ostensibly could.<sup>13</sup>

The following study of Chinese polymathy touches on three areas: cultural history and its local features, synergies among skills, and, at a secondary level, the impact upon our historical methods. First, polymathy comprises cultural artifacts like books and archives, writing and drawing tools, devices and antiquarian objects, and on a larger scale – curricula, patronage, and institutes. In the last fifteen years or so, various studies in European history that deal with skill-acquisition, reading, and learning have thrown much light on polymathy.<sup>14</sup> We have seen microhistories of reading tools and guides (for example, studies of

<sup>12</sup> Yen K’o-chün 嚴可均, *Ch’üan Sung wen* 全宋文 (Taipei: Shih-chieh shu-chü, 1969) 17, p. 1b, citing the preface to the Ming palace edn. of *San-kuo chih* 三國志; also printed in the Chung-hua edn. of *San-kuo chih*, pp. 1471–72. Cf. trans. of Carl Leban, “Ts’ao Ts’ao and the Rise of the Wei,” Ph.D. diss. (New York: Columbia U., 1971), pp. 30–31. My translation was improved by the comments of an anonymous reviewer.

<sup>13</sup> *Saturnalia*, trans. Davies, p. 27: “We ought in some sort to imitate the bees; and just as they, in their wanderings to and fro, sip the flowers, then arrange their spoil ... and transform the various juices to a single flavor by in some way mixing with them a property of their own being... the actual process of arrangement... blends the diverse extracts to make a single flavor.” Macrobius set this in the context of a panegyric on Virgil, and offered the specific skills needed for erudition and a cultured life.

<sup>14</sup> See Anthony Grafton, “The New Science and the Traditions of Humanism,” chap. 5 of idem, *Bring Out Your Dead: The Past as Revelation* (Cambridge, Mass.: Harvard U. Press, 2001), pp. 97–117; Paula Findlen, “The Last Man Who Knew Everything... or Did He?: Athanasius Kircher, S.J. (1602–1680),” in Findlen, ed., *Athanasius Kircher: The Last Man Who Knew Everything* (Routledge: New York and London, 2004), pp. 1–48, and other authors in this collection; Ingrid D. Rowland, *The Ecstatic Journey: Athanasius Kircher in Baroque Rome* (Chicago: U. Chicago Library, 2000); and, finally, Pascale Hummel’s latest work, *Moeurs érudites: Étude sur la micrologie littéraire (Allemagne, XVIIe – XVIIIe siècles)* (Geneva: Droz, 2002), which unfortunately I could not obtain.

vademecums and florilegia, reading machines, and footnoting).<sup>15</sup> Such cultural studies show up on the China side as well, with recent studies of late-imperial print culture,<sup>16</sup> *k'ao-cheng* scholarly culture (with a strong sense of how polymathy worked),<sup>17</sup> and important recent conference panels on the role of paper, textual design, and graphics in early China.<sup>18</sup>

Local markers and trends are important social aspects of any study of culture: at a certain time and place scholarly leaders shared interest in a specific set of skills; they formed groups and acted in concert so as to further studies. Benjamin Elman has brought out such themes in the local circles of scholarship in southern China in the 1700s.<sup>19</sup> A new contribution concerning early China is that of David R. Knechtges, who examines the social and political contexts of a polymathic group (focusing mainly on art and calligraphy) in the late Eastern Han period.<sup>20</sup>

Synergy has been discussed insightfully in Chang K'o-li's 張可禮 study of the Eastern Chin polymathic set consisting of painting, calligraphy, poetry, and music, and my article has benefited greatly from

<sup>15</sup> See Elizabeth L. Eisenstein, *The Printing Revolution in Early Modern Europe* (Cambridge: Cambridge U.P., 2005); Anthony Grafton, *The Footnote: A Curious History* (Harvard University Press, 1997); Anthony Grafton and Lisa Jardine, "Learning for Action: How Gabriel Harvey Read His Livy," *Past & Present* (November 1990); and Anthony Grafton and Howard L. Goodman, "Ricci, the Chinese, and the Toolkits of Textualists," *AM* 3d ser. 3.2 (1990), pp. 95-148, which shows how ways of using and reading classical texts and the synergies afforded by graphic arts and technologies could both make and break the relations that the 16th- and 17th-c. missionary Jesuits established with Chinese scholars.

<sup>16</sup> E.g., Cynthia Brokaw and Kai-wing Chow, eds., *Printing and Book Culture in Late Imperial China* (Berkeley: U. California P., 2005), and Lucille Chia, *Printing for Profit: The Commercial Publishers of Jianyang, Fujian (11th-17th Centuries)* (Cambridge, Mass.: Harvard U. Asia Ctr., 2002). There is also the landmark book on Ch'ing florilegia by R. Kent Guy, *The Emperor's Four Treasuries* (Cambridge, Mass.: Council on E. Asian Studies, Harvard U., 1987). Note too the panel "Printing and Religion in Late Imperial China," chaired by Robert E. Hegel, at the 57th Annual Meeting of the Association for Asian Studies, March 31-April 3, 2005, Chicago.

<sup>17</sup> Benjamin Elman *From Philosophy to Philology: Intellectual and Social Aspects of Change in Later Imperial China* (Cambridge, Mass.: Harvard U.P., 1984), pp. 49, 58-59, 64, also 181-88.

<sup>18</sup> Note the panel "The Uses of Manuscript Culture," chaired by Michael Puett, at the 57th Annual Meeting of the Association for Asian Studies, March 31-April 3, 2005, Chicago; and the panel on Chinese literature chaired by Paul Kroll at the 216th Meeting of the American Oriental Society, March 17-20, 2006, Seattle, with papers on the structural genesis of texts.

<sup>19</sup> Benjamin Elman, *Classicism, Politics, and Kinship: The Ch'ang-chou School of New Text Confucianism in Late Imperial China* (Berkeley: U. of California P., 1990), examines a localized phenomenon that from late-Ming to Ch'ing engendered New Text ideals, e.g., T'ang Shun-chih's appeal to reestablish the Six Arts and bring learning back to "comprehensive studies (*po-hsüeh*)," the use of mathematical ideas, and the place of *I-ching* in Hui Tung's Han Learning movement (*ibid.*, pp. 79-83, 130-34).

<sup>20</sup> "Court Culture in the Late Eastern Han: The Case of the Hongdu Gate School," unpub. paper (2005). I thank the author for sharing his draft with me.

his findings.<sup>21</sup> We should observe how certain skills in a polymathic set interpenetrated and created new connections – a key way of defining polymathy that is related to the “Aristotelian” side of the paradigm. Finally, polymathy studies help us to recover the past by using well-demarcated fields of historical research as mirrors that capture what an early society of thinkers was attempting by means of their own well-demarcated fields. It is not entirely un-emic of us to use separate categories like history of science, art history, literature, and religions to perceive early thinkers’ notions and writings (and genres) because, as my article shows, educated Chinese were voracious polydidacts who also clustered along separate nexuses of interpenetrating skills in order to find new meanings and to create. I happen to concentrate on “skills and technics” of a natural philosophy sort, and I hope to foster research and discussion about those Chinese polymaths who gave shape to early sciences and increase our appreciation of their measuring, comparing, computing, and testing. Occasionally one encounters resistance to all this as being far too technical, too unrelated to important “history.” It seems, however, that with the recent work on scholarship and arts of the Han and post-Han period, we are ready to appreciate other shapes and can do so even if all the court coups and battles have not been blocked out. There is a place for detailed studies of polymathies, not only the famous nexus of painting, calligraphy, and poetry, but also the technically oriented scholars. Just as Chang asks about the relationship between the line-drawing technique of calligraphy and the pictorial techniques of landscape painting (see my Conclusion), we should be asking, “what might an armillary device have meant to a Five-Processes *I-ching* diviner, or testing old bell-chimes to a lyricist”?

In approaching the arts and skills of early China, we have moved beyond that old saw – China the flat plane of political and ethical analogies uttered through disembodied texts – and now comprehend a world of invention and breakthrough. Because of archeology, we now know that bodily processes, design and manufacture, and nature, and arts were common features of life. Donald Harper, Nathan Sivin, Christopher Cullen, Li Ling 李零, Constance Cook, Lai Guolong, and others have shown that the transmission of texts and materials far removed from Confucian concerns was increasingly important from about the fourth century BC onward. Their work takes up both poorly utilized and newly found evidences for physiology, materia medica, astronomy, and such techniques as topomancy, trigram divination, and correla-

<sup>21</sup> *Tung Chin wen-i tsung-ho yen-chiu* 東晉文藝總合研究 (Tsinan: Shan-tung ta-hsieh ch'u-pan she, 2001), esp. pp. 288–96. David Knechtges is to be thanked again for alerting me to this work.

tive matrices, often for occult and self-cultivation purposes. Following Harper's lead, we should see all these as aspects of natural philosophy, there having been no unifying sense of one "science," nor a professionalization of endeavors into techniques and systems, with social and state supports.<sup>22</sup> In the time-period covered in the present essay, however, some of the features of Harper's thumbnail model were already changing.

How culturally descriptive can we be about China of 100–300 AD? Although I mention parallels with the West (see my Conclusion for further thoughts), this article is not comparative history; that would be interesting in a post-Needhamian, richly informed study of parallel themes, and has been successfully done for ancient Greece and China of roughly 400 BC to 100 AD.<sup>23</sup> My chief concern is first to construct the history of China's Tung-kuan 東觀, a court institution of learning and polymathy during the period of the Eastern Han (25 AD–220 AD) dynasty. This gives us social footholds for describing changes in specialized and intensified scholarship and enables us to block out a preliminary explanation for why the old model of "man of broad learning," or "excelled in all the texts," cannot tell the whole story of arts and technics in a changing political and social landscape after about 100 AD. Subsequent sections deal with polymaths outside the Tung-kuan ambit and in fact after its demise. We see that certain polymaths arranged their intellectual tools in order to plead for specific mastery using a rhetoric of correlative natural philosophy; and others, including prestigious family lineages, were influenced by the older Tung-kuan style and fashioned careers that provided access to the technical arts demanded by court rites. I conclude with a table of twenty-six scholar-experts of the Cheng-shih 正始 era in order to support my arguments about scholar-families, and about synergies.

I present the Tung-kuan as a unique way to see how knowledge of the world, and, specifically, the compounded and enriched knowl-

<sup>22</sup> See Harper, "Warring States, Qin, and Han Manuscripts Related to Natural Philosophy and the Occult," in Edward L. Shaughnessy, ed. *New Sources of Early Chinese History: An Introduction to the Reading of Inscriptions and Manuscripts* (Berkeley: The Society for the Study of Early China and Institute of East Asian Studies, U. California, 1997), pp. 223–52; Cullen, *Astronomy and Mathematics in Ancient China: The Zhou bi suan jing* (Cambridge: Cambridge U.P., 1996); Li Ling, *Chung-kuo fang-shu hsü-k'ao* 中國方術續考 (Peking: Tung-fang ch'u-pan she, 2000); idem et al., *Chung-kuo fang-shu kai-kuan* 中國方術概觀 (Peking: Jen-min Chung-kuo ch'u-pan-she, 1993); Cook, *Death in Ancient China: The Tale of One Man's Journey* (Leiden: E. J. Brill, 2006); and Sivin, "Cosmos and Computation in Early Chinese Mathematical Astronomy," *TP* 55 (1969), pp. 1–73. Also, see the article by Lai in this issue of *Asia Major*.

<sup>23</sup> G. E. R. Lloyd and Nathan Sivin, *The Way and the Word: Science and Medicine in Early China and Greece* (New Haven: Yale U. Press, 2002).

edge that was expected to emerge from huge archives and stores, was a mission of the imperial center, who kept its resources close to the vest. Although not a bureaucratic unit, the Tung-kuan clearly stood out from such bureaucratic fixtures as academies (both regularized and ad hoc ones) and the Imperial Library. It was a plum offered to important male scholars, even though it was inside the imperial residential area and was frequented by women and eunuchs. Those male scholars had to receive certain low-ranked postings in order to have access, and in fact access itself became politicized. Since the imperial center was primarily interested in gaining new historical sketches of itself (the annals and group biographies), the whole endeavor was fraught with emotion, secretiveness, and factional tensions that arose from a surrounding political violence.

Second, I wish to provide another tool by which to think about the words “Taoism” and “taoistic” for this period in Chinese history. My study shows that if we take up the surface clues – the writings of commentaries on Tao classics, inscriptions on Lao-tzu shrines – we easily come to deeper nuances, like eremitic and martyrological styles of protesting and suffering, and the patronage and contexts for technical arts. I want to bring out a certain flavor of late-Han to early-Chin intellectual culture that shows high-minded attitudes about highest principles, like Tao and mystery, and what those attitudes brought to clusters of “Pure Officials” struggling to learn more through the resources of the throne, yet keeping their identities.

Out of a background of erudition arose a Tung-kuan style of arts, and I focus specifically on the technical, often numerate, ones, partly since there has already been solid work on the polymathies involving belles-lettres and calligraphy, as just mentioned. I see a historical development: technics achieved for the first time a high place in court culture and in families’ searches for learning after the Tung-kuan vanished. The new polymathy lived into Wei and Chin, but was eclipsed by the high status of the fine-arts polymathy of the Southern Dynasties. Only with the concerted work of southern and northern experts from about 450–550, and the work of archives and collecting as pursued by Sui and early-T’ang court conclaves, did the notion of Tung-kuan polymathy get revived for a time by the T’ang bureaucracy.

Just as new modes of mathematical problem-solving had impacted astronomy from 100 BC to 100 AD in China, so did synergies occur later, as research into musicology, for example, impacted metrology and archeology. In the 170s, famous scholars sought out low-ranked

music artisans in order to complete their work. Synergies were blocked, as well: a scholar bent on measure and computation might not have his work accepted or his request to enter the Tung-kuan granted. Technical masters were in some contexts thought not to be as refined as calligrapher-painter-poets.

#### THE TUNG-KUAN AND A SOCIAL HISTORY OF TECHNICAL RESEARCH

As in the West, polymathy in China was more than simply having several skills. First of all, it had to do with China's own deeply entrenched polydidactics and the burnished life. Confucius' *Analects*, especially Books 1 and 7, mentions learning in various ways, but the contexts are pegged to good breeding and spiritual growth, not a program of discrete skills. Post-1919 scholarship in China, in a nearly Hardouinian skepticism that agonized over the sources of Confucianism,<sup>24</sup> began to flesh out problems in the pre-Han and Han origins of court rites and arts, and this has been ably summarized in recent scholarship.<sup>25</sup> The evidences having been pored over, there seems not to be a very early notion of polymathy like that of ancient Greece. Confucian views on it, starting around 200 BC and sharing some characteristics with Augustine's program, talked of pedagogy and retrospective constructions of a somewhat mythic rites program. Not until the classicism surrounding Han Wu-ti's 武帝 (r. 140–86 BC) court and later, would private scholarship break out of court ideological debates and argue through revived textual and ritual authorities, reflecting on polymathy in the process. Some of the strongest inputs came from Ssu-ma Ch'ien 司馬遷 (ca. 145–ca. 86 BC), who gave a definitive role to taoistic habits of learning and epistemology, drawing as he did on earlier taxonomies of the intellectual world.<sup>26</sup> Ssu-ma Ch'ien (presenting ideas of his his-

<sup>24</sup> On Hardouin's polymathic conspiracy theories, see Anthony Grafton, "Jean Hardouin: The Antiquary as Pariah," chap. 10 of *Bring Out Your Dead*.

<sup>25</sup> An important work is Ku Chieh-kang's 顧頡剛, *Ch'in Han te fang-shih yü ju-sheng* 秦漢的方士與儒生 (1935; rpt. Shanghai: Ch'ün-lien ch'u-pan she, 1955); see Nicolas Zufferey, *To the Origins of Confucianism: The Ru in pre-Qin Times and during the Early Han Dynasty*, Schweizer Asiatische Studien 43 (Bern: Peter Lang, 2003); also Martin Kern, "Ritual, Text, and the Formation of the Canon: Historical Transitions of Wen in Early China," *TP* 87.1 (2001), pp. 43–91, which points out the transition from performative exegetes to textual critics.

<sup>26</sup> The field concerning early historiographical thought and the intellectual habits of Ssu-ma Ch'ien, Liu Hsiang, and Pan Ku is a large one; see the recent summation in Sarah A. Queen, "Inventories of the Past: Rethinking the 'School' Affiliation of the *Huainanzi*," *AM* 3d ser. 14.1 (2001), pp. 51–72, and her sources, one of which is particularly worth mentioning: Mark A. Csikszentmihalyi, "Traditional Taxonomies and Revealed Texts in the Han," in Livia Kohn and Harold Roth, eds., *Daoist Identity: History, Lineage, and Ritual* (Honolulu: U. Hawaii Press, 2002), pp. 81–101.

torian father as well) instructed society at large and the court in particular on how to set the world right, and to do so a Taoist hermeneutic was needed. A polydidact or a polymath who achieved a certain Taoist authenticity would be able to employ all teachings, but still maintain an unharried and managerial style of non-action. This occupied a thin border with hermeticism, because it implied a mysterious process for attaining this particular burnished life, not a positivistic process of certain books, certain tools, certain skills. It may seem somewhat on the Plato side of the paradigm.

It is important to stress that for premodern China, especially before about 1000, polydidactics was enmeshed with a large variety of thoughts about sages as social messiahs and writing itself as talismanic or transcendently effective. These notions resonated with China's most ancient mortuary practices, where mysterious knowledge meant in many contexts actual written templates and matrices as cosmic guides to unknown postmortem places, and a panoply of required arts in computing, medicine, and demonifugics in order to remain safe. It is my contention that late-Warring States mortuary culture, with these assumptions and tools, carried forward into early Han as certain taoistic skill-sets – skills that both polymath court ritualists and local diviners practiced as ways to guide, know, and heal. In Ssu-ma Ch'ien's view, such arts seem universalistic and taoistic for their epistemological holism, but they were also the stock in trade of real religious communities after about 100 AD. Healing and preaching groups in remote areas, groups partaking in urban temple cults and feasts, and even the court, at times discussed the sort of revealed knowledge as described in *T'ai-p'ing ching* 太平經. The latter, for example, promoted a bizarrely busy polydidactics, in which the editing and circulating of texts were a key to attaining the company of post-apocalypse electi.<sup>27</sup>

There was also a rich, quotidian aspect to early China's polymathy. By about 100 BC, anyone who knew his way around the imperial city would have recognized all manner of arts and skills that required supervision. Cosmopolitan culture at the capital blossomed, with new state wealth and the growth of the dynasty's royal establishments and its service and advisorial offices. A vast array of craft and technics came under the purview of only a handful of important scholar-led ministries, for example, the Grand Master of Ceremony 太常, where subalterns oversaw the Academy and practiced astrology, astronomy, music harmonics and performance, as well as divination arts. The minister who

<sup>27</sup> Grégoire Espeset, "Revelation between Orality and Writing in Early Imperial China: The Epistemology of the *Tai-ping jing*," *BMFEA* 74 (2002), pp. 70, 78.

headed the Privy Treasury 少府 oversaw, *inter alia*, animal husbandry and butchery, weaving and sewing, and medical doctors. In some sense, then, it is possible to say that the polymathic developments of 100–300 AD reflected officialdom's reengagement with, or continued dedication to, specialized, sometimes numerate and usually systematic, skills that came under their purview. Earlier, it seems that many of the important skill-areas evolved under the work of only a few geniuses, like the astronomer Ssu-ma Ch'ien and his family, or were practiced by rote among court service artisans. But there was much room in the middle of this spectrum, and hundreds of Eastern Han scholars, inspired by recovered texts and the Tung-kuan, revived older tools and texts, and brought critical arts to bear on the court's rituals. From this came corrections and improvements in skills.<sup>28</sup>

*The Eastern Han Tung-kuan* 東觀 (*Eastern Outlook/Lodge/Observatory*)

In about 600, Niu Hung 牛弘 (545–610), the author of the *Sui-shu* 隋書 treatise listing the books held in imperial libraries, summarized the role that repositories and editing teams had played in reestablishing learning during the early Eastern Han, after years of civil strife. He noted that emperors Ming 明帝 (r. 58–75 AD) and Chang 章帝 (r. 76–88) both desired a review of classics (or, texts) 經 and arts 術; and thereafter talented scholars 儒 physically brought their texts and arts to the capital in Loyang, and several structures, including the Tung-kuan, became filled. Further, we are told that Pan Ku 班固 (32–92 AD) and Fu I 傅毅 (ca. 47–92), as gentlemen-collators 校書郎, were put in charge of these attractive collections.<sup>29</sup> This summary is highly synthesized and contains small problems.<sup>30</sup> Moreover, what it says about the Tung-kuan does not mesh exactly with the meager sources. The question of how the court's Tung-kuan, archives, and libraries functioned

<sup>28</sup> Knechtges, "Court Culture," targets an important aspect of polymathy in late-Eastern Han by looking at literati reactions against the way a new academy, set up in 178 by the emperor, was being used in order to staff mere local men with skills and give them what seemed to the literati to be pseudo-scholarly credentials. He brings out issues concerning the role of calligraphy and painting in the skill-set of scholars.

<sup>29</sup> *Sui-shu* 隋書 (Peking: Chung-hua shu-chü, 1973; hereafter, *SS*) 32, p. 906; cf. trans. Jean-Pierre Drège, *Les bibliothèques en Chine au temps des manuscrits (jusqu'au Xe siècle)* (Paris: École Française d'Extrême-Orient, 1991), pp. 21–22, who I believe errs in saying "La salle de pierre de la Terrasse des Orchides": they were two places – the Stone Chamber and the Magnolia Terrace, as evidenced in *Hou Han-shu* 後漢書 (Peking: Chung-hua, 1965; hereafter, *HHS*) 79A, p. 2548.

<sup>30</sup> Pan was clearly made a gentleman 郎 (*HHS* 40A, p. 1334, cit. comm. and 1335), but there is confusion about the title of gentleman-collator (p. 1353, *chiao-k'an chi*), a Han post for which we have few data; Hans Bielenstein, *The Bureaucracy of Han Times* (Cambridge: Cambridge U.P., 1980; hereafter, *Bureaucracy*), p. 59.

as bureaucratic entities from late Eastern Han forward is something I return to, below.

Two modern historians, Hans Bielenstein and B. J. Mansfelt-Beck, have aimed at a reconstruction of Eastern Han historiography. In doing so, they both gave due place to a “Tung-kuan” that supported the scholars and scribes who produced *Tung-kuan Han chi* 東觀漢記.<sup>31</sup> Their work is but a starting point from which this essay takes off into the social history of learning. We are helped by other recent research, which has noticed that the lives and ideas of Tung-kuan scholars resonated with shifts in classicism and politics. The Tung-kuan helped generate new Taoist values and new scholar-martyr heroes. This very theme was featured in the late Jack L. Dull’s (1930–1995) paper titled “The Confucian Origins of Neo-Taoism.”<sup>32</sup> The paper brought out the social and intellectual contexts that informed a number of Taoist-leaning scholars of Eastern Han whom he grouped as a Tung-kuan nexus. Several comments and connections that I make, below, complete and amplify Jack Dull’s findings and might be thought of also as a tribute to his memory.<sup>33</sup>

<sup>31</sup> Part of the text survives through extracts in the commentarial literature surrounding the much later *Hou Han-shu*; Hans Bielenstein, *The Restoration of the Han Dynasty* (Stockholm: Museum of Far Eastern Antiquities, 1950–59) 1, pp. 10–11; B. J. Mansfelt-Beck, *The Treatises of Later Han: Their Author, Sources, Contents and Place in Chinese Historiography* (Leiden: E. J. Brill, 1990), pp. 20–24.

<sup>32</sup> This was presented at the Second Intl. Conf. on Taoist Studies, sponsored by the E. Asian Research Ctr., ACLS, and Harvard U., Sept. 1–7, 1972. (An uncataloged copy for many years was kept in a box of conference papers at U. Washington, East Asian Library). Mark Laurent Asselin, “‘A Significant Season’: Literature in a Time of Endings: Cai Yōng and a Few Contemporaries,” Ph.D. diss. (Seattle: University of Washington, 1997), p. 147, cites it as presented at a conference in Japan, using the above dates, thus it would appear that the conference was in Japan, but sponsored by those several institutes. From Asselin we learn that a Japanese version was published in 1997, in Sakai Tadao 酒井忠夫, ed., *Dōkyō no sōgōteki kenkyū* 道教の総合的研究 (Tokyo: Kokusho kankō kai), pp. 7–56.

<sup>33</sup> Prof. Dull’s Han history seminar was my first as a graduate student, and he offered rigorous advice and straight-shooting complaints about my beginner’s attempts at finding meaningful themes and methods. Although his 1972 paper took a useful biographical (and even prosopographical) approach to intellectual history, he unfortunately did not always support that method, in part because (based on private remarks in the 1980s and early 90s) he felt that to glean anecdotes on Han-era figures and then to track their intellectual connections and commitments to skills and arts in order to deduce a social history of learning amounted to unreliable history – unlike social theory and econometrics. I disagreed with him, and was further inspired to continue piecing evidence together. At least Dull was fascinated by intellectual culture, unlike sinologists who express discomfort with it; see R. de Crespigny, review of Howard L. Goodman, *Ts’ao Pi Transcendent: The Political Culture of Dynasty-Founding in China at the End of the Han* (Seattle and Surrey, England: Scripta Serica and Curzon, 1998), in *American Historical Review* (Feb. 2000), pp. 189–90, who implies that such cultural studies are of little value if their subjects (in this case the Ts’ao family) were brutal oppressors and came from low-born backgrounds. So much for all the illuminating studies of low-born leaders of our twentieth-century tyrannies.

We begin with its early history as an actual building and the work that was considered by the court to be appropriate to it.<sup>34</sup> There is little known in the way of a Tung-kuan before Eastern Han, when we encounter such a building located in the Southern Palace area, itself a large rectangle roughly one mile by two-thirds mile. The Southern Palace was where the Eastern Han founder Kuang-wu 光武帝 (r. 25-57) decided to make his residence, with main access obtained via the P'ing-ch'eng 平城 Gate, allowing imperial carriages into and out of the Imperial City (the site of offices, assembly courts, and ritual buildings). He also instituted a large building campaign, and this palace area grew in size until about 38 AD.<sup>35</sup> It is not surprising that empresses and eunuch middlemen, because they were physically lodged in the Southern Palace, were frequently working at the Tung-kuan.

The Tung-kuan was probably built during Ming-ti's reign, based on some earlier site that went back to early-Western Han, but in Eastern Han the Tung-kuan would gain specific purpose as a repository of written materials (texts, graphs, objects) and the locus of astronomical research and historiographical collation. In all likelihood, it was a commanding, three-tiered structure with seven passageways and beautiful

<sup>34</sup> We should not rely on reference tools without questioning them fully. For example, under "Tung-kuan," we find that Charles Hucker smooths out time and institutions, implying (perhaps inadvertently one sentence too soon) that it had a supervisor appointed as "chancellor 祭酒," which may be true for later so-called Tung-kuans, but not Han times. Hucker does not give us the salient point that it was a building for archives and research, letting it stand instead as an abstract bureaucratic notion; see Hucker, *A Dictionary of Official Titles in Imperial China* (Stanford: Stanford U.P., 1985), no. 7439, p. 552. The first four sentences in the entry for Tung-kuan in *Han-yü ta tz'u-tien* 漢語大辭典 are far more satisfactory. Hans Bielenstein's otherwise invaluable *Bureaucracy* shows a certain limitation of the very word "bureaucracy," since there is virtually nothing on the functionally *ad hoc* "Tung-kuan."

<sup>35</sup> See Zhongshu Wang, *Han Civilization*, trans. K. C. Chang et al. (New Haven: Yale U.P., 1982), pp. 32-34. The *loc. class.* for the So. Palace as site of the Tung-kuan is *HHS* 5 ("Anti-chi"), p. 215, comm., cit. "Lo-yang kung-tien ming" 洛陽宮殿名. (Other evidences from the commentarial literature surrounding *Shih-chi* and *HHS* are given in Chu Kuei-ch'ang 朱桂昌, "Hou Han Lo-yang Tung-kuan k'ao" 後漢洛陽東觀考, *Lo-yang ta-hsüeh hsüeh-pao* 洛陽大學學報 11.1 [1996], p. 50.) *Shih-chi* 史記 (Peking: Chung-hua, 1959) 8, p. 373, mentions a walled Eastern Lookout in reference to Liu Pang's campaign against Hsiang Yü; also, *Tzu-chih t'ung-chien* 資治通鑑 (Peking: Ku-chi, 1975) 10, p. 340. "Tung-kuan" could be an adverb-verb phrase, as in Ts'ao Chih's 曹植 (192-232) poem "Yu hsien" 游仙; see Lu Ch'in-li 遼欽立, *Hsien Ch'in Han Wei Chin Nan-Pei ch'ao shih* 先秦漢魏晉南北朝詩, sect. "Wei," ch. 7, the phrase in question being "... 東觀扶桑曜. 西臨弱水流. 北極登玄. 南翔陟丹邱."

An imperial directive given to noted ritualist Ts'ao Pao 曹褒 (son of ritualist Ts'ao Ch'ung 充) in 87 AD stated: "Now today, because the rites and [their various] sub-items are corrected [by Ts'ao and Pan Ku], they can be circulated. At the Southern Palace Tung-kuan, [scholars] will do their utmost to compile and write [based on them]" 於南宮東觀盡心集作 (*HHS* 35, p. 1203) (I am somewhat unsure of the implication of 集作 in this context). The Chung-hua eds. place a conjunction comma between So. Palace and Tung-kuan, which implies: "In both the So. Palace and the Tung-kuan ..." But it seems odd to cast "So. Palace," a large, general place of imperial residence, in the category of a research office, as was the Tung-kuan specifically, thus I reject the punctuation.

plantings, as remarked in late-second-century prose.<sup>36</sup> The word “*kuan*” in its name may be translated in four ways: first, any storied or well-elevated structure, thus “belvedere” or “outlook” with a strong sense of a use in military tactics; also “lodge” (which links to the later sense of a monastery housing monks); an “academy,” or gathering place of scholars; and finally “observatory” – a place for recording celestial or meteorological events. In Eastern Han contexts *Tung-kuan* implied a variety of senses at different moments, thus I simply use the Chinese transcription.

Below, I analyze the *Tung-kuan*’s history as occurring in three periods, as does the modern scholar Liu Yüeh-chin 劉躍進, but with different emphases.<sup>37</sup> The chronology suggests that, growing out of the need for historiographical compilation, as reconstructed by Bielenstein and Beck, a *Tung-kuan* skills-polymathy started to take shape in the 110s or so. In the next period, around 150–60, the place was beginning to be thought of as a retreat for like-minded scholars with unusual polymathic traits and strife-ridden political lives. Polymathy blossomed in the 160s and 170s, with the *Tung-kuan* work of Ts’ai Yung 蔡邕 (133–192) and others, who exhibited humanist agendas in measure, observation, and experiment. We note in several places the strong appeal that the *Tung-kuan* exerted on esteemed scholar-officials, eliciting appeals to be assigned there. Also, we see the fascinating role played by female polymaths. It is important to remember that the *Tung-kuan* before Wei-Chin times was not a regularized office site or official title. To dispel several problems associated with its history as a bureaucratic entity, my essay pays specific attention to the mechanisms that made it work and that eventually created the entity. There in fact was a general sort of official level from which, and around which, assignments in and out were made during Eastern Han – in most cases the offices of palace gentleman (*lang-chung* 郎中), and gentleman-consultant (*i-lang* 議郎). This highlights the imaginative and ad hoc way in which Chinese government worked, since these functionaries were merely units hier-

<sup>36</sup> Chu, “Hou Han Lo-yang,” pp. 50–51. See n. 29, above, and Drège, *Les bibliothèques en Chine*, pp. 25–27, on the multiplicity of sites in both Ch’ang-an and Lo-yang, since W. Han Wu-ti’s time, that were associated with archives and storage of special (and secret) texts.

<sup>37</sup> See “*Tung-kuan chu-tso te hsieh-shu huo-tung chi ch’i wen-hsüeh ying-hsiang yen-chiu*” 東觀著作的學術活動及其文學影响研究, *Wen-hsüeh i-ch’an* 文學遺產 2004.1, pp. 48–51, who does not identify developmental *Tung-kuan* themes so much as simply discuss all *Tung-kuan* historiographers in order to make an argument about the impact of E. Han commissioned history writing on the development of a new style of ornate literary works. (Note: I cite the article whose author is given as “Yüeh Chin”; it has come to my attention that it may be a pseudonym for the scholar Liu Yüeh-chin, so I introduce the author here as “Liu” but cite it subsequently as “Yüeh-chin.”)

archically under the Superintendent of the Imperial Household 光祿勳. The latter, one of the Nine Ministries, was historically responsible for security services inside the palace, for a certain type of remonstrator and censor, and for a staff of nuncios – men sent out to act as representatives of the court in ritual matters. In the history of Tung-kuan, then, what we encounter are scholars from leading families given low-status, nominal bodyguard posts in the Southern Palace (a restricted, domestic area) so that they could pursue genius work. To invoke an ahistorical analogy, it was early China's Institute of Advanced Study, but requiring a security clearance.

*60s to 120 AD: Developing a site for compiling Tung-kuan Han chi*

In the 60s AD, Pan Ku, working in his home locale to complete his father's history of the first, that is, the Western, Han dynasty, came under accusation for engaging in unauthorized researches, and the Eastern Han emperor Ming had him arrested, suspecting him of usurping this imperial aegis.<sup>38</sup> After regaining confidence in Pan Ku, the emperor assigned him to the Magnolia Terrace 蘭臺 with the task of writing an annalistic account of his father, the dynastic founder Kuang-wu. When the work was completed in 72, it garnered a poem of praise by a royal relative and in turn a commentary to the poem by Chia K'uei 賈逵 (31–102 AD). Pan continued his work, with a compilation of the military merits of associates and enemies of the Han founder, and also compilations of Han rites and ceremonials.<sup>39</sup>

The Magnolia Terrace was one of several older repositories of records and in the beginning of Eastern Han housed the court's historiographical activities. It was also located inside the Southern Palace and functioned bureaucratically as the grandee secretary's 御史大夫 office for documents and communications with the throne.<sup>40</sup> There are no remarks in the early sources that situate Pan or others in a place called

<sup>38</sup> For Pan's life, see David R. Knechtges, trans., *Wen xuan: Or Selections of Refined Literature*, Princeton Library of Asian Translations (Princeton: Princeton U.P., 1982; hereafter, *WX*) 1, pp. 479–81. Yüeh-chin, "Tung-kuan chu-tso," pp. 48–49, also calls the Pans the most important Tung-kuan figures in its early period.

<sup>39</sup> Late in the 80s Pan was editing an earlier work on rites; see n. 35, above. Later sources claim that around this time Pan Ku was taking bribes from the notables' descendants for including the biographies. This has not received much attention in modern research, but see Beck, *Treatises*, p. 22, who gives the references. If true, it fits into a myth-topos encountered elsewhere; see Howard L. Goodman, "Retuning the Ts'aos: Musicology as Authority and Antiquarians as Trouble in Early China" (unpub. paper, 2005), regarding similar charges against the historiographer Ch'en Shou, sometime around the 260s.

<sup>40</sup> *Bureaucracy*, p. 9; Chu, "Hou Han Lo-yang," p. 51. For a more detailed treatment of the Lan-t'ai in W. Han and its relationship to the grandee secretary, see Yüeh-chin, "Tung-kuan chu-tso," p. 45. While others (Bielenstein, *Bureaucracy*, and Drège, *Les bibliothèques en Chine*) translate "lan" as "Orchid," I follow the suggestion of an anonymous reviewer.

“Tung-kuan,”<sup>41</sup> but it is clear that a certain Tung-kuan was taking over from the Magnolia Terrace. We learn this from Liu Chih-chi’s 劉知幾 (661–721) *Shih-t’ung* 史通:

In general, at that time [the Magnolia Pavilion] was the place for writers [of history]. But ever since the reigns of Chang and Ho (i.e., after about 106), writings and graphics were copious in the Tung-kuan. The many compilers of Han records (that is, material for *Tung-kuan Han chi*) followed one another to be located inside it, and all acted as drafters. Ultimately, there came to be only that appellation.<sup>42</sup>

There is no question that Liu was aware of Niu Hung’s sketch of the Tung-kuan’s relevance. But Liu emphasizes three things: the place named Tung-kuan took over the functions of the Magnolia Terrace in an ad hoc way; the phrase “Tung-kuan” became part of the title of the Eastern Han compilation and writing project; and its editors were thought of as drafters 著作, a generic term – not an official title.<sup>43</sup>

In the mid-80s, Chang-ti ordered scholars (not, in this case, associated with history writing) to work in the Tung-kuan. The assignments had something to do with the emperor’s unease from the mid-80s into the mid-90s about the poor state of “rites and music 禮樂.”<sup>44</sup> Soon, another of the court’s ritual technics – astronomy – would suffer a hiatus when Pan Ku died in prison in 92. (He had come under suspicion for having served under a Hsiung-nu-fighting general later accused of treason and executed.) We cannot say for sure that Pan was actually practicing mathematical astronomy, but he was reviewing, as textual critic, the work of earlier and current practitioners, even if his wording in various texts may imply relatively outdated views on physical cosmography, as Christopher Cullen has argued. In short, he was highly conversant in computed calendrics and cosmography, astrological arts of computed celestial motion, and music harmonics. Sometime after his death, his sister Pan Chao 班昭 (d. ca. 116 AD; known as Ts’ao Ta-ku 曹

<sup>41</sup> The much later *Tung-tien* 通典, sect. “Chih-kuan 8,” does state that Pan et al. were Tung-kuan drafters; see Yüeh-chin, “Tung-kuan chu-tso,” p. 48.

<sup>42</sup> Liu, *Shih t’ung*, following P’u C’hi-lung’s 浦起龍 reading of the phrase; see *Shih t’ung t’ung-shih* 史通通釋 (Hong Kong: T’ai-p’ing shu-chü, 1964) 11 (sect. “Shih-kuan chien-chih”), p. 6; also see Beck, *Treatises*, p. 23 (another of Ming-ti’s appointments to the Magnolia Terrace allowed a scholar to finish a treatise on the non-Chinese Ailao people).

<sup>43</sup> On this point, see Chu, “Hou Han Lo-yang,” p. 52.

<sup>44</sup> See Ts’ao Pao’s being assigned to the Tung-kuan (*HHS* 35, p. 1200, comm.), and ordered in 87 AD to work on rites and music (*HHS* 35, p. 1203); and Chang Fen’s 張奮 memorial dated 97 AD, which takes up the same theme, and mentions Ts’ao’s previous role (*HHS* 35, p. 1199).

大家 through marriage) was ordered by the emperor Ho 和帝 (r. 89–106) to the Tung-kuan to complete Ku's treatise on court astronomy.<sup>45</sup>

On reflection, this imperial order seems appropriate: a highly trained woman is sent to restricted archives in the royal-apartments area to revive her family's specialty. But the wider context also may mark the beginnings of a struggle that would escalate in the following decades: female/eunuch influence versus the political aspirations of polymathic officials caught in factional turbulence. The Tung-kuan was becoming a microcosm of that wider problem. First, physically it was more accessible to palace women and eunuchs than to male scholar-officials. Most likely, imperial kin and women, as well as their proxies the eunuchs, could go to the Tung-kuan with relative ease, yet male scholars would have had to travel perhaps two or more miles either from their offices inside the Imperial City, or from surrounding residential wards farther away. They would pass through the P'ing-ch'eng Gate, perhaps occasionally lodging at the Tung-kuan, depending on their assignment.

At roughly this same time (some of the implicit dates conflict, but perhaps the end of Ho-ti's reign and down into that of An-ti 安帝, r. 106–25), the influential Chia K'uei, an associate of Pan Ku, recommended Li Yu 李尤 (d. ca. 126) to the throne, and in 96 AD Li was ordered into the Tung-kuan to write *fu* rhapsodies. This order takes on special significance, since the seventh-century *I-wen lei-chü* 藝文類聚 preserves a prose rhapsody by Li titled "Tung-kuan fu," 東觀賦, which seems to be the only extant contemporary description of the physical site.<sup>46</sup> Li carried appointment as "Prefect Historian of the Magnolia Terrace," thus continuing the administrative link between ad hoc Tung-kuan writing offices (especially historiographical) and the older Terrace. Li seems to have been one of several in a loose grouping (mentioned variously and pegged to different moments) that included two royal kinsmen whose father had been associated with both Pan Ku and Chia K'uei in compiling materials for Eastern Han history. Despite chronological haziness, what is clear is that Ho-ti and his empress Teng 鄧 (d. 121), as well as An-ti, were all important patrons of Tung-kuan scholars and projects. The empress was famous for her interest in *Lao-tzu* and in "old

<sup>45</sup> HHS 84, p. 2784. On Pan's role in transmitting earlier works on astronomy, see Cullen, *Astronomy and Mathematics*, pp. 56–59. There is some evidence that Pan was responsible for compiling a catalogue of field-allotment 分野 astrology; Beck *Treatises*, p. 123, who also cites the objections to this claim.

<sup>46</sup> On Li's appointment, see HHS 80A, p. 2616 (Li's landsman Li Sheng was also sent there to write prose). On Li's several writings on the Tung-kuan, see Chu, "Hou Han Lo-yang," pp. 51–52.

and new” texts; she pursued that agenda by having her eunuchs take instruction at the Tung-kuan. Finally, we read several mentions of Ho-ti’s visits, including spring of 102, when he looked over the “forest of books” and read scroll-books, eventually appointing further masters of arts to fill needed positions.<sup>47</sup>

Since about 96 AD, when she was first made a consort, Teng had become a keen student of astronomy and mathematics, using Pan Chao as her teacher.<sup>48</sup> In 110 empress Teng (now titled empress-dowager, under An-ti’s reign) appointed Liu Chen 劉珍 (d. ca. 126), another in the grouping just mentioned, to head up a team of over fifty, including many erudites 博士 and gentlemen-consultants 義郎 to continue collating books in the Tung-kuan. She also ordered eunuch-servants to aid in dispersing those readings and arts back to the palace women. Also in 110, An-ti ordered Liu Chen, the new gentleman-consultant Ma Jung 馬融 (79–166), and several Erudites in the Five Classics 五經博士 to collate the “Tung-kuan Five Classics” (implying a new edition of Confucian works based on texts housed in the Tung-kuan), and works relating to “all the various [ancient] masters 諸子” and “the skills and techniques (undoubtedly arts like divination, computation, medicine, and not painting or sculpture) of the hundred schools 百家藝術”; and in 117 he set up scholars there once again.<sup>49</sup>

Several times in 110–11 AD appeals were made by Liu Chen and his associates to have Chang Heng 張衡 (78–139), without question the leading astronomer-mathematician, natural philosopher, and scientific mechanic of his day, consult with them in the Tung-kuan; but they soon both died, and Chang did not gain appointment. He repeatedly sent to the throne a memorial (or, perhaps, similar memorials) about the fine points of his scholarly project to correct previous histories. Li

<sup>47</sup> *HHS* 4, p. 188; 49A, p. 2546. Dull, “Confucian Origins,” p. 35, stated that the Tung-kuan’s location in the So. Palace area linked it with the emperor, whereas it is clear that such links went heavily in the direction of powerful palace women, their female and eunuch associates.

<sup>48</sup> *HHS* 10A, p. 424; also see 49A, pp. 2546–47 (a section summarizing the history of court scholarship), which suggests that as a reaction to laxness she tightened up procedures for selecting and testing scholars after she had gained control of government operations. For dating this involvement with Tung-kuan to about 120, see *HHS* 14, p. 558; 80A, p. 2617. See the fuller account of Teng’s actions in Pan Chao’s biog. *HHS* 84, pp. 2784–85; also Michael Nylan, “The Chin Wen/Ku Wen Controversy in Han Times,” *TP* 80 (1994), pp. 120–21; Dull, “Confucian Origins,” pp. 30–37; and Nancy Lee Swann, “Biography of Empress Teng: A Translation from the Annals of the Later Han Dynasty,” *JAS* 51 (1931), esp. p. 150.

<sup>49</sup> On the fifty, see *HHS* 10A, p. 424; on the work of Liu and Ma, see *HHS* 5, p. 215; 80A, p. 2617 (re. 110); 60B (Ma’s biog.), p. 1954. Under an order of 117, Liu Chen and an otherwise unknown scholar collated royal family regulations (rites and ceremonies), or, alternatively, “collated [the Five Classics] according to the interpretive rules of each [text/master] lineage” 讎校漢家法; then he ordered Ts’ai Lun (who had just been rewarded by the empress) to oversee what the others had done; *HHS* 78, p. 2513.

Hsien's 李賢 (651-684) *Hou Han-shu* commentary quotes a passage, part of which reads:<sup>50</sup>

[Your] minister (that is, Chang) looks toward the historians' posts and dares to want to maintain [his work] in a state position. Secretly greedy for appointments given earlier (probably a reference to Liu's and others' Tung-kuan service), I forget what a low-class (scholar I am). My intent is to gain [the opportunity] to concentrate [studies] at the Tung-kuan, and to exhaust my energies on the historiographic record and complete my ideas of fixing previous mistakes... 臣仰幹史職，敢微官守，竊貪成訓，自忘頑愚，願得專於東觀，畢力於紀記，竭思於補闕。

But, "ultimately [the memorials] were not recognized; and later on, in most of his subsequent writings, he did not give details based on the authoritative record. People of that time regretted this [blocked access]" 書數上，竟不聽。及後之著述，多不詳典，時人追恨之。<sup>51</sup>

Let me summarize this first period of the Tung-kuan. In it, emperors, with input from their female partners, established a commanding and smartly appointed place – the Tung-kuan – that eventually was brimming with texts and other curios and became preferred to the Magnolia Terrace for regular historiographical work, namely the compiling of *Tung-kuan Han chi*. Several scholars assigned there were at the level of palace gentleman (*lang-chung*), gentleman-consultant (*i-lang*), or erudite (*po-shih*).<sup>52</sup> The Tung-kuan palace gentlemen may likely have received that appointment so as to have the authority to be associated with the inner palace, an authority that women and eunuchs did not need. Palace gentleman was at the very low level of 300 *shih*, and by this time in the Eastern Han it seems unlikely that the gentlemen assigned for editing and collating would have been carrying out the sort of guard-duty function as prescribed for palace gentlemen in Han sources. Otherwise, the title could also signify a scholar's examination-tested erudition, because *lang-chung* and *po-shih* were linked together in Eastern Han in a number of appointments given to those who had just passed Academy tests. The traditional duties of the only slightly better remunerated gentleman-consultant were to help the Superintendent of the Imperial Household provide advice to the throne when prompted to do so, thus once again implying an official vetted for general knowledge and excellent expression.<sup>53</sup>

<sup>50</sup> *HHS* 59, p. 1940, note no. 1; on Chang's repeated appeals to be allowed to take up the others' Tung-kuan work, see Bielenstein, *Restoration* 1, p. 11. Chang's biog. sketch is in Knechtges, *WX* 1, pp. 481-83.

<sup>51</sup> *HHS* 59, p. 1940.

<sup>52</sup> *HHS* 80A, p. 2614; 35, p. 1203.

<sup>53</sup> See *Bureaucracy*, pp. 24, 140 (re. *po-shih*), p. 25 (re. *i-lang*). Chu, "Hou Han Lo-yang,"

High interest in the Tung-kuan and in gaining access to it came about because it was stocked with never-seen books, many taoistic and technical in nature, as Niu and Liu would note retrospectively (see above).<sup>54</sup> It is possible to imagine that from various parts of China people brought as tribute, *inter alia*, the kinds of bamboo-slip roll-books and plaques that archeology in our own time has been discovering in pre-Han and early-Han tombs. Often these were guides to postmortem journeys, or everyday demonifugics, medicine, hemerology, and other systematized arts, and thus we might deduce that some portion of items entering the Tung-kuan were talismans, maps, templates, or guides to self-cultivation – things that are thought of, broadly speaking, as Taoist (or Huang-Lao) arts (below, I establish specific points by which we can use the words Taoist and taoistic in our discussion). Naturally, other texts were expositions of cosmology, ethics, metaphysics, and the like, and fall into the category we usually call Taoist philosophy. Of course, many would have been entirely non-Taoist. If this general picture is near to correct, then the archive was of great interest to those scholars who sought new authorities in commenting on and reforming texts and rites, including imperial mourning and ancestor worship. The concern to finish Pan Ku's treatise on astronomy and the placing of Ma Jung, the most completely polymathic figure (calligraphy, commentaries, computation, astrology, and music) since Chang Heng, into a project concerning "skills and techniques" all indicate that a polymathy of technical arts was becoming useful to scholars. In fact, the standard histories do not record that in about 118–21 the well-known student of Chia K'uei and specialist in systematic lexicology Hsü Shen 許慎 (ca. 55–ca. 149) was appointed to the Tung-kuan to collate books and ordered to instruct various of empress Teng's eunuchs.<sup>55</sup> I believe that with the wave of unknown texts, the grand new building, and the Pan-family model, a new polymathic core was emerging out of a background of belles-lettres (especially *fu*, private mortuary prose and biography, and disquisitions), classicist commentaries on the

p. 52, mentions appointments of several scholars who were given posts other than *lang-chung* and *i-lang*. Chu states that such posts were collateral to that of a Tung-kuan appointment as *chu-tso*, but does not venture a guess as to the bureaucratic rationale.

<sup>54</sup> *HHS*80A, p. 2614, describes an official appointed to the Tung-kuan who surveyed "books never [before] seen"; mentioned also in Yüeh-chin, "Tung-kuan chu-tso," p. 50.

<sup>55</sup> On Hsü's dates, see Roy Andrew Miller, "The Dissertation as Handbook: A New Guide to the *Shuo-wen Chieh-tzu*" (review article) *JAS* 119.3 (1999), p. 458. On Hsü in the Tung-kuan, idem, "Problems in the Study of *Shuo-wen chieh-tzu*," Ph.D. diss. (New York: Columbia U., 1953), p. 293 (the statement was made by Hsü's son and recorded in Tuan Yü-ts'ai's Ch'ing-era edn. of *Shuo-wen*). On the eunuch-staff's role, see ibid. and Dull, "Confucian Origins," p. 35, who suggests the possibility that Hsü imparted taoistic learning to the eunuchs.

Confucian scriptures, calligraphy (including stele carving), and music. This polydidact background would thrive through the education programs of several great families and later, in the Eastern Han, produce another polymathic cluster around the performative and pictorial arts (belles-lettres, especially poetry, calligraphy, painting and sculpture, and music), as argued by Chang K'o-li.<sup>56</sup> But here, in the early 100s, a Tung-kuan polymathy, short-lived though it was, focused on mathematics, astronomy, astrology, and would bring in music theory, as we see below. The impetus was to complete the written treatises that covered the history and practice of these court ritual arts.

It should be noted, however, that just to be an awesome polymath was no guarantee of acceptance or employment by the throne or the clique in power. Access to the Tung-kuan was somewhat complicated and offset by factional politics. We saw Chang Heng's disappointment, something that colored much of his career, in which his inventions and new polymathy were impressive but never enough to gain high position; nor was his corrective scholarship on the histories allowed a berth in the Tung-kuan. In Chang's time, mastery of astronomy and mathematics was still held by many to be mere artisanal skills, and the new polymathy was not necessarily the mark of a scholar-gentleman. Even the "Judgment" and "Encomium" to his biography felt obliged to address this prevailing negative cloud about the technical arts.<sup>57</sup> Also in 110, the other major polymath of this time, Ma Jung, was appointed to the Tung-kuan (the second of three times). Yet, his *Hou Han-shu* biography says that this appointment was a ploy of the Teng clan to keep him out of sight, for the trouble he was causing through his policy criticisms. In 115 they cashiered him from the state offices entirely. (Ma is discussed in more detail, below.)<sup>58</sup>

*150s-160s: "Repository of Mr. Lao" and symbol for beset scholars*

During the Eastern Han emperor Huan's 桓帝 reign (146-168), Taoist-style rites were given a conspicuous position at court and in various locales throughout China, frequently fostered by imperial rela-

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It seems that in roughly the period 116-20 empress Teng was emphasizing Taoist texts and Confucian classics as part of the task of eunuchs' work in both the Tung-kuan and in their relaying such instruction back to palace women (see Dull, n. 42 on p. 57).

<sup>56</sup> See his introduction to the main argument, *Tung Chin wen-i*, p. 6.

<sup>57</sup> *HHS* 59, pp. 1940-41; Knechtges, "Court Culture," brings out clearly the social prejudices surrounding a polymathic set like calligraphy and painting in the 170s AD. Thus, I would say that early China's uneasiness about technics and arts was not limited to computing and modeling. Chang in fact suffered political attacks from eunuch factions during his career, and we may speculate that this partially caused his Tung-kuan wish to be turned down.

<sup>58</sup> "He opposed the Teng clan and was blocked off in the Tung-kuan. After ten years [there]

tives as well as by the throne. At the same time, continuing already two centuries of scholarly trends, certain well-known Taoist philosophical writings were taught privately, explained and praised in various genres of prose, and used as authorities in public (including court) statements. The Tung-kuan, as time went on, gained a reputation as a nexus for projects to edit less-known taoistic texts. I wish to make observations at this point, partly building off of Jack Dull's earlier research, about Laoist, or Taoist, or taoistic tendencies associated with the Tung-kuan and its inhabitants. It is important to clarify this troublesome category, and I do so here without the need to cite the hundreds of important new researches of the past thirty or forty years.<sup>59</sup> As a convenience in discussion, I offer a summary that is relevant to the period of Han through Western Chin, roughly 150 BC up to 300, after which "Taoism" was much shaped by Buddhism and gained new avenues of expression through literati arts (like pharmacopoeia, calligraphy, and alchemy), and new Taoist communities began to be important in local and metropolitan places. I see five aspects of pre-300 AD Taoism:

1. lingering attitudes about the deepest meanings and functions of life and death, as reflected in pre-Han mortuary arts and religious practices (this essentially being China's indigenous, ancient religious complex involving ancestor-worship, spirits and demons, mortuary determinations and preparations, postmortem journeys, and devices to aid in the process);
2. since about 150 BC, the study, copying, and teaching of texts of Lao-tzu, and/or systematic and technical knowledge and foreknowledge and guides to self and state: e.g., the *Tao* and *Te* classics, *Chuang-tzu* (and roughly contemporary figures like Lieh-tzu, Shen Tao, etc.), *Lü-shih ch'un-ch'iu*, divinatory and hemerological guides, and numerous cross-over writings like *I-ching*, *Huai-nan-tzu*, and *Hsi-tz'u chuan*, and material related to spirits and apotheosized sages;
3. Tao- and/or Lao-worshipping communities, e.g., the somewhat isolated Celestial Masters, but also less organized clusters of imperial representatives, urban literati and their circles, and/or their associates and families who observed rites at shrines dedicated to the lord Lao (or similar entities), or held readings or chantings to Lao or other spirits (such as "T'ai-i 太一") that were associated with categories 1 and 2, above. Texts and arts emerged from such communities and clusters.

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without any [factional] comity, he used the occasion of his nephew's death to impeach himself and return home (to be with the mourners)"; *HHS* 60A, p., 1970; see also pp. 1954, 1972, re. Ma's other appointments to Tung-kuan. On this, see Yüeh-chin, "Tung-kuan chu-tso," p. 49.

<sup>59</sup> A breakthrough article that disabused us of our lax or misinformed uses of "Taoist" was contributed by Nathan Sivin: "On the Word 'Taoism' as a Source of Perplexity: With Special Reference to the Relations of Science and Religion in Traditional China," *History of Religions* 17 (1978), pp. 303-30.

Then we have two categories given, quite problematically, the appellation “neo-Taoism”; their height was around 180–300 AD:

4. public anti-ritualistic behavior (often pointing to the model of Chuang-tzu), including noncompliant funerary, ethical, and official actions, withdrawals and solipsistic stances, and self-conscious uses of linguistic relativism and semantic double-entendre in philosophical and social/ad hominem criticism;
5. expanded and evolved genres of commentary and essay concerning the written texts of category 2, above, also the use of linguistic relativism and semantic obscurantism as applied to clearly non-Tao scriptures, like *Lun-yü*, in the process of establishing forms and methods of sagehood, and in developing what some have called a revolutionary epistemological turn of mind.

It is my opinion that numbers 4 and 5 hardly seem worthy of being called Taoist, although perhaps in some senses “taoistic.” (Also, number 1 to some might seem a protean precursor of practically anything.) Numbers 4 and 5 also have been associated with the rubric “neo-Taoism,” and writers in that early milieu did produce commentaries on the Tao classics. Yet, can we call Wang Pi, Ho Yen, Hsiang Hsiu and others Taoists (or half- or hidden-Taoists) because of their unique commentarial work or because in some contexts they were a new type of thinker? I do not think so. When I speak, in the following, about the Taoist aspects of Tung-kuan martyrdoms and withdrawals, I refer to stances taken by scholars that resonated with number 2, above, their category 1-type attitudes toward the primordial “dark/obscure,” and the “Tao,” and their experiments with category 3 partly as an attempt to identify themselves and their ilk as pure enough to be associated with “dark” or “Tao” writings and to take certain self-consciously moral political stances. It was not yet time for the new commentarial styles of category 5 writing. It is with these summaries and caveats that I use the word “Taoist.”

Jack Dull argued that three topoi of Taoist thinking (interest in *I-ching*, *Lao-tzu*, and *Chuang-tzu*, plus escape from political activities, and hints of religious practice) that developed during Eastern Han found a strong base in the Tung-kuan. Aat Vervoorn, with mention of Dull’s paper and many of the same historical personages, argues that the important element in Tung-kuan Taoism was scholars’ eremitic tendencies.<sup>60</sup> His chief point is fascinating: certain famous scholars desired to be in

<sup>60</sup> Dull, “Confucian Origins,” esp. p. 15, for the Taoist topoi; Aat Vervoorn, *Men of the Cliffs and Caves: The Development of the Chinese Eremetic Tradition to the End of the Han Dynasty* (Hong Kong: The Chinese University Press, 1990), pp. 216–21.

the Tung-kuan, not just because, as joked about, it was a “Repository of Mr. Lao and the P’eng-lai Mountain of Taoists,”<sup>61</sup> but because they sought a way to be supported by the court to pursue their studies out of the way of surrounding factional strife.

Men like Yang Hsiung 揚雄 (53 BC – 18 AD) had already brought into the scholarly culture an appreciation for Taoist ideas, having studied with a well-known teacher of Taoist texts. As another example, Hsü Shen was a reader and commentator on *Huai-nan tzu*. In the 150s, Teng Pao 鄧豹 was appointed to the Tung-kuan and worked there with Yen Tu 延篤 (d. 167) and others on tables, treatises, and biographies for the ongoing *Tung-kuan Han chi*. Teng’s adoptive mother was Lady Keng 耿氏, wife of Teng Ch’ang 鄧閻 of the powerful court-leading Tengs. She had provided Teng Pao with his textual education, and the latter gained fame as a “thoroughly comprehensive 通博” scholar. We may deduce that Teng’s education was heavily Taoist, since generations of Kengs were known as Taoist scholars.<sup>62</sup> Yen Tu was an expert in *Tso-chuan*, and was made gentleman-consultant, grouped with another gentleman-consultant, Chu Mu 朱穆 (100-163), and with grand palace-grandee 太中大夫 Pien Shao 邊韶 (ca 100-ca. 170). Yen was a student of Ma Jung, and is often quoted making references to the texts of *Lao-tzu* and *Chuang-tzu*. Later in his life, he expressed a desire to return to the famous repository.<sup>63</sup>

A turn of events helps establish what I am arguing, adapting Dull’s main idea, as the emergence of a dissident, martyrological mood among the post-150 Tung-kuan scholars. This concerned Chu Mu’s and Ma Jung’s political struggles. Chu Mu was imprisoned after a eunuch-driven embroilment, and his subsequent retirement and death signaled to scholardom that stands had to be taken against imperial women and eunuchs, even if it meant deprivation. For Chu and Ma, the Tung-kuan was a career brand, in a time when distaff politics, literati dissatisfac-

<sup>61</sup> *HHS* 23, p. 822; on the Taoist caricature, see *T’ai-p’ing yü-lan* 太平御覽 (Peking: Chung-hua, 1963; hereafter, *TPYL*) 233 (sect. “Officialdom 31 職官部三十一”; subsection “Pi-shu chien”), p. 1a, quoting Hua Chiao’s 華嶠 “後漢書”: “學者稱東觀爲老氏藏, 道家蓬萊山.” The same part of *TPYL* cites *Tung-kuan Han-chi* on Huan-ti’s interest in editing: “桓帝延熹二年初, 置秘書監, 掌典圖書·古今文字, 考合異同.” See also *Ch’u-hsueh chi* 初學記 12, sect. “Chih-kuan, hsia”; subsect. 秘書監, 第九.

<sup>62</sup> See *HHS* 16, p. 618, also Dull, “Confucian Origins,” p. 12. Beck, *Treatises*, p. 25, table 2, has mishandled the character *ssu* (“to inherit, an heir”), calling Keng’s adopted son Teng Ssu 鄧嗣; in fact he was named 鄧豹.

<sup>63</sup> *HHS* 64, pp. 2103, 2106; also 80A, p. 2624. Yen, Chu, and Pien were assigned to the Tung-kuan as a group, and “together worked as drafters 共著作” there, and subsequently all appointed palace attendants 侍中 (p. 2103). On Yen’s use of Taoist allusions, see Dull, “Confucian Origins,” p. 36.

tion, and eunuch inner-palace power were a dangerous mixture. A dilemma, then, arose when any notably anti-eunuch, anti-distaff scholar was assigned to the Tung-kuan.

Chu Mu, like most scholar-officials, received knowledge and skills from his family. He was known as a writer imbued with eremitic values and who kept a low-profile at court in order to live in simplicity. Fully aware of a political contradiction, he served the distaff-family dictator Liang Chi 梁冀 (d. 159), and once warned Liang about political problems through *I-ching* omenology. Liang promoted Chu, but because of the political position of the Liang clan, Chu arranged to be demoted, and subsequently gained access to the Tung-kuan in 149, with the title of gentleman-consultant. Ts'ai Yung, later on, would write about Chu:

[Liang] twice conferred on [Chu] the post of erudite, and [Chu] received high ratings, performing [duties] as Attending Secretary. [But because Chu] was a commanding reformer, firm and upright, he was unwilling to go along politically. [Thus], through a lowering of his status he was submerged among the palace gentlemen. A host of high officials sent in memorials, and thereupon he was shifted to gentleman-consultant, and mounted the Tung-kuan. 再拜博士高第作使御史。矯枉董直。罔肯阿順。以黜其位。潛于郎中。群公竝表，乃遷議郎，登于東觀。<sup>64</sup>

The chronology is not perfectly recorded, since it would seem that just about this time, ca. 149, he absconded into the mountains to study with a “hidden” scholar of the classics and write a discussion promoting Taoist studies and values. One of its points was that the rites and ethics turned one away from Lao-tzu’s “*te*,” the pure, unpoliticized and intellectually unsophisticated human core.<sup>65</sup> Chu’s even more famous essay, “On Esteeming ‘Thickness,’” appealed to the positive way Confucian ideals fit into taoistic ones,<sup>66</sup> remarks that may be seen as giving ample ground to scholars desiring knowledge in obscure matters, but

<sup>64</sup> This passage comes from Hui Tung’s quotation of an inscription text by Ts’ai Yung titled “Chu kung-shu ting-ming” 朱公叔鼎銘 (Hui, *Hou Han-shu pu-chu* 後漢書補注 [KHCPTS edn., 1937], ch. 11 (re. *HHS lieh-chuan* 33), p. 458. At some point the full inscription was carried in Ts’ai’s collected prose, 蔡中郎集, but only a sentence of it (not pertinent to the quoted passage) was culled into Yen K’o-chün’s *Ch’üan Hou Han wen* 全後漢文 (see ch. 5, sect. Ling-ti). Dull, “Confucian Origins,” n. 36 (p. 55), interprets the event as Chu’s “voluntary transfer” to a low posting. This is only somewhat the case: it seems he arranged official demotion, then played on the sympathies of supporters, who conspired to get him into the scholars’ haven. It is fine evidence for Vervoorn’s argument about Chu and other “court eremites.” Chu’s appointment to participate in Tung-kuan work on E. Han historiography is given further details by Liu, *Shih-t’ung t’ung-shih, wai-p’ien*, sect. “Ku-chin cheng-shih,” p. 27.

<sup>65</sup> Asselin, “Significant Season,” pp. 160–65. Chu’s mention of *te* specifically referenced the leading concept of *Lao-tzu*, sect. 38.

<sup>66</sup> Dull, “Confucian Origins,” pp. 30–34; Asselin, “Significant Season,” p. 178.

who would still be contributing to a Confucian mission. They might correct a court's rites without enduring contentions over Confucian ethics. Around 162–63, Chu was imprisoned for ostensibly having accused eunuch-family members at a provincial court. But his local students protested, and he was released.<sup>67</sup>

Chu Mu's struggles were in some ways prefigured in the events of Ma Jung's life and his association with the Tung-kuan. As mentioned, Ma was polymathic across a spectrum of skills, and in 110 appointment to the Tung-kuan aimed at not only editing, but also work on ancient arts and guides, and on orthographic transcriptions. Ma Jung fits the Taoist Tung-kuan profile that Dull conceived: a "reformist" opposed to the Teng clan's military policies; a propounder of "laissez-faire" attitudes toward law and punishment; and an evader of embroilments (where his apologias speak of "non-action"). He was well trained in all the classics, but especially *Huai-nan-tzu* and *Chuang-tzu* (his commentaries now nonextant). As already mentioned Ma was tucked away in the Tung-kuan partly for political reasons, as would be somewhat the case with Chu later, in the 140s. Ma eventually returned to office and back to the ambit of Liang Chi, who appointed him to the Tung-kuan late in life, when he was already ill. In September of 159, Liang was toppled from power by the youthful emperor Huan and the eunuchs.<sup>68</sup>

For scholar-officials everywhere in China, these years were ones of increasing strife, as the most respected rose and fell from political influence often merely over the litmus-test concerning the eunuchs. In the early 160s, many of the scholar-elite came forward to defend Li Yun 李雲, who, under Huan-ti's orders, had been tortured and executed for criticizing the emperor's decisions concerning the overthrow of the Liangs and the role of the eunuchs.<sup>69</sup> The scholars' new backbone seemed to work, and Huan-ti soft-pedaled and ameliorated the dissenters with favorable staffing and court decisions. But in 167, the eunuchs struck back; they arrested important officials and concocted a list of hundreds of alleged conspirators, who were then officially banned from office. This was the opening salvo in what early Chinese

<sup>67</sup> Yoshikawa Tadao, "Scholarship in Ching-chou at the End of the Later Han Dynasty," *Acta Asiatica* 60 (1991), p. 2; see Chu's biog. *HHS* 43, pp. 1462–63.

<sup>68</sup> Yüeh-chin, "Tung-kuan chu-tso," p. 49, considers Ma to have been one of the key Tung-kuan scholars in the office's middle period. On Ma's life, see Dull, "Confucian Origins," pp. 36–38. A special study of Ma was made by Mieczyslaw Jerzy Künstler, *Ma Jong: Vie et oeuvre* (Warsaw: 1969), but is extremely hard to obtain. (I have not been able to see a copy for over twenty years.) Otherwise, there is an excellent short biog. in Knechtges, *WX* 3, pp. 381–82, who cites the pertinent Chinese scholarship.

<sup>69</sup> *HHS* 57, pp. 1852–53.

historians termed the “Factional Clashes 黨固” (with its own section of biographies in *Hou Han-shu*), and the political struggle continued to affect the leadership strata down into the 180s. It provided fuel to scholars like Chu, Ma, and Ts’ai (who is discussed, below). They represented officials possessed of a self-conscious integrity and who held posts in the “pure offices” (the branch of officialdom connected with policy consultation, scholarship, and local administration). Many dissenters were experimenting with what we variously call taoistic values and Taoist texts in order to supplant contemporary, weak, modes of learning and thinking that had ruined both the court and the broad world of letters and ideals.

As argued by Dull, the Tung-kuan nexus exhibited Taoist practices, too, which were increasingly entering court and private life. In 165–66, the throne, in a series of events, sent out eunuchs to make obeisances and ceremonies for Lao-tzu, concomitantly promoting related occult teachings.<sup>70</sup> The Tung-kuan scholar Pien Shao is well known to us as the author of the 165 AD “Lao-tzu ming” 老子銘, a harbinger of an emerging Taoist piousness. Yet Mark Asselin cautions not to assume that Chu, Ma, Yen Tu, or even Pien Shao, either in their family sacrifices or rituals, or in any private groups, were actually Taoist religious practitioners. Ts’ai Yung’s “Wang Tzu-ch’iao pei” 王子喬碑, also 165 AD, written to honor the previous appearance of a legendary Taoist divinity, may be nothing more than a literary product on commission, not a personal commitment to worshipful and ritual aspects of an ancient mortuary, and increasingly taoistic, religion of spirits.<sup>71</sup> The scholar-elite stratum was naturally aware of, and perhaps disturbed by, the communitarian, Lao-worshipping groups on the rise both in the Central Plain and in the mountains of northeastern Szechwan, and the first signs of local rebellions and Buddhist-style feasts and ceremonies. Their anxiety would have been amplified by the support some of the new religions were receiving by members of the throne – especially palace women and eunuchs. Any taoistically tinged values of Tung-kuan scholars were located more in political, in some sense scholarly, martyrdom.

Assignments to the Tung-kuan were becoming more bureaucratized. We saw that Yen Tu and Chu Mu were made gentlemen-consultant as a precursor to entering the archive. Earlier, Ma Jung had been

<sup>70</sup> See Dull, “Confucian Origins,” pp. 39–42 (the emperor was encouraged in Huang-Lao sexual techniques); also Asselin “Significant Season,” pp. 153–54.

<sup>71</sup> Asselin, “Significant Season,” pp. 151 (on the sources for the stele texts) and 154. See also Donald Holzman, “The Wang Ziqiao Stele,” *Rocznik orientalistyczny* 47.2 (1991), pp. 76–83.

<sup>72</sup> Around 151–154, Chang Huan 張奐, known as an expert in *chang-chü* exegesis 章句, was

made gentleman-consultant prior to his assignment.<sup>72</sup> Evidence tells us that palace gentleman was a low post, often a nominal authorization for certain privileges. Such supernumerary postings were well known in Han times, although by Eastern Han they were evolving into regular posts. Yen's group (which included Pien Shao), after assignment to the Tung-kuan were all given the collateral title of palace attendant 遷侍中, possibly a bureaucratic ploy that gave access to the restricted palace apartments but still would keep an official subordinate to the non-eunuch heads within the Privy Treasury 少府, one of the Nine Ministries.<sup>73</sup> Finally, we see more examples of "drafting/drafters 著作," which was not yet a title, but a description of what scholar-officials did there – writing in the genres of historiography, or supervising the transcription of materials written in old orthography. Thus, "drafters" still needed an actual, parallel appointment.

The Tung-kuan did not overlap or subsume the Eastern Han Imperial Academy (T'ai-hsüeh 太學, under the Grand Master of Ceremonies, another of the Nine Ministries), first established in Western Han in order to subsidize visits at the capital by young recommendees who had been nominated as "filial and incorrupt."<sup>74</sup> In 178, both the Tung-kuan and the Imperial Academy were referred to in one sentence as the chief places for establishing the culture of the sages through learning, and should not have shallow, non-classicist scholars let in.<sup>75</sup> Nor was the Tung-kuan yet identified functionally with the brand new Imperial Library, a matter to which we return, later on.

*173–192: Ts'ai Yung's strong rites polymathy and martyrdom*

As Mark Asselin has demonstrated, Ts'ai Yung 蔡邕 was deeply influenced by Chu's life and his writings on moral questions.<sup>76</sup> In 159, before the Factional Clashes had begun, Ts'ai was summoned by a eunuch clique at court because of his zither playing; Ts'ai traveled part way to court, but then had a change of heart and turned back. In

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ordered into the Tung-kuan. When he left due to illness, he was made gentleman-consultant, suggesting that since he had not been made a consultant before, he would require it post-facto, to keep his career path rationalized; *HHS* 65, p. 2138.

<sup>73</sup> *Bureaucracy*, pp. 50, 59, 60 (re. authority of *shih-chung* in W. Han times to operate inside royal quarters).

<sup>74</sup> The T'ai-hsüeh became a college focused on Confucian texts in 136 BC, and in E. Han was a locus of reformist views and became staffed with enormous numbers of students; *Bureaucracy*, pp. 19, 23.

<sup>75</sup> *HHS* 77, p. 2499; *Tzu-chih t'ung-chien* 57, p. 1849. The discussion of learning was in order to oppose the emperor's establishing the new Hung-tu men School; see Knechtges, "Court Culture."

<sup>76</sup> Asselin, "Significant Season," p. 178.

173, upon appointment as palace gentleman, he was ordered to collate books in the Tung-kuan, and subsequently was given the supernumerary gentleman-consultant title.<sup>77</sup> He began working on *Tung-kuan Han chi* 東觀漢記, the still-ongoing draft history of the Eastern Han. In 175 he was primary calligrapher in the court's Stone Classics project, which inscribed the entire set of Confucian classics on stone for the purposes of fixing the texts for Academy students. Furthermore, based on circumstantial evidence, Ts'ai was cognizant of artisan portraitists and their work, perhaps using his own skills in design and calligraphy to supervise them. The Tung-kuan even produced a portrait of one of its own scholars whom Ts'ai had lauded and wanted to serve as inspiration to students.<sup>78</sup>

Another facet of his polymathy was *I-ching* divination (but without mention of sortilege). In 178, the emperor Ling became displeased about the high number of meteorological portents and ordered that scholars submit memorials. He consulted with Ts'ai, who took the opportunity to denounce the eunuchs through a skillful use of omenological analyses, mostly based in *I-ching*-style trigram figurations.<sup>79</sup> The eunuchs responded by having him sentenced to death, and after Ts'ai was reprieved, he was banished to the north in 180, from where he pleaded by letter to be allowed to finish his work of treatise compilation for the hoped-for dynastic history. He was prevented for ten years by the eunuchs from returning to Loyang.<sup>80</sup>

Ts'ai Yung possessed solid credentials for gathering data for the dynasty's technical, ritual treatises. His *Hou Han-shu* biography states that as a youth he "studied comprehensively," and was "inclined to

<sup>77</sup> HHS 60B, p. 1990; at treatise "Lü-li C," p. 3083, cit. his own memorial, we learn that the appointment to the Tung-kuan occurred along with a "host of other experts 儒." For reasons I cannot fathom, Lu K'an-ju 陸侃如, *Chung-ku wen-hsüeh hsi-nien* 中古文學係年 (Peking: Jen-min wen-hsüeh ch'u-pan, 1985) 1, p. 257, splits off Ts'ai's appointment as gentleman-consultant and dates it separately to 175. Liu Ju-lin 劉汝霖, *Han Chin hsüeh-shu pien-nien* 漢晉學術編年 (Shanghai, 1935; hereafter, *HCHS*) 5, p. 149, dates them both to 172, with explanation. (The difference between 172 and 173 is a matter of Sino-Western conversion vagaries.)

<sup>78</sup> In 178 the emperor had portraits of Confucius and his disciples made for the new Hung-tu Gate School and also portraits of low-ranked men of skills; this drew criticism; see Knechtges, "Court Culture"; Michael J. Farmer, "Art, Education, and Power: Illustrations in the Stone Chamber of Wen Weng," *TP* 86.1-3 (2000), p. 108, n. 33, seems to assume that Ts'ai painted the Confucian portraits (and errs in citing *HHS*). On the portrait of Kao Piao 高彪, who entered the Tung-kuan as a *lang-chung*, see HHS 80B, pp. 2650, 2652. My linking Ts'ai to the production of Kao's portrait is simply a suggestion. During T'ang T'ai-tsung's reign, there were also occasions when portraits were made to inspire academy scholars; *Chiu Tang-shu* 舊唐書 (Chung-hua edn.) 72, pp. 2582, 2593.

<sup>79</sup> See the trans. in Mark Laurent Asselin, "The Hou Han Shu Biography of Cai Yong (A.D. 132/133-192)," M.A. Thesis (Seattle: University of Washington, 1991), pp. 134-35.

<sup>80</sup> See Beck, *Treatises*, p. 4345.

ward literary composition, computation, astrology, and had a mastery of music pitches (that is, harmonics) 妙操音律。<sup>81</sup> His uncle Ts'ai Chih 質 was a scholar known to have worked for some time on a compendium of court ceremonials and was closely involved with his nephew Yung's education; both studied with the renowned rites expert Hu Kuang 胡廣 (91-172), and all three – the two Ts'ais and Hu – at various times collated compendia of ceremonials.<sup>82</sup> Further, Ts'ai Yung fostered a nexus of scholars at the Tung-kuan who specialized in mathematical astronomy and astrology: Liu Hung 劉洪 (fl. 160-200), who compiled a treatise on celestial and harmonic systematics along with Ts'ai; and two other scholars, Ma Jung's former student Cheng Hsüan 鄭玄 (127-200), who computed ephemerides, and Han Yüeh 韓說 (fl. 170-80), a numerological astrologer and diviner.<sup>83</sup>

Ts'ai Yung was deeply concerned with physical cosmography and mathematical astronomy, as well as mathematical harmonics. He searched for texts in these areas, and once appeared commented inside a larger discussion of cosmography: "I have searched for old texts for years on end without finding any."<sup>84</sup> This frustration may in fact reflect the destruction of Loyang and its archives that occurred in 190, about two years before Ts'ai's death. Post-holocaust, Ts'ai followed the military dictator Tung Cho westward to set up a new court in Ch'ang-an, but his service under Tung became the focus of political hatreds; and after Tung's death he was imprisoned, numerous objections from scholars notwithstanding, and died shortly thereafter.<sup>85</sup> Although Ts'ai

<sup>81</sup> *HHS* 60B, p. 1980; the latter phrase emphasizes the fact that Ts'ai's skill in tuned modes, regulated by the pitch-standards. Cf. Asselin's, "Hou Han Shu Biography of Cai Yong," p. 57, whose choice of English makes these intellectual pursuits into scholarly curios, not key elements in a developing polymathy.

<sup>82</sup> The history of the eventual *HHS* treatise on ceremonials is thoroughly explained in chap. 4 of Beck, *Treatises*, which mentions Hu Kuang.

<sup>83</sup> On Liu, see *HHS* ("Lü-li B"), p. 3043 (comm.); also Joseph Needham and Wang Ling, *Science and Civilisation in China* (Cambridge: Cambridge U.P., hereafter, *SCC*) 3, pp. 247, 395, 421, and Li Yen 李儼, comp., *Chung-kuo ku-tai shu-hsüeh shih-liao* 中國古代數學史料 (Shanghai, 1963), p. 49. On Cheng, see *SCC* 3, p. 25; and *SCC* 4.1, p. 149-63; and Li, *Ku-tai shu-hsüeh*, pp. 50-51. On Han, who performed astrological computations, see *HHS* 82B, p. 2733, and Kenneth DeWoskin, *Doctors, Diviners, and Magicians in Ancient China: Biographies of Fang-shih* (N.Y.C.: Columbia U. Press, 1983), p. 73. On Ts'ai's mathematics, see Li, *Ku-tai shu-hsüeh*, p. 51, and *SCC* 3, pp. 19-20, 382-86. Ts'ai alluded to astronomy in his prose; e.g., calculations of lunar motion show fastness or slowness in direct relation to problems with the court's leaders; Asselin, "Hou Han Shu Biography of Cai Yong," p. 101.

<sup>84</sup> Trans. Cullen, *Astronomy and Mathematics*, p. 38, cit. Li Chao's lengthy commentary to *HHS*, *Treatises*, ch. 10, p. 3217. The context is Ts'ai's discussing the problems of the three theories of physical cosmology: *kai-t'ien*, *hun-t'ien*, and *hsüan-yeh*; these thoughts were recorded in a memorial to submit his treatises; the history of scholars' work on the treatise on astronomy is given in chap. 6 of Beck, *Treatises*.

<sup>85</sup> *HHS* 60B, p. 2006.

had succeeded in making it back to Loyang in 190, it was only to experience the fall of the court's institutions, their destruction, and two to three years without his vast personal textual resources as well as those formerly housed at the Tung-kuan. Ultimately, the bleakness of Ts'ai Yung's martyrdom came through in the retrospective judgment recorded by the compiler of his *Hou Han-shu* biography. There, Ts'ai was grouped with Ma Jung, as examples of great minds who met the tragic results of unavoidable contact with tainted politics.<sup>86</sup>

#### THE TUNG-KUAN SEARCH FOR A LOST MUSIC SYSTEM

Nathan Sivin's learned study of Han-era astronomy, taking up men like Liu Hung and Ts'ai Yung, narrated a technical *Problematik* in computed ephemerides – the new Quarter-Day System to predict lunar eclipses was not an improvement, and no one was proposing how to correct the system's bases through better numerical constants and long-term observations of the heavens. Sivin and Christopher Cullen, in the latter's explorations of physical astronomy, indirectly give food for thought about the characteristics of polymathy.<sup>87</sup> For astronomy, scholars like Ts'ai Yung chose to revive technics (even if not entirely successful) that were linked in the public's mind with court rites, which in turn connected to political legitimacy. Yet this conscious pursuit was occurring as the court fell apart, and any work on the rites could easily be seen as attractive to a potential dynast in the wings, and not simply a loyalist attempt to fix the dying dynasty. Number, measure, and design were now private masteries with enormous public implications. Unfortunately, one implication was that of censure and persecution: there was no protective barrier between pursuit of arts and technics and a dynast's needs. A lesson to the timid at that time might have been "If you want to pursue mathematical astronomy safely, stay in your house." But how many had personal collections that contained the most authoritative old texts and objects? To use an imaginative metaphor, rites technics would have been the particle physics of their day: scholars immersed in the relevant texts and problems often needed state offices and archives, much as nontheoretical physics cannot be done at home but requires multi-billion-dollar government-sponsored research.

<sup>86</sup> See the *tsan* at the end of *HHS* 60B; see Asselin, "Hou Han Shu Biography of Cai Yong," pp. 2056.

<sup>87</sup> Sivin, "Cosmos and Computation," and Cullen, *Astronomy and Mathematics*, bring out the way that modeling and design lay in the background of physical cosmography, with occasional reference to Ts'ai's thought.

I turn to a skill-set associated with Ts'ai Yung that has not, like astronomy, been given a full study. I refer to court musicology, which encompassed metrology, tonal systematics, and performance. *Hou Han-shu* provides a glimpse of the Tung-kuan's contribution to musicological systems and reveals polymathy operating within research and experiment programs. The context was a series of events spanning a century the aim of which was to recoup the Western Han scholar Ching Fang's 京房 (77–37 BC) pitch-standards (*lü* 律) and his stringed device that produced the fixed pitch for the harmonic system (a tonometer). Because Ching's political problems had resulted in his execution,<sup>88</sup> his notes and devices lacked continuity over the decades and created an Eastern Han musicological crisis that came to a head around 177, just before Ts'ai Yung's banishment to the north. The Tung-kuan, presumably with Ts'ai's overview, had artisan-personnel seek out the by then quite old Ching Fang tuner.

Whether or not Ts'ai was part of the search, we know he wrote about it. *Hou Han shu*'s "Treatise on Tonal Systematics" ("Lü-li chih") was presumably drafted by Ts'ai in the late-170s and edited by him sometime in the 180s. It was collated and edited again by Ssu-ma Piao 司馬彪 (b. ca. 237, d. 306) in the period 270–290, as part of the latter's work titled *Hsü Han shu* 續漢書, and finally incorporated into *Hou Han shu*.

Before dealing with the 177 search for a lost system of musicology, I summarize the *Hou Han-shu* context, so that we can capture the narrative intent. The compiler (Ts'ai's voice, even if glossed over by Ssu-ma Piao) discusses his own source material, explaining that the great predecessor in musicology, Pan Ku, based much of what he wrote on records of Han-court discussions under emperor Wu 武帝 (r. 140–86 BC) and discussions led by Chang Ts'ang 張蒼, the "first one [during Han] to be able to master systematics for both pitch-standards and computed calendrics."<sup>89</sup> Pan's now-lost history of musicology also quoted from discussions of around 3 AD–5 AD led by the tonal and celestial researches of Liu Hsin 劉歆 (46 BC–23 AD).<sup>90</sup> Pan's harmonic axioms

<sup>88</sup> On Ching's harmonic theories, see Fung You-lan, trans. Derk Bodde, *A History of Chinese Philosophy* (Princeton: Princeton U. Press, 1953), pp. 109–10; Kao Huai-min 高懷民, *Liang Han I-hsüeh shih* 兩漢易學史 (Taipei: 1970), pp. 128–37; and Jack Dull, "A Historical Introduction to the Apocryphal (ch'an-wei) Texts of the Han Dynasty," Ph.D. (University of Washington, 1966), pp. 80–82.

<sup>89</sup> There seems to have been an important earlier musicologist – the royal prince Liu Te 劉德 (d. 130/29 BC). He was a renowned bibliophile, classics editor, specialist on music texts, and once responsible for directing a court operatic production; *Han shu* 漢書 (Chung-hua edn.) 22, pp. 1071–72; 30, pp. 1711–12.

<sup>90</sup> A reconstruction of Liu's "Chung lü shu 鐘律書" is in Wang Mo's 王謨 Ch'ing-era *Han Wei i-shu ch'ao* 漢魏遺書鈔.

were those of Ching Fang and came from records of Ching's technical inquiries, including a guidebook stating a method for determining not just the older twelve, but Ching's sixty, pitch-standards and a device to maintain their central pitch – a stringed tonometer. The treatise quotes Ching's words: "The tones derived from bamboo [pipes] cannot interval the [appropriately precise] measures for a harmonic [system]. Thus, I have made a tuner 準 in order to determine the computed numbers 以定數. In appearance it is like a *se*-[zither]; ten [Han-era] feet in length, it has thirteen strings. The sounding chamber 隱間 is nine feet long, in order to resonate with the nine-inch dimension of the Huang-chung pitch. Below the main string are graphed the divisions [of intervallic correspondences] by the inches."<sup>91</sup>

We move next to the same treatise's subsection on "Hou-ch'i 候氣," a term rendered as "watching for ethers," but a context best visualized as a testing and observing of geo-pneumatic resonances.<sup>92</sup> At this point, *Hou Han-shu* tells us that in 84 AD, the court realized that Ching's "Sixty Lü" had dropped from scholars' and artisans' toolkits.<sup>93</sup>

[Under Han Chang-ti, in 84 AD], Yin Jung 殷彤, an Expectant Watcher of the Bell-Regulator [Resonances] 待詔候鍾律,<sup>94</sup> sent up a suggestion: "Since no one in our office was capable of understanding the sixty pitch-standards 律 in order to harmonize the notes [for performance], the former Expectant Appointee Yen Ch'ung 嚴崇 fully instructed his son Hsüan according to the method [derived

<sup>91</sup> *HHS*, *chih* 1 ("Lü-li A"), pp. 3000–1, for this quotation and also for the summary points stated in this paragraph. On Ching's musicology, see Fritz Kuttner, *The Archaeology of Music in Ancient China: 2,000 Years of Acoustical Experimentation, 1,400 B.C. – A.D. 750* (New York: Paragon, 1990).

<sup>92</sup> The various references to *hou-ch'i* show that both the 12 and 60 pitch-standards were not just for regulating bell or flute pitches, but to establish precise correlations with geo-pneumatic breaths, calendric and daily periods, metrics, and cosmological models like the Five Processes). See Derk Bodde, "The Chinese Cosmic Magic Known as 'Watching for Ethers,'" rpt. in idem, *Essays on Chinese Civilization* (Princeton: Princeton U. Press, 1981), pp. 351–72; and Huang Yi-long and Chang Chih-ch'eng, "The Evolution and Decline of the Ancient Chinese Practice of Watching for the Ethers," *Chinese Science* 13 (1996), pp. 82–106.

<sup>93</sup> *HHS* 29 ("Lü-li A"), p. 3015. Beck, *Treatises*, p. 58, considers that the passage's being inside the subsection "*hou-ch'i*" is of taxonomic interest; also found verbatim in *Sung shu* 宋書 (Peking: Chung-hua, 1974; hereafter, *SgS*) 11 ("Lü-li A"), p. 210.

<sup>94</sup> In Han, specialist Expectant Watchers of this type were subordinated under the office of the Assistant for the Spiritual Terrace, who served under the Prefect Grand Astrologer; see *Bureaucracy*, pp. 23, 164 (n. 91, which describes the four bells as being "for" the second, sixth, tenth, and eleventh months). It is possible, though, that bell "watching," which was set in the context of natural phenomena (some officials watched ethers, some stars, some shadows), referred to listening to bells of different tones that were expected to resonate automatically at certain moments in the year. I have translated the office name differently from Bielenstein's. I have benefited from Prof. Loewe's comments (private communication) in my translation, which perhaps deviates from his own understanding.

from a Ching Fang-style string] tuner 以準法,<sup>95</sup> and Hsüan practiced [this] thoroughly. The [court's] intention was to order Hsüan to fill a vacancy in the instructional offices by being master-tuner of the orchestral instruments." An imperial decree said "As to Ch'ung's son's having been instructed with thorough knowledge about the pitch-standards, and his distinguishing [their] rhythmic order 族<sup>96</sup> and harmonizing their timbres – that should be carefully tested. He should not, by relying on his father's teachings, [give us] "deafness presented as acute hearing 以聾爲聰"<sup>97</sup> (that is, not attempt to fool anyone). The pitches will be fine and abstruse – no one would be able to say if they are right or wrong. For [tubal] regulators blown randomly, he [should] be able to name all twelve pitch-standards without missing one. In that case, he can be said to have received his father's learning." The Assistant Imperial Grand Musician Hung 弘 tested Hsüan on the twelve *lü*. [Hsüan] got two of them right on the mark 其中二; four were off the mark; and for six, he did not know at all which pitch-standard it was.<sup>98</sup> So Hsüan was dismissed. From this time, of the pitch-standard experts 律家 (or, possibly, "artisan-families"), none has been able to make a [Ching-style string] tuner or set [its] strings.

At this point, the *Hou Han-shu's* narrative immediately jumps ninety years to the Tung-kuan, and its specialists' attempts at technical retrieval.

In 177 AD the Tung-kuan (with the strong possibility that Ts'ai, and perhaps Cheng Hsüan and other musical polymaths were participants) ordered the pitch [expert] Chang Kuang 張光,<sup>99</sup> a member of the Suite of the Heir-apparent, and others to inquire about the

<sup>95</sup> Prof. Loewe and other readers of my early drafts doubt that "*chun*" here means anything more than "an object used [for tuning]," not Ching's, or a Ching-style string device. But my suggesting that it is such reflects the way the narration develops, and Ts'ai Yung's (its author's) emphasis of the struggle to restore Ching's knowledge. Note that the treatise began by laying out Ching's description of his art; it next moved into a technical listing of Ching's 60 pitch-standards, and after the present section it narrates a search for a Ching tuner. As an aside, one can only deduce that a complex harmonic system was reflected in string tuners of E. Han times, given the tone-regulating of much earlier zithers in general; see Bo Lawergren, "The Metamorphosis of the Qin, 500 BCE-CE 500," *Orientalism* 34 (2003), pp. 31-38.

<sup>96</sup> I read this *tsu* as *tsou* 奏.

<sup>97</sup> This phrase is used at the very end of Hsün-tzu's essay on "The Fu 賦" (see *Hsün-tzu* 荀子 [TSCC edn.] 18, no. 26, p. 565).

<sup>98</sup> I suspect that "on the mark 中" meant that he identified whether the pitch-standard was natural 清 or flatted 濁, and "off the mark 不中" meant he perceived a natural when it was a flatted.

<sup>99</sup> This notice about the Tung-kuan is also carried, almost verbatim, in *Chin shu* 晉書 (Peking: Chung-hua, 1974; hereafter, *CS*) 16 ("Lü-li A"), p. 480; no other biographical facts about Chang are known. The events are mentioned in Swann, "Biography of Empress Teng."

basic idea of [Ching Fang's] tuner 問準意.<sup>100</sup> [Since] Chang and the others did not know about it, only after returning to examine the old store-rooms did they obtain an instrument of that [sort]: its shape and operation were like that [described in Ching] Fang's writings. Yet, they could not set the the slackness and tautness (that is, the tension) of its strings.

Notes cannot be written down so as to enlighten men about them. Even when those who have knowledge about [harmonics] seek to teach, they find that there is no beginning basis; [and thus, logically] whenever those who have instinctive accomplishments [in it] embody its knowledge, they find that there are no teachers. Thus, those in the historiographical offices who are able to assess the clear [regular, non-tempered pitches] and the turgid [flatted, tempered pitches] have become attenuated [in number]. Anyone wishing to transmit [the art] from one to another has had only [the two options]: to engage in broad discussion about fixed numbers 大推常數<sup>101</sup> (that is, the linear and voluminous dimensions of pitch-pipes, sounding stones, or cast bells), or else watch for the ethers 候氣 (testing of various tube-sets below grade to see which tubes resonated at the proper moment with a certain pneuma).<sup>102</sup>

The Ching Fang system as reflected in an actual, or else a derivative, Ching pitch-regulator, had become mostly lost, although some notion of it remained among artisans like Yen Ch'ung. To remount the precise system, a plan was devised and was brought to the attention of the emperor. A talented child of an artisan family was carefully trained in the actual tones, using tubal pitch regulators (but perhaps also a string-tuner): in essence, the boy was to be a human tonometer. This failed. The treatise narration takes us next to 177, when the prob-

<sup>100</sup> It is possible to render this phrase as "inquire about a pitch-regulator treatise [by Ching Fang]." Liu, *Shih t'ung t'ung-shih* 3 ("Shu-chih," sect. 8), p. 57, asserts that technical treatises included in histories were called "書 *shu*" by Ssu-ma Ch'ien, "志 *chih*" by Pan Ku, and "意 *i*" by Ts'ai Yung, who, as explained, is likely to have written this very passage. (When required by court taboo, Fan Yeh used *i* in place of *chih* in the context of "treatises"; *HHS* 7, p. 287, comment no. 1, citing "Manual on Taboo [Names].")

<sup>101</sup> Perhaps a corruption of 推常數 "to calculate the fixed numbers [for pitch standards]"; *HHS* ("Lü-li A"), p. 3015.

<sup>102</sup> Cf. trans. in Kenneth DeWoskin, *A Song for One or Two: Music and the Concept of Art in Early China* (Ann Arbor, 1982), p. 81. DeWoskin does not perceive the context quite as I do. The Tung-kuan officials sent their men on a mission to search out the physical tuner, and probably also to get information from any artisans that might have known about it. DeWoskin translates: "We can go back and read in the old canon. We can even get possession of some of the old instruments..." I prefer to see the *HHS* text as narrating a crisis in the reconstruction of pitch regulation: a research command came down, then a search of old store-rooms, and finally a failed attempt at tuning a device found there. The use of 乃 supports my claim; they "only then did obtain," not the subjunctive-sounding, "We can even get possession..."

lem was reopened in an era when the Tung-kuan had become a place of research into a variety of technics. The last paragraph, as strophed in the translation, above, marks where Ssu-ma Piao probably stopped quoting from Ts'ai's records in order to offer an apologium: namely, that eventually there was no longer a Ching Fang string-tuner, no system for notation, and thus no method by which to teach music harmonics.<sup>103</sup> With this, the treatise's small subsection on geo-pneumatics ends, and so does any larger narration of the search to regain lost musicological knowledge. This would all change in the 270s, as we see below.

I propose the phrase "strong polymathic program," meaning that in order to correct the technics associated with court rites, as researched in the Tung-kuan and the available store-rooms and other archives, scholars purposefully pursued older devices and manuals that might have helped them. In this case, the musicological scholars read about the problems of the 80s AD; they more than likely could interview music artisans familiar with the history of their offices and the nature of earlier tonometric tests, and deduced that the Ching Fang system and/or the fabled tonometer itself was stored away and could be recovered. They succeeded in finding something, but lacked the art by which to restore it. This seems on the face of it to be a type of research program, based on texts of old experiments and devices, and with an agenda to reconstruct them. It employed a team and more than likely crossed bureaucratic boundaries. Whether Ts'ai Yung personally ran this recovery effort is not clear nor is it as important as the fact of the strong program itself, with court scholars acting in concert to address a crisis. Often in the history of technics and arts in China, a specific scholar's dedication to an internal problem will push the court to provide (or he will obtain on his own accord) technicians from low posts, and get access to archives and stores. Ts'ai Yung in fact was that sort of scholar: he pushed the polymath envelope.

#### THE IDEA OF A TUNG-KUAN AND ITS BUREAUCRATIC PLACE

The Imperial Library was created in 159 AD.<sup>104</sup> Subsequently, and perhaps consequently, overviews of court institutions began to elide

<sup>103</sup> For the idea that there was no coherent pedagogy, see *Shih-chi* 24, "Yüeh shu," p. 1177: "Those officials who master only one of the canonical books cannot understand the [song] texts on their own; only if one assembles all the erudites of the Five Canonical Books and has them together discuss and recite the texts may one comprehensively understand their meaning..."; quoted and trans. Martin Kern, "A Note on the Authenticity and Ideology of *Shih-chi* 24, 'The Book on Music,'" *JAOS* 119.4 (1999), note at p. 674.

<sup>104</sup> *HHS* 7, p. 306; *Bureaucracy*, p. 23.

the Library with the Tung-kuan. The elision happened out of a need to describe continuity in offices over time, and because the Tung-kuan's development had always been *ad hoc* – essentially a building under the control of inner-palace residents, not the state bureaucracy. In fact, the Treatise on Officialdom in *Hou Han-shu* does not even mention the “Tung-kuan.” If it was a strong polymathic site, it was nonetheless a bureaucratic nonentity. The Treatise on Officialdom in *Sung-shu* 宋書 (written just before 500 AD), under the subsection “Imperial Library Inspector,” emphasizes the fact that during Eastern Han the Tung-kuan took in numerous documents 圖書, but that only in Western Chin, especially under Hui-ti 惠帝 (r. 290–307), did the gentlemen-drafters 著作郎 become a regularized post devoted to compilation of the court histories under the aegis of the Library and located at the Tung-kuan.<sup>105</sup> The functionally parallel treatise in *Chin-shu* (compiled in early T'ang) concurs, making a special point to deny that in Eastern Han the Tung-kuan was a site of regularized office-holding.<sup>106</sup>

Was there an actual Tung-kuan building by the 200s? If not, how was any nominal or legendary Tung-kuan faring? Who were the polymathic intellects, and what were their manner and use of polymathy? Wang Su 王肅 (195–256) was, to the best of my knowledge, the first to give the Tung-kuan a real historical characterization, however brief. He also tried to increase the status of its parallel entity the Library, with which he himself became associated. We should assume that the original Tung-kuan structure and its stores were eradicated in the Lo-yang holocaust (perhaps with some meager material remains). (These fires are discussed, below.) During Wei Ming-ti's reign (227–239) the imperial city was undergoing a spate of rebuilding, and the court had to sort out the problems involved with labor, designs, and expenses. Wang Su was close to these problems, as evidenced by his memorials to the throne in the years between 230–240. Both Jack L. Dull and R. P. Kramers noticed two important fragments of Wang's consultation about scholarly offices, but neither could clarify the issues.<sup>107</sup> The texts

<sup>105</sup> See *SgS* 40, p. 1246; also, *TPYL* 233 (sect. “Officialdom, 31 職官部三十一”), p. 2a, quotes this passage, but then turns to a comment (whose source I have not been able to locate) to the effect that men like Ma Jung and Ts'ai Yung were named to the Tung-kuan as 校書郎, that is “gentleman-collators,” and in Ts'ai's case he was “reconfirmed” as gentleman-consultant, and that this meant he was a gentleman-drafter 複拜議郎, 知是著作郎也.

<sup>106</sup> *CS* 24 (“Chih-kuan”), p. 735.

<sup>107</sup> See R. P. Kramers, *K'ung Tzū Chia Yü, The School Sayings of Confucius: Introduction, Translation of Sections 1–10, with Critical Notes* (Leiden: Brill, 1950), pp. 62–64, esp. 62, n. 187 re. memorials on the Library; Dull, “Confucian Origins,” p. 56, n. 39, was puzzled by Wang Su's mixing of the concepts of Library and Tung-kuan.

are difficult, mostly for the reason that early writing frequently used nicknames, literary alternatives, and abbreviations for state offices.

The first opinion by Wang Su came in about 236,<sup>108</sup> when Ming-ti's court debated whether to join the Library's inspector and assistant with the post of erudite, cum gentleman-consultant. Wang held that the "Library offices were closely positioned vis-à-vis the San-t'ai 秘書職于三台爲近密." He noted that the Library ought to have rewards and status directly in line with those of the San-t'ai, but that it was not so in his day. He explained that the Library staff had to use small carriages, were without proper costume, and received only lower-priority imperial directives in contrast to the Yü-shih-t'ai (perhaps here one of the San-t'ai), with its big carriages and high-priority directives 今侍御史乘犢車, 奏事用尺一; 秘書丞、郎乘鹿車, 猶用尺奏.<sup>109</sup> The push for Library parity is related to Wang's having just been made head of the Ch'ung-wen Academy 崇文觀. His career from this point on was centered almost exclusively around matters of education, pedagogy and testing of young scholars; and from this time forward, even while banished from Ts'ao Shuang's court in the 240s, he committed his views on the classics and classicism to important private writings.

About two or three years later, Wei Ming-ti was considering whom to appoint as inspector of the Imperial Library. He summoned over 300 officials to the Library, from the carriage attendants on up,<sup>110</sup> instructing them that the right person should be a pursuer of logic and principles, but also able to keep lower-downs in line through discipline. Thereupon, Wang Su was given the post, but merely "through his post as regular attendant," not as an outright transfer. This seems to have been the key to Wang Su's complaint, as he reflected on his having been among carriage hands and doormen as he received the honor:

<sup>108</sup> *TPYL* 233, p. 3a; Yen K'o-chün, *Ch'üan San-kuo wen* 全三國文 (Taipei: Shih-chieh shu-chü, 1969; hereafter, *CSKW*) Wei 23, pp. 1a-b, with a different arrangement of the text elements; *HCHS* 6, p. 138 (but only parts of the texts), which sets the year in 236, surely a deduction, since there are no other sources for corroborating the exact date. Help in understanding the language comes from the notes given in *Ch'u-hsüeh chi* 12, sect. Chih-kuan, hsia; 秘書監, 第九.

<sup>109</sup> A *t'ai* could be any number things: San-t'ai in T'ang-era contexts was an alternative phrase for "San sheng 三省" (Shang-shu, Men-hsia, and Chung-shu); and also a reference to the three palace services – Pi-shu, Tien-chung 殿中 (personal domestic services for the royal apartments), and Nei-shih 內侍 (security, carriages, etc.). But comparison with Yü-shih t'ai suggests that Wang did not systematically use *san-t'ai*, or perhaps copyists updated Wang's phrases. See Robert des Rotours, *Le traité des examens* (Paris: 1932), pp. 2–12.

<sup>110</sup> I follow Kramers, *K'ung Tzū Chia Yü*, p. 62, which has the emperor ordering men to gather at the Library; but the phrase can also be read as "made commands to the Library's more than 300 staff, from the mounted attendants on up."

The Wei Library is [equivalent to] the Tung-kuan of Han times. Whatever [ideas] the officials of the commanderies and kingdoms [thought] should be sent forward, went to the Tung-kuan. Yet ever since the Wei (under Wen-ti) separated the Library and converted it into a Palace Writers post (thus, under the Privy Treasury), it has been handed down [like this] with continuation. In today's three inspectorates,<sup>111</sup> there has never been [a Library inspector] made nominally attached to the Privy Treasurer. Now you wish to have my name listed with the stable grooms and have me speak about affairs in the Outer Treasury.<sup>112</sup> Does this not destroy the court institutes and degrade the state norms? In the middle of the T'ai-ho reign (thus, only several years previously, about 228–30), the Magnolia Pavilion and the Library would dispute opinions, and the Three Offices announce them. The Library oversaw the records of former rulers; it managed the instructions contained in imperial edicts. [Because] it was very close to the Palace Writers [in function], we ought [now] to make [them] into one office. 魏之秘書即漢之東觀，郡國稱敢言之上東觀，且自大魏分秘書而為中書以來，傳緒相繼，于今三監，未有隸名于少府者也。今欲使臣編名于騶隸，言事于外府，不亦隳朝章而辱國典乎？太和中，蘭台、秘書爭議，三府奏議。秘書司先王之載籍，掌制書之典謨，與中書相亞，宜與中書為官聯。

Despite the confusion among terms like Three T'ai, Three Offices, and Three Inspectorates, the gist is that earlier in Wei times the Library was refounded only after putting it in the purview of the Privy Treasury. Wang Su thought this was a mistake and explained with a direct analogy: the Library should be considered the same as the old Tung-kuan of Eastern Han, a place that received documents coming in from the localities. Wang does not claim to know exactly under what office the old Tung-kuan was pegged bureaucratically – and no one really did – but does insist that it was not under the Privy Treasury, with its many masters of writing and palace writers. Our own review here of the early Tung-kuan would agree with Wang. The Tung-kuan of the 90s to 170s was accessed mostly through the “gentlemen” posts

<sup>111</sup> I cannot say which three he means, but undoubtedly the Library is one of them. In E. Han, eunuchs, supervised by the Privy Treasurer's regular palace attendants, developed power by coopting dozens of Treasury inspectorates. The chief three such inspectorates were Wardrobe, Masters of Techniques, and Palace Gardens. These eunuch controllers increased, until the eunuchs were massacred in 189. Then, scholar-officials began to come back into the inspectorates. In later E. Han, the Privy Treasury was cut back and even disbanded; many of the financial functions it once had were changed, and many of the offices were turned back to local administrations; see *Bureaucracy*, p. 67.

<sup>112</sup> Both 騶隸 and 外府 are derogatory references to the Privy Treasury. I have taken up the anonymous reviewer's specific suggestions in translating this phrase.

that were under another ministry altogether, the Superintendent of the Imperial Household. Here, in about 238 or 239, Wang accepted oversight of the Imperial Library, but shamed the court into keeping the Library free from bad associations (not just the old eunuch taint, but also separate from such mundane Privy Treasury chores as food service, clothing, roads, parks, and carriages). The final phrase drives home the idea that the old Magnolia Pavilion/Tung-kuan nexus was for consulting about state policy, and such offices as Privy Treasurer just carried out the manual postings and oral announcements of edicts. I emphasize that Wang was not suggesting turning the Library into the office of palace writers. The latter was formerly a eunuch post inside the Privy Treasury – a thing to be avoided. He was suggesting, though, that because their functions had been so similar since about 160, after the Library's creation, that they should be rolled into a newly empowered and appropriately honored Library. He seems to have been successful, since there is no further mention of the Library as functioning under the aegis of the Treasury.

As mentioned, the motive for such bureaucratic passion had to do with scholarship as a way of life. Wang Su is an example of a great polydidact. His father had had contacts with polymaths specializing in astrology and astronomy, and he participated in vetting for Ts'ao P'i the numerologically powerful oracle-texts that helped create Ts'ao legitimacy in 220, in preparation for founding the Wei. Wang Su himself produced several works in the area of Taoist "mysteries,"<sup>113</sup> but there is no evidence of specialized arts that pointed, like those of Pan Ku, Pan Chao, Chang Heng, Ma Jung, and Ts'ai Yung, to measure and computing. Wang Su merely desired respect for the office that seemed in his mind linked historically with national consultative duties carried out by the elite, an office to which he aspired.<sup>114</sup>

From the end of Ts'ai Yung's Tung-kuan researches and writings to about the 250s we find no data about an actual Tung-kuan archive building in Loyang, or in Shu or Wu. In mentions of gentlemen-consultants and palace gentlemen there is no antiquarian context.<sup>115</sup> A logical reason for the void is the utter fact of holocaust. Fires took out

<sup>113</sup> On Lang, see Goodman, *Ts'ao P'i Transcendent*, chap. 9 and p. 202. We know of Su's "Obscure Statements and New Notes on Tao and Te" 玄言新記道德 and "Commentary on Master Yang's Great Mystery" 楊子太玄經注; yet the titles of his *I-ching* writing imply phonetic glosses 音 and exemplifications 例 for correcting, not philosophy; see *HCHS* 7, pp. 17–18.

<sup>114</sup> I have touched on Wang's motive in "Lives and Times of the Political Public at the End of the Han," in Kenneth J. Hammond, ed., *The Human Tradition in Premodern China*, Human Tradition around the World 4 (Wilmington, Del.: SR Books, 2002), pp. 48–50.

<sup>115</sup> See, e.g., the *i-lang* involved in Hsien-ti's abdication in 220, a general fighting the non-

a major portion of Loyang's Southern Palace in 185, with a burn of several weeks, and in 190 Tung Cho's troops scoured the capital. Although Tung Cho's officials loaded up at least seventy carts of court documents and items from the Tung-kuan, Magnolia Pavilion, and other repositories for the move west to Ch'ang-an, it would seem that very little of the mountains of materials that had occupied polymaths for over a century survived.<sup>116</sup> This, combined with the loss of the Han dynasty itself, converted the Tung-kuan into an icon and a nominal entity. Substitutions were created. For example, in 254 a politically weak Wei ruler used a palace building named T'ai-chi Tung-t'ang 太極東堂 in order to introduce himself into the court and have audience there with the empress-dowager; two years later at the same site he was holding banquets with respected scholars, with whom he discussed the rites and the actions of ancient emperors.<sup>117</sup> It seems, then, that Tung-t'ang was a reconstituted Tung-kuan.

Other courts besides that in Loyang felt nostalgia about the archive. In 267, the Wu ruler Sun Hao 孫皓, having endured the scholar Hua Ho's 華覈 criticism for wasteful spending and abuse of commoners, assigned Hua to the Wu state's version of the Tung-kuan as prefect. Hua tried to decline, and Sun retorted:

Since the Tung-kuan is the office for [our] gathered experts 儒林, it is proper that they review and collate literary texts and arts, and that they settle unsure and disputed [matters]. In Han times only the most famous scholars and exceptional experts held this office. ... [You are widely read, and] we can call you someone who delights in the rites and music and who is devoted to the odes and documents. With your flying brush and free-roaming ideas, you ought to help in the matters of our time and thus go further than the likes of Yang [Hsiung], Pan [Ku], Chang [Heng], and Ts'ai [Yung].<sup>118</sup>

*San-kuo chih* contains nothing about the Tung-kuan from 190 until about the 240s or 250s, a time when several scholars in the western state of Shu had appointments to a Tung-kuan type of office. Among these was Ch'en Shou 陳壽, *San-kuo chih's* author, sometime before he went

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Chinese in the late 180s, and also from that time an item about several *i-lang*, all brothers: *SKC* 1, p. 43; 7, p. 231 (comm.); 11, p. 337.

<sup>116</sup> On the fires and losses, see Dull, "Historical Introduction to the Apocryphal (ch'an-wei) Texts," p. 317; also Yüeh-chin, "Tung-kuan chu-tso," p. 46.

<sup>117</sup> *SKC* 4, pp. 132, 134 (comm.), and 138 (comm., where the scholars are different ones, who are lauded and said to have written essays in the Tung-t'ang); also Yang Chen 楊晨, *San-kuo hui-yao* 三國會要 (Peking: Chung-hua shu-chü, 1956; hereafter, *SKHY*) 15, p. 281.

<sup>118</sup> *SKC* 65, p. 1467; *ju-lin* may also mean "students" or "writers."

to Loyang in about 269–270.<sup>119</sup> In the south, in the state of Wu, all we know of the Tung-kuan is that at least three scholars, including Hua Ho, had the title Tung-kuan prefect 東觀令 in the 270s.<sup>120</sup> In both kingdom-states the title represented an attempt to establish scholars in an office for the purpose of historiography, and also for antiquarian research, especially concerning omens. The one clear example of the latter comes in a record for the year 279, when Wu's fate hung in the balance (as the Chin court talked of invasion), and omens were debated. Politically ominous plants were noticed growing in two households, and the heads of those houses were given honorary offices (in fact, gentlemen 郎) as curators of the omens. But before that could be done the Tung-kuan had to decide what the plants were and how to handle them.<sup>121</sup>

As the Western Chin reestablished court scholarship in the late-260s and 270s, naturally the offices of historiography were prized. Important Chin scholars like Hsün Hsü (see below), Fu Hsüan 傅玄 (217–278), Chang Hua 張華 (232–300), and Shu Hsi 束皙 (ca. 260–300) received at various times the official title gentleman-drafter,<sup>122</sup> which by the 270s and 280s had begun to resonate with the old Tung-kuan. According to Anthony Fairbank,<sup>123</sup> the earliest court-commissioned Chin historiography in the 290s shows signs that men like Lu Chi 陸機 (261–303) and Shu Hsi (heads of the gentlemen-drafters under Hui-ti) were operating under the traditions of the Eastern Han Tung-kuan in terms of how work progressed and how the parts were produced that eventually made up a written history. This is borne out by other evidence. In the late-280s, Hua Chiao 華嶠 (b. ca. 235–40, d. 293), a historiographer noted for skill in astronomy and harmonics, remarked in a memorial declining appointment to the Library: “Of old, Liu Hsiang and son had the documents and materials of their entire generation; Ma Jung was so thoroughly comprehensive that he went into the Tung-

<sup>119</sup> *Hua-yang kuo-chih* 華陽國志, ch. 11, says he was a *Tung-kuan pi-shu lang* 東觀秘書郎 (see William Hung's preface, *Combined Indices to San Kuo Chih and the Notes of P'ei Sung-chih*, Harvard-Yenching Sinological Index Series 33 [rpt. Taipei: Ch'eng-wen, 1966], p. i); but Chen's biog. in *CS* 82, p. 2137, has “東閣令史.” See also *SKHT* 9, p. 162. For a study of Ch'en's life in its relation to W. Chin historiography and politics, see Goodman, “Retuning the Ts'aos.”

<sup>120</sup> *SKC* 27, p. 1326; 60, pp. 1392, 1394; and 65, pp. 1468–69.

<sup>121</sup> The plants were the Demon-eye 鬼目 and the Mai 買 (also written with the grass element); *SKC* 48, p. 1173; see Lu Pi 盧弼, *San kuo chih chi-chieh* 三國志集解 (rpt. Taipei: Hsin-wen feng, 1975) 48, p. 41b [p. 964]. On anomaly collecting, see Company, “Two Religious Thinkers.”

<sup>122</sup> On Fu, see Jordan Paper, *Fu-tzu, A Post-Han Confucian Text*, Monographies du T'oung Pao 13 (Leiden: Brill, 1987), p. 71; *Chin-shu* 晉書 36, p. 1070 (re. Chang); and *HCHS* 7, pp. 207–8 (re. Shu).

<sup>123</sup> Anthony Bruce Fairbank, “Ssu-ma I (179–251): Wei Statesman and Chin Founder, An Historical Inquiry,” Ph.D. diss. (Seattle: University of Washington, 1994), pp. 48, 82.

kuan three times. It is not for someone with my piddling triviality to dare imitate.”<sup>124</sup> In 292 AD the Western Chin throne placed the gentlemen-drafters under the direction of the Imperial Library: “Further, they established eight assistant 佐 *chu-tso lang*. When each *chu-tso lang* first came into the office, he had to compose a biography of a single great minister [as a test] 必撰名臣傳一人.”<sup>125</sup> This official alignment firmed up the Library as the place that would continue Tung-kuan historiography. Also, Shu Hsi’s post in the Imperial Library gave access to the Chi Tomb texts that had been discovered over ten years before. It did not matter that he was appointed in 296 only at the level of drafter, an appointment effected by his mentor Chang Hua, at that time an inspector of the Palace Writers. This marked the beginning of Shu Hsi’s production of historiographical works like annals and treatises, after which he was elevated to erudite.

In the Southern Dynasties period, courts were granting appointments to scholars to compile materials for court history once again in an office called a Tung-kuan. In 470, emperor Ming of Sung rounded up his best scholars to serve in an institution that some called 總明觀, yet was also known as “Tung-kuan.” The high official and rector of the Imperial Academy Wang Chien 王儉 (452–489), very much a leading scholar, is said to have been set up with an academy at his personal residence, and that part of his task was to complete the difficult task of cataloging the works from the Tsung-ming kuan /Tung-kuan, this being a hint at a text collection associated with a nominally Tung-kuan type of place, even though it seems that Wang’s mansion was the preferred, actual location.<sup>126</sup> The well-known Hsü Ling 徐陵 (507–583) was once appointed as scholar for the heir-apparent 東宮學士, but in a prose work he mentioned that he had been associated with materials in a “Tung-kuan” as a compiler of history and policy, and it is perhaps relevant that he wrote a *Chuang-tzu* commentary.<sup>127</sup> The notion of a posting for

<sup>124</sup> Yen K’o-chün, *Ch’üan Chin wen* 全晉文 (Taipei: Shih-chieh shu-chü, 1969) 66, p. 2a.

<sup>125</sup> *CS* 24 (“Chih-kuan”), p. 735; see n. 105, above. Also, see *HCHS* 7, p. 174, which supplies further sources; and on the elision of Drafters with various personnel in the Imp. Library, see *Tung-tien* 26, p. 156A. My translation follows the reading of this same passage by Liu Chih-chi, who adds: “This was to examine generally [the official’s intellectual] origins; if in fact he had no talent, then he could not be allowed to take up historiographical tasks 斯蓋察其所由. 苟非其才 則不可叨居史任”; *Shih-t’ung t’ung-shih*, ch. 9, nei-p’ien, p. 65.

<sup>126</sup> See *TPYL* 534, sect. “禮儀部 13,” p. 6a; also *Nan-shih* 南史 (Peking: Chung-hua, 1975) 22 (Wang’s biog.), p. 595. Remarks on Wang’s private academy and his scholarly coterie are given in Cynthia Chennault, “Odes on Objects and Patronage during the Southern Qi,” in Paul Kroll and David R. Knechtges, eds., *Studies in Early Medieval Chinese Literature and Cultural History: In Honor of Richard B. Mather and Donald Holzman* (Provo, Utah: The Tang Studies Society, 2003), pp. 356, 360–65.

<sup>127</sup> Yen K’o-chün, *Ch’üan Ch’ien wen* 全陳文 (Taipei: Shih-chieh shu-chü, 1969) 7, p. 5a:

polymaths, including taoistic polymaths, remained down through the ages, as we see in a remark centuries later by Su Shih 蘇軾, who directly linked the phrase “Tung-kuan” with the post of gentleman-drafter of his own day, and cited the Eastern Han and Chin gentlemen-drafters that we have been examining.<sup>128</sup>

#### THE STRUGGLES OF UNIVERSALIST THINKERS

Polymathy between the fall of the Han and the beginning of Western Chin produced synthesizers of different sorts. Two in particular were Kuan Lu 管輅 (210–256) and Hsün Hsü 荀勗 (b. ca. 224, d. 289). The time period was politically dangerous, as I have mentioned, but learning went on as a natural part of the cultural landscape. A cursory look at the chapter on “Schools” in *San-kuo hui-yao* 三國會要 shows that a number of local teaching centers and court revivals of the classics existed in the 190–280 time period,<sup>129</sup> and the life of the northern scholar-diviner Kuan Lu provides evidence of this. He was a low- to mid-level official from an uninfluential family and moved around in order to gain patronage. When in the company of higher officials he instructed them rigorously about his views of human and natural processes, hoping he would gain high office, something that never occurred perhaps due to those instructions and his disturbing predictions.<sup>130</sup>

As a boy, Kuan studied *I-ching* under a certain Kuo En 郭恩, who lived in a locale where Kuan’s father was in service. Kuo apparently ran a small school. We know this because after less than a year’s study, Kuan’s own style of *I-ching* techniques emerged, and he began making astonishing predictions of life situations for “all the students at the academy 覺上諸生.” To make those predictions he used kleromancy (random drawings, or mathematical sortings, of divining slips) to construct hexagrams 分著下卦. Kuan also studied astrology with Kuo.<sup>131</sup> From

“謝敕賈燭盤賞答齊國移文啓”：“臣職居南史，身典東觀，謹述私榮、傳之方策。” See also his biog., *Ch'en shu* 陳書 (Chung-hua edn.) 26, pp. 325–35.

<sup>128</sup> Su cites Chang Hua’s and Shu Hsi’s names among a list of famous gentleman-drafters in the Tung-kuan. See his prose in honor of Huang Ting-chien’s appointment as gentleman-drafter: “黃庭堅著作佐郎,” where we read: 昔張衡，崔駰，張華，束皙皆以才行久於此官； in *ch.* 28, p. 12a, of the second part of *Jingjin Dongpo wenji shilue* 經進東坡文集事略 (SPTK edn., which presents this work in two parts, the *ch.* numbering starting again from “1”; this *ch.* 28 is the one located in the second part, the title page of which says “Luan-ch’eng chi 欒城集”).

<sup>129</sup> See *SKHY* 15, pp. 278–84.

<sup>130</sup> Andrew Meyer, “Biography of Guan Lu,” chap. 4 in Hammond, ed., *Human Tradition*, pp. 58–59; and the full English translation of Kuan’s *SKC* biog. by DeWoskin, *Doctors, Diviners*, pp. 91–134. Below, passages from Kuan’s biog. quote DeWoskin’s trans.

<sup>131</sup> DeWoskin, *Doctors, Diviners*, p. 91. He eventually instructed Kuo about difficult aspects of *I-ching*, and he made a forensic divination concerning illness in Kuo’s family, which he figured out through a late-night epiphany only after precise *I-ching* systematics had been exhausted.

there, Kuan developed a holistic and systematizing sort of polymathy. Its epistemology was an attempt to determine all changing events by means of number, sign, and systematic correlations. For example, in attempting to teach a client-student orniphonic divination, he stressed the numerical systems involved. “[His student] was hampered by failure to understand the mathematical relationships of the pitches 不解音律 (lit.: “the [twelve or more] pitch-standards of the harmonic series”)... In order to explain the shifting of the eight wind directions and the numerical relations of the five tones, Lu used the twelve pitches to record analytically the calls of the various birds and the sexagenary cycle to note the time of day.”<sup>132</sup>

*The Stoic Kuan Lu: A Blend of Arts to Instruct and Predict*

Kuan was not a scholar-official classicist, although he knew his traditional classics and often used the basic Confucian texts as rhetoric. Going beyond Confucian scriptures, his worldview employed the following arts:

1. revelation of things hidden, lost, or forgotten (usually termed *she-fu* 射覆);
2. meteorognomy;
3. wind angles (or, whirlwinds) (*feng-chiao* 風角);
4. physiognomy (*hsiang* 相);
6. harmonics (*chih-yin* 知音), including orniphonics (bird-music);
7. hemerology (arts such as *liu-chia* 六甲, *tun-chia* 遁甲, *kan-chih* 干支);
8. astrology (*t'ien-wen* 天文, *chan-hsing* 占星);
9. I-ching divination; and
10. life- and career-date predictions (perhaps with a computing board, but this is not clear).

Kuan identified orniphonics with language per se, and discussed how the language of birds and the harmonic system of music performed similar functions. Someone debating Kuan proposed that human speech and bird calls were qualitatively and epistemologically mutually exclusive: “We call the sounds of living people ‘speech’ whereas the noises of birds are ‘calls.’” The debater next pointed out that the former is a quality of sapience, the latter merely the “sounds of mindless beasts,” and that Confucius had averred to the relatively low status of beasts. Kuan’s retort started with a natural history of epistemology: the stars contain

<sup>132</sup> SKC 29, p. 815-16; DeWoskin, *Doctors, Diviners*, p. 101. Such a holistic approach to calculating all events in all times, is seen in more modern times with Laplace; see David Park, “On the Fortunes and Misfortunes of Laplacian Determinism,” in J. T. Fraser, Marlene Soulsby, and Alexander Argyros, eds., *Time, Order, Chaos: The Study of Time IX* (Madison, Conn.: 1998), pp. 147-54.

messages, as do human ideas, but stars cannot speak. So heaven rotates the constellations, brings them into contact with the clouds, winds, and earth below, and uses birds and beasts as “agents” of those messages.

Much like a Roman Stoic, Kuan plumbed the seen and unseen, delving into the past, present, and future, and using numerous tools to reveal nature’s encoding of changes in events. He once gave a divination upon seeing a whirlwind with a three-foot funnel, and predicted a personal tragedy. His technical explanation for it joined the arts of hemerology (the day was the fifty-second of the cycle, which indicates the symbol of an eldest son), astrology (the tail of the Dipper, as it entered the next sector), and *I-ching* systematics (computing a hexagram structure that implied the arrival of a certain type of visitor). This is only one of many examples of Kuan Lu’s complex blending.<sup>133</sup>

He was appointed as “scholar” in local academies; one such post was granted by P’ei Hui 裴徽 (fl. 230–250),<sup>134</sup> uncle of P’ei Hsiu 裴秀 (224–271) and great-uncle of P’ei Wei 裴頌 (267–300), the latter two being outstanding polymaths of their day, skilled in such arts as music, cartography, and pharmacopoeia.<sup>135</sup> Upon his death, many of Kuan’s contemporaries assumed that he “possessed obscure writings (or, in another sense, manuals) as well as computations based on symbols and matrices (perhaps calendrical matrices) 有隱書及象甲之數.”<sup>136</sup> His brother stated that he looked over Kuan Lu’s textual materials and found them to be, however, only commonplace ones. Commonplace for such a technician meant such titles as “Forest of Changes” 易林, “Wind Angles” 風角, and “Manual of Bird Calls” 鳥鳴書. The implication here, despite all the brother’s rhetorical posturing about how and how much Kuan knew, is that guide books circulated throughout early China. In fact, similar texts are among those comprising the earlier titles in the Taoist and Buddhist collections, and among late-T’ang-era Tun-huang texts on a variety of arts, several of which are attributed to Kuan Lu.<sup>137</sup> In the third century, formal avenues and even markets, for polymathic knowledge were just emerging.

<sup>133</sup> E.g. of mixing *I-ching*, hemerology, omenology, and revealing the hidden; *SKC* 29, p. 827.

<sup>134</sup> One such post was as scholar at P’ei’s Academy of the North “爲北鬻文學”; DeWoskin, *Doctors, Diviners*, p. 108, slightly emending the terminology.

<sup>135</sup> The P’ei-family’s pursuit of polymathic skills is discussed in Howard L. Goodman, “Exegeses and Exegeses of the Book of Changes in the Third Century AD: Historical and Scholastic Contexts for Wang Pi,” Ph.D. diss. (Princeton U., 1985), pp. 96–103. On the importance of the Pei family in this period, see Wei Cheng-sung 魏征松, *Wei Chin Sui T’ang chien te Ho-tung P’ei-shih* 魏晉隋唐間的河東裴氏 (Taiyuan: Shanxi jiaoyu chubanshe, 2000).

<sup>136</sup> *SKC* 29, p. 827; cf. DeWoskin, *Doctors, Diviners*, p. 127.

<sup>137</sup> See references to Kuan Lu in, e.g., Kan Pao’s writing ca. 300 (see Company’s article in

Ts'ai Yung's and Kuan Lu's polymathies partly converged – a shared set of divinatory arts and similar strivings for public status and security through technical work. Yet, the differences are key. Ts'ai was committed to mathematical problems in harmonics and astronomy not to win adherents to a divinary, cum epistemological, worldview, but to solve problems lurking historically both in the written and practical bases of rites techniques and to effect research in the company of other experts. Kuan Lu was an outsider, both quasi-scholar and quasi-artisan, seeking benefits and clients through professional-seeming divinations. He was not one of Ts'ai's ilk – those Tung-kuan scholar-officials who pined for a lost holism and continued correcting rites for potential imperial courts.

As we have seen, the Imperial Library, just around the time of Kuan Lu's last years, began to assume the Tung-kuan role. Our final polymath, Hsün Hsü, who received subtle Tung-kuan influences, forged a career in the Imperial Library. Because we know far more about his family than almost all the other polymaths so far discussed,<sup>138</sup> I want to continue the exploration of polymathy's shape over time, by asking how arts developed in extended families, something that Chang K'o-li has gone into in depth concerning the Eastern Chin calligrapher-painters. The following shows that the old Tung-kuan concerns were carried along specific streams that began to coalesce especially among three families.

### *Hsün Hsü's Strong Loyalist Polymathy*

Hsün Hsü descended from an Eastern Han scholar-official family of means whose first strong figure was Hsün Shu 荀淑 (83–149). By the 130s and 140s, through increasing stature, wealth, and cohesion with other families in the Ying-ch'uan 潁川 home region, he was supplying opportunities for his sons' classical educations, although none, as far as

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this issue); Hsiao Chi 蕭吉, *Wu-hsing ta-i* 五行大義 (ca. 590–600); trans. Marc Kalinowski, *Cosmologie et divination dans la Chine ancienne: Le compendium des cinq agents (Wuxing dayi, VI<sup>e</sup> siècle)*, Publications de l'École Française d'Extrême-Orient 166 (Paris: EFEO, 1991), p. 42. A Tun-huang example is "Kuan Kung-ming pu-fa 管公明卜法" ("Kuan Lu's Divination Method"), a system of manipulating counters to obtain 16 figures, 8 being mythic persons (Chou-kung, Ch'ü Yuan, Confucius, etc.), and the 8 trigrams; summarized Kalinowski, "La divination par les nombres dans les manuscrits de Dunhuang," in I. Ang and P.-E. Will, eds., *Nombres, astres, plantes et viscères: Sept essais sur l'histoire des sciences et des techniques en Asie orientale* (Paris: CNRS and Collège de France, IHEC, 1994), pp. 59–60; also Michel Strickmann, *Chinese Poetry and Prophecy: The Written Oracle in East Asia* (Stanford: Stanford U.P., 2005).

<sup>138</sup> See Chi-yun Chen, *Hsün Yüeh (A.D. 148–209): The Life and Reflections of an Early Medieval Confucian* (Cambridge: Cambridge U. Press, 1975), a work concerned primarily with the culture of classicism in the family before the time of Hsün Hsü.

we know, ever entered the Tung-kuan.<sup>139</sup> In the 180s and 190s, during the violent struggles in the Central Plain to consolidate power, certain Hsüns supported Ts'ao Ts'ao 曹操. Yet by the 250s, Hsün Hsü (b. ca. 224) and his elder distant cousin Hsün I 荀顛 (205–274), both having served the last strong Ts'ao, the ill-fated regent Ts'ao Shuang 曹爽 (d. 249), shifted over to Ssu-ma Chao 司馬昭 (211–265) and considered the incipient Ssu-ma imperial legitimacy as their scholarly mission. Hsün Hsü was still very young, but his kinsman was already noted as a scholar and historiographer.

One of Hsün Shu's sons was Hsün Shuang 荀爽 (128–190), Hsün Hsü's great-grandfather. He was a well-known scholar who suffered in the Factional Clashes of the 160s and 170s and consequently hid for over ten years in order to study the *I-ching*. He specialized in its implicit matrices of permutating line and trigram figurations, and produced analyses that were harshly critical of female and eunuch influences at court.<sup>140</sup> Thus, Shuang, though never an actual Tung-kuan drafter, shows several cultural earmarks – anti-distaff and anti-eunuch sentiments, the use of *I-ching* techniques for political criticism, and banishment during the Clashes. Shuang was also famous for opinions on social relations and mourning rites, the sort of thing often touched on in Ts'ai Yung's and others' prose pieces.<sup>141</sup> Based on evidence of his written pieces and biographical facts, he seems not to have been drawn to taoistic themes or Taoist texts.

<sup>139</sup> In the 170s and 180s, Ying-ch'uan was a focus of protest and military action. The Hsün estates, like others in that area, were destroyed by 200 AD. See Chen, *Hsün Yüeh*, and Wang Chung-lo 王仲榮, *Wei Chin Nan-pei ch'ao shih* 魏晉南北朝史 (Shanghai: Shanghai jen-min ch'u-pan she, 1979) 1, pp. 146–47. The family was the subject of numerous remarks in *Shih-shuo hsün-yü*, 世說新語, e.g., Richard Mather, translator and annotator, *Shih-shuo Hsün-yü: A New Account of Tales of the World [By Liu I-ch'ing, with Commentary by Liu Chün]* (Minneapolis: U. Minnesota Press, 1976), p. 250, and mentioned also in Yü Ying-shih 余英時, "Han Chin chih chi shih chih hsin tzu-chüeh yü hsin ssu-ch'ao" 漢晉之際士之新自覺於新思潮," in idem, *Chung-kuo chih-shih chieh-ts'eng shih-lun, ku-tai p'ien* 中國知識階層史論, 古代篇 (Taipei: Lien-ching ch'u-pan shih-yeh kung-ssu, 1980), pp. 215, 220–22, 297–99. Goodman, "Exegetes," pp. 35–45, makes a study of their skills and pedagogical programs. See also, Meng Fan-chih 孟繁治, "Ying-ch'uan mou-shih ch'ün-t'i yü Ts'ao Ts'ao cheng-ch'üan" 穎川謀士群體與曹操政權, *Zhengzhou daxue xuebao* 鄭州大學學報 (Zhexue shehui kexue ban) (1994. 6), pp. 6974; Ch'en Yen 陳雁, "Tung Han Wei Chin shih-ch'i Ying Ju Nan-yang ti-ch'ü te ssu-hsüeh yü yu-hsüeh" 東漢魏晉時期穎汝南陽地區的私學與游學, *Wen shi zhe* 文史哲 (2000.1), pp. 7175.

<sup>140</sup> Ch'en Ch'i-yün, "A Confucian Magnate's Idea of Political Violence: Hsün Shuang's (128–190 A.D.) Interpretation of the Book of Changes," *TP* 54.1–3 (1969). Hsün Shuang's *I-ching* systematics built upon traditional schemata as earlier established by the Western Han *I-ching* text of Fei Chih, which took into consideration permutations and symmetries involving the hexagram arrays; Kao, *Liang Han I hsüeh shih*, pp. 190–200.

<sup>141</sup> E.g., see Asselin, "Significant Season," appendix M, pp. 555–56, on burial and mourning; app. E on matters of corrupt political relations; and app. K on marriage relations; also on

The disjunctions of the 180s and 190s prevented Hsün Hsü's own father and grandfather from appearing in the historical record: they had lost Ying-ch'uan continuity (the region was ravaged in the 190s) and a chance for high state offices. Moreover, no one was advancing Shuang's version of *I-ching*. Hsün Hsü was the first in his specific family line to rise in politics or scholarship since his great-grandfather.<sup>142</sup> Other branches of the Hsün family, though, had been making impacts. An example is Hsün Yü 荀彧 (163–212) – one of Hsün Shuang's nephews (and Hsün Hsü's great-uncle) and a critical leader in Ts'ao Ts'ao's ad hoc courts, known for writing and scholarship. Hsün Yü probably learned his classics either from a family member or a close outsider; we do know that he advised the court on learning and culture, and once acted in concert with his cousin, the well-known scholar and historiographer Yüeh 悅 (148–209), and the equally famous scholar K'ung Jung 孔融 (d. 208) to discuss the classics with Eastern Han emperor Ling 靈帝 (168–189). Yüeh seems not to have written commentaries on the classics, yet was somewhat knowledgeable about his uncle Shuang's *I-ching* theories.<sup>143</sup> He personally knew men whose ideas tended toward systematics, arts, and numeracy.<sup>144</sup> Yü's eldest son married a Ts'ao princess and we know of no scholarly products from him.

Yü's youngest son Hsün I 荀顗 (205–274) figured importantly in the rise of the Chin court and in Hsün Hsü's career as well, but had no sons of his own.<sup>145</sup> He showed a flair for *I-ching* theory, but gained a reputation mostly for historiography, ritual code, and music. Under the

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Hsün's and others' (incl. several Tung-kuan scholars) mourning stances, see John Makeham, "Ming-chiao in the Eastern Han: Filial Piety, Reputation, and Office," *Han-hsüeh yen-chiu* 漢學研究 8.2 (1990), esp. pp. 91–92.

<sup>142</sup> For a family tree (based on Yano Chikara 矢野主悅, *Gi Shin hyakkan seikei hyō* 魏晉百官世系表 [Tokyo: 1971], p. 96), see Goodman, "Exegetes," p. 453. Surviving records do not indicate that Shuang's sons took up his *I-ching* studies; one remark, though, indicates that a descendant, unnamed, of Shuang's nephew did. See Ch'en, "Confucian Magnate," pp. 73–75; idem, *Hsün Yüeh*, pp. 168–69, 172–73.

<sup>143</sup> Ch'en, *Hsün Yüeh*, pp. 7375; idem, "Confucian Magnate," p. 74; Goodman, "Exegetes," pp. 37–38.

<sup>144</sup> He hosted Liu Shao at his home (Liu proposed systematic inquiry into categories and methods of recognizing human talent); *SKC* 21, p. 617. He also patronized the career of Tu Chi (boat designer and grandfather of Tu Yü, famed scholar and hydraulic engineer who was key in the military success of the riverine invasion of Wu in 279), *SKC* 16, pp. 494–96; and he recommended Chung-ch'ang T'ung 仲長統 (d. 220) to Ts'ao Ts'ao (Chung-ch'ang wrote economic policy statements containing numerate notions of category and social planning, on which see Etienne Balazs, "Political Philosophy and Social Crisis at the End of the Han," in idem, *Chinese Civilization and Bureaucracy: Variations on a Theme*, ed. Arthur Wright, trans. Mary Wright [New Haven: Yale U. Press, 1964], pp. 187–225).

<sup>145</sup> Biogs. in *SKC* 10, pp. 319–20, comm. (citing "Chin Yang-ch'iu"); and *CS* 39, pp. 1150–52.

Wei, in 256, he had attended a scholarly entity called the Tung-t'ang (see above) – a neo-Tung-kuan established to further court scholarship. On one occasion, he and other scholars were feted there by the emperor, who engaged them in questions about the merits of ancient as well as Han-era rulers, a type of historical criticism typical of the Tung-kuan. Thus one sees a certain Tung-kuan ethos in Hsün I's career.

As the Ssu-ma-led court assembled and grew strong after 265, the Hsüns' home area of Ying-ch'uan could not have figured directly in the lives of Hsün Hsü and his distant cousin, but it did continue to provide contacts. Of importance were the Ying-ch'uan Chung 鐘 and Ch'en 陳 families. The former, made famous by Chung Yu 鍾繇 (b. ca. 163, d. 230) and his son Chung Hui 鍾會 (225–264), were experts in law, antiquarian objects, and calligraphy, and they became in-law relations of the Hsüns.<sup>146</sup> The Ch'ens, also generalist scholars, produced men who professed systematic logistics for personnel recruitment as well as astronomy, facts touched on, below. They steadily interlaced with the Hsüns and became in-law relations in Hsün I's branch, directly nurturing his career.<sup>147</sup> When Hsün I was about 30 or 35, records indicate that a scholarly debate occurred with Chung Hui about the *I-ching*. (As grand-nephew of Shuang and thus knowledgeable about *I-ching* systems of trigrams that changed by moving up and down, Hsün I thought that theories about so-called interlaced trigrams [*hu-t'i* 互體] were just as valid in *I-ching* systematics as trigrams that simply sat on top of or below each other.) Slightly later, in the early 250s, he was made part of a group to draft a Wei history 魏書,<sup>148</sup> and in the early 260s was classics explicator for the last Ts'ao ruler.

<sup>146</sup> On the Chungs, see Howard L. Goodman, "The Calligrapher Chung Yu (ca. 163–230) and the Demographics of a Myth," *JAO* 114.4 (1994), pp. 555–571; remarks on Chung Yu's role in the founding of Wei are in idem, *Ts'ao P'i Transcendent*, pp. 206–14. Also, see Chin Hsilai 靳喜來, "Ying-ch'uan san Chung" 穎川三鍾, *Kaifeng jiaoyu xueyuan xuebao* 開封教育學院學報 49 (1997), pp. 23–28.

<sup>147</sup> Goodman, "Exegetes," pp. 40–41; Hsün I's brother-in-law was Ch'en Ch'ün 群 (married to Hsün Yü's eldest sister), and Ch'en's son became I's associate. On Ch'ün's personnel logistics, see Miyazaki Ichisada 宮崎市定, *Kyūhin kanjin hō no kenkyū* 九品官人法繼研究 (Kyoto, 1956), and the assimilation of Miyazaki's findings in Dominik Declercq, *Writing Against the State: Political Rhetorics in Third and Fourth Century China* (Leiden: Brill, 1998), esp. chap. 4.

<sup>148</sup> This became known as Wang Ch'en's 王沈 (d. 266) "Wei-shu," made in conjunction with Hsün and Juan Chi 阮籍 (210–63). It was listed in *Sui-shu*, "Treatise on Literature," and extensively utilized by P'ei Sung-chih's commentary in the fifth century. But *Chin-shu's* biog. of Wang Ch'en criticizes the work as unfortunately subject to the shift in loyalties from Ts'ao to Ssu-mas, and its facts as handled poorly by pro-Ssu-ma scholars. See Wang Ch'en's biog. in *CS* 39, p. 1143; also Fairbank, "Ssu-ma I," pp. 52–54, who quotes Liu Chih-chi's poor opinion of the Wang/Hsün/Juan work. My chronology of I's life follows the implications given in his biog., *CS* 33, p. 1150.

There is no convenient evidence to show precisely why, in 272 or 273, Hsün I was chosen by the Chin court to “correct the music” for two ballets.<sup>149</sup> He was by then a strong factional ally of Ssu-ma Yen, the new emperor, and no doubt could lobby for his own appointments. Yet the intellectual society at large, the whole Cheng-shih 正始 era (about 240–260 AD) of experiment and anti-establishment attitudes, was well stocked with music experts. Hsün I was born ten or fifteen years before that Cheng-shih generation, which became known for “*hsüan* 玄,” or “mystery” (this being the so-called Neo-Taoism era). To understand the era, we need more studies like the insightful biography of Juan Chi 阮籍 (210–263) written by Donald Holzman in the 1970s: it leaves no intellectual aspect of a unique polydidact unexplored.<sup>150</sup> In an attempt merely to show avenues of thinking and debating at that time, I have blocked out a sampling of arts and skills, taking twenty-six experts who were born 215–33 (see the appended table). It should be a given that as China traversed a politically dangerous, and nationally weak, period from 180 to about 225, its rivulets of learning could not all have dried up. We should expect to find deep interest in court arts at any time in China: and court arts imply technical systems and politics – both bureaucratic and dynastic.

In fact, such interests show up strongly, even among the mysteriorosophists. I do not deny that many were curious about obscurantist hermeneutics, logical puzzles, taoistic (and other) metaphysics, as well as entertainments and artful withdrawals from office. However, in that time we also have experimenters and thinkers who possessed arts that would have been useful to courts. Nearly half of the twenty-six were thinkers in musicology or music aesthetics, or were instrumentalists: quite a strong ratio. And there seems to have been a trend among Loyang-oriented scholars toward a particular polymathic combination – Music, Design/Numeracy, and Antiquities (see the discussion following the table). We can deduce, then, that because the competition was so great the court chose Hsün I to correct the music because he was an outstanding expert. (As we see, below, in a review of Hsün Hsü’s career, open competition over musical arts occurred in the 270s and 280s.) Finally, it is worth noting that Hsün I and Hsün Hsü, though easily characterized as conservative Chin-court factionalists and rites-experts, had four things in common with the Cheng-shih world of Wang Pi and others, namely: *hsüan* texts (Hsün I’s theory about *I-ching*); Mu-

<sup>149</sup> CS 39, p. 1151.

<sup>150</sup> Donald Holzman, *Poetry and Politics: The Life and Works of Juan Chi A.D. 210–263* (Cambridge: Cambridge U. Press, 1976).

sic; Confucian learning; and Numeracy/Design. Not only that, several persons (see the table) constituted a hub that linked the Wang Pi ambit with that of the Hsüns; and the two Hsüns and Wang had all been members of Ts'ao Shuang's court as it struggled for power with the Ssu-mas and fell in the late-240s.

*Teaching Mastery, Not Mystery: The Ch'ens, Hsüns, and Chungs*

Hsün Hsü was orphaned early, and he became involved with and somewhat dependent on the Ying-ch'uan Chung family, with whom his Hsün-branch was linked by marriage, much as Hsün I was linked to the Ch'ens. The famous anti-Ssu-ma rebel Chung Hui, who would attempt to bring down the Ts'ao-Wei house in 264, was close with Hsün Hsü. The T'ang-era compiler of Hsü's biography quotes Chung Hui's father calling the boy Hsün Hsü a "future man of comprehensive learning 博學."<sup>151</sup> But did that mean only the Chinese background polydidactics, that is, one who studied different schools of interpretation and competing text traditions? Clearly not, as seen by listing Hsün Hsü's skills, all famously deployed in court tasks.

1. composition of court lyrics for ritual ballets, and his ideas about music prosody;<sup>152</sup>
2. creation of a project to find old music and metrical devices; this resulted in a reform of the rule-standard through textual research, comparisons and measure-taking of the found-objects, and finally fabricating a new rule-standard device;
3. use of the new metrics to determine that the tuning-pitch of the court orchestra was incorrect because it followed the pitch used by the former dynasts, the Ts'aos, and their music master;
4. training the court orchestra and mounting revised pieces to show off the new system, for which he was critically attacked by the musicologist Juan Hsien 阮咸 (fl. 250–75);<sup>153</sup>

<sup>151</sup> See "Hsün-shih chia-chuan" 荀氏家傳, as quoted in *TPYL* 385, p. 7b [1781A]; also paraphrased in the biog. of Hsün Hsü, *CS* 39, p. 1152. The relationship with Chung Hui is remarked upon in Goodman, "History of Wei-Chin Court Lyrics."

<sup>152</sup> See Howard L. Goodman, "Tinnabulations of Bells: Scoring-Prosody in Third-Century China and Its Relationship to Yüeh-fu Party Music," *JAOS* 126 (2006), forthcoming.

<sup>153</sup> Points 2–4 are covered in Goodman, "Retuning the Ts'aos." See esp. the following: Hsün's grandson's remark preserved in the commentary to *Shih-shuo hsün-yü* 世說新語 (Yang Yung 楊勇, annot., *Shih-shuo hsün-yü chiao-chien* 世說新語校箋 [Hong Kong: Ta-chung shu-chü, 1969], p. 530; trans. in Mather, *New Account*, pp. 357–58; Kan Pao's *Chin chi* 晉紀; quoted in *SSHY chiao-chien*, p. 530; (trans. Mather, *New Account*, p. 358) and version in *SgS* 11 ("Lü-li A), p. 219; on the new metric standard, see *SS* 16, p. 403 (also Ch'iu Kuang-ming 丘光明, gen. ed., *Chung-kuo li-tai tu-liang-heng k'ao* 中國歷代度量衡考 [Peking: K'o-hsüeh ch'u-p'an she, 1992], pp. 60–67); on Juan Hsien's criticism of Hsün, see the 4th-c. remarks quoted in *SSHY chiao-chien*, p. 530 (trans. Mather, *New Account*, p. 358).

5. creation of a set of *ti*-flute 笛 cast-metal pitch-regulators, helped by an aged, former Wei-court flute specialist; the result was intended to make flute ensembles better in tune as they shifted modes;<sup>154</sup>
6. devising a system for archival organization (the “four-categories 四部”), and a design template for his facsimile production team to use in transcribing newly discovered Chi Tomb bamboo texts;<sup>155</sup>
7. a system of annotating, and, as Edward Shaughnessy has proposed, instituting the *kan-chih* counters in place of certain Chi Tomb texts’ old-fashion reign-name calendrics; also, he professed a theory of historiographical organization that impacted contemporary decisions about where actually to start the history of the Chin dynasty.<sup>156</sup>

If my appended table shows us anything at all reliable, then Hsün’s polymathy was typical of a certain polymathic set during the Wei-Chin era – Music, Numeracy/Design, and Antiquities. Further, not only is there no evidence of Hsün’s writing anything on the Taoist or Confucian classics, also, his court lyrics tended not to invoke taoistic sentiments when other court-lyric writers did so in the same contexts.<sup>157</sup> We have no firm evidence that Hsün made computations in his metrological work, but conceivably he figured out ratios based on traditional numerical categories, or perhaps true computations were done by artisan-helpers. His non-Taoist bent demonstrates that he was not a particularly Ma Jung, Chu Mu, or Ts’ai Yung type of Tung-kuan polymath. Furthermore, Hsün’s court career was entrenched in a pro-empress faction, something that would have been anathema in that earlier political world. Yet, these aspects notwithstanding, I would argue that the Hsüns’ polymathy grew out of the Eastern Han Tung-kuan. Hsün Hsü used groups and called on lowly court artisans (some named and quoted in the sources) in offices not controlled by his own Imperial

<sup>154</sup> Examined in depth, Howard L. Goodman, “New Flutes for New Music: Hsün Hsü’s Metric and Tonal Reforms” (unpublished chapter); see the pertinent source, *SgS* 11 (“Lü-li” A), pp. 212–19; also Yang Yin-liu 楊蔭瀏, *Chung-kuo ku-tai yin-yueh shih-kang* 中國古代音樂史稿 (Peking: Jen-min yin-yueh ch’u-pan she, 1980) 1, pp. 166–72; and Wu Nan-hsün 吳南薰, *Lü-hsüeh hui-t’ung* 律學會通 (Peking: K’o-hsüeh ch’u-pan-she, 1964), p. 123.

<sup>155</sup> *SS* 32, p. 906. See Hsieh Cho-hua 謝灼華, gen. ed., *Chung-kuo t’u-shu shih yü Chung-kuo t’u-shu-kuan shih* 中國圖書史與中國圖書館史 (Wuhan: Hu-pei sheng kao-teng hsüeh-hsiao shu-kuan kung-tso wei-yuan hui and Wuhan ta-hsüeh t’u-shu ch’ing-pao hsüeh-yuan, 1985), pp. 88–89; and Drège, *Les bibliothèques en Chine*, pp. 25–26, 108–12.

<sup>156</sup> I rely on Edward Shaughnessy, *Rewriting Early Chinese Texts* (Albany: State U. of New York P., 2006), chap. 4, esp. p. 255, n. 124. The author has sifted the orthographic variations in the medieval redactions of our extant “Bamboo Annals” (*Chu-shu chi-nien* 竹書紀年) and identifies basically two source-editions: quotations found in Li Tao-yüan’s 酈道元 (d. 527) *Shui-ching chu* 水經注 and quotations in 8th-c. Ssu-ma Chen’s commentary to *Shih-chi*. The former reflects the work on the bamboo slip-texts that was performed by Hsün Hsü and his team in the early-280s. For Hsün Hsü and contemporary debates on the way to divide Chin history, see *CS* 40, p. 1173; touched on in Fairbank, “Ssu-ma I,” pp. 72–80.

<sup>157</sup> This point is brought out in Goodman, “Wei-Chin Court Lyrics.”

Library, and he used found ancient devices as baselines for reforming court rites; he saw that his dicta and interactions with artisans were recorded. He was an impassioned and busy scholar, and crossed bureaucratic boundaries. He used antiquarian proofs to issue positivist judgments about the illegitimacy of the fallen Wei dynasty merely for its musicological mistakes.

There was also a direct social route that specialized arts followed, finally arriving at the Hsün family. We saw, in our study of the early Tung-kuan, that mathematics and physical modeling had begun to develop strongly in the first century, indirectly aided by the work of Pan Ku 班固 and his sister, but then more acutely inspired by Chang Heng and Chia K'uei 賈逵.<sup>158</sup> Technical knowledge in computing, mathematics, astronomy, calligraphy, philology, and painting would become a polymathic style in the Tung-kuan. With the exception of Ma Jung and Cheng Hsüan, who taught hundreds privately, Tung-kuan scholars alive by about 190 had failed to train new polymaths, and, moreover, court missions were at a standstill. In my view, the rites continued to lose their hold on the Cheng-shih generation, even though the skills remained in the population. But this seemed to be changing again, especially with the tragic execution of Chi K'ang in 262. It signaled that the Ssu-mas were pushing for a break with the Cheng-shih culture of learning. Perhaps responding to this political reality, the Hsüns revived certain technical arts within their family.

The Hsün family, not known for mathematical computing or astronomy, but greatly interested nonetheless in music and *I-ching*, developed a metier in systematics and arts that we may call oracle-text numerology 讖緯/圖讖. Oracles and omens touched the interests of the early Tung-kuan scholars, including Ts'ai Yung and his associate Han Yüeh.<sup>159</sup> Also, sometime in the 180s or 190s, Chang Hao 張顛, having been shown an ancient golden seal that had been magically disgorged from an omen-bird, stored the object in the archives, and later, when he was a collator in the Tung-kuan, he wrote about it.<sup>160</sup> Ts'ao Pao (see above) and his father were expert in the oracle-texts, and in the rites. In 87 AD, this Ts'ao had been associated with Pan Ku in a rites

<sup>158</sup> For Chia's engagement with contemporary technicians, see Cullen, *Astronomy and Mathematics*, pp. 55-59.

<sup>159</sup> See *HHS*, "Lü-li B," pp. 3038-40 (for Han, see n. 83, above). On Ts'ai Yung and oracle-texts, see Dull, "Historical Introduction to the Apocryphal (ch'an-wei) Texts," pp. 402-3.

<sup>160</sup> *HHS* 8, p. 341; but only *TPYL* used the phrase "Tung-kuan" when it recorded the same event; see *ch.* 201, sect. "Feng-chien, 4," p. 5b: "搜神記"曰:張顛為梁相。天新雨後,有鳥如山鵲飛翔,墮地,市人摘之,隨地化為石。顛椎破之,得一金印,文曰忠孝侯,顛藏之秘府。後校書東觀,奏言曰: "堯、舜時,朝有此官。今落印,宜可復置。"

compilation linked with the Tung-kuan. We learn that he specifically used oracle-texts as precedents and sources for the rites.<sup>161</sup>

Another stream of oracle-text, cum antiquities, expertise came from Fan Ying 樊英 (d. 130+), one of whose specialties was the *I-ching* systematics of the Han-era Ching Fang.<sup>162</sup> Fan specialized in the oracle-texts, many of which carried numerological statements and pseudo-computations concerning historical and political cycles of cosmic and dynastic fates, often linked by computative arrays of numbers.<sup>163</sup> He was particularly known for his mantic predictions. Fan's student was Ch'en Shih 陳寔 (104-187),<sup>164</sup> who maintained a close relationship with Hsün Shu – forming that inter-family coterie already mentioned, and with Ts'ai Yung. Hsün and Ch'en both studied Fan Ying's teachings, and Hsün Shu's son Hsün Shuang wrote his own sort of treatise on oracle-texts the contents of which are, however, lost. During the 170-300 AD period, Hsün and Ch'en descendants cropped up in these contexts: discussions on astronomical empiricism, methods of teaching, music performance and tonal systematics, and, as mentioned above, Hsün Yü was a friend of several polymaths who propounded a variety of logistical systems, some numerate. Ch'en Shih was the father of Ch'en Chi 陳紀, whose famous book "Ch'en-tzu" 陳子 ranged into arts and techniques (possibly including astronomy) and was edited in turn by his son Ch'ün 陳群, who raised points in the 230s concerning observational astronomy and analytic systems of personnel recruitment.<sup>165</sup> In the case of the Hsüns, I do not think that their skills developed randomly, but in fact were a conscious urge to effect leadership and gain offices. All three of these Ying-ch'uan families mastered, variously, *I-ching* matrices of change, oracle-text numerology, the Tung-kuan polymathic set, and were linked to one teacher – Fan Ying.

<sup>161</sup> See n. 44, above.

<sup>162</sup> See Dull, "Historical Introduction to the Apocryphal (ch'an-wei) Texts"; Goodman, "Exegetes," pp. 168-76, which utilizes Dull and makes further analyses; and Kao, *Liang Han I hsüeh shih*, pp. 138-61. See Fan's biog. in *HHS*, "Fang-shu" 82A, pp. 2721-24.

<sup>163</sup> Goodman, *Ts'ao P'i Transcendent*, pp. 27-32, 231-33, summarizes the origins, types, and political uses of these writings, proposing a genre-name "political oracle-texts"; also, Csikszentmihalyi, "Traditional Taxonomies," pp. 81-101. See also Ku, *Ch'in Han te fang-shih yü ju-sheng*; one of his points is that of a rise of the "Ju" over the "Pai-chia": the *ju* parlayed a basic instinct for controlling "old" appurtenances and forms into what eventually was by the time of Han Wu-ti a national system of elite intellectual control; see his chap. 9.

<sup>164</sup> See Fan's biog. (n. 162, above), where mention of Ch'en is on p. 2724.

<sup>165</sup> Ch'en's astronomical idea is given in *CS* 17 ("Lü-li" B), pp. 498-99; also *HCHS* 6, pp. 141-42. Ts'ai wrote a funeral stele for him, but its text says nothing of numerate arts, except praise for Ch'en as someone who "contained in himself the harmony of the primal essence 含元精之和" and "resonated with the reckoned cycles 應期運之數"; Asselin, "Significant Season," pp. 545-46.

Hsün Hsü's career came to a bitter end: use of personnel outside his purview and forceful pronouncements about his corrected Chin musical rites drew ire. In 283, Chih Yü 摯虞 (b. ca. 250, d. 311), a scholar interested in various aspects of natural philosophy, was given an ancient foot-rule device discovered during building and repair work after a flood in Loyang that year.<sup>166</sup> Hsün Hsü had had a hand in directing and overseeing that recovery work, and Chih now took this occasion to criticize Hsün's new metrological standards. In addition, some years before, Chih had already made public his negative opinion on the rites compilation of Hsün I. After Hsün Hsü's death in 289, Chih Yü would become head of the Imperial Library.<sup>167</sup>

This was only part of a larger anti-Hsün wave that emerged since about 282. He had touched a nerve concerning the systematizing and editing of the Chi Tomb texts; this was what inspired peers in central government to challenge him. Scholars like Tu Yü 杜預 (222–284), Chang Hua, and Shu Hsi, were part of the reaction. Tu came back rather late to Loyang after his successes in the field of battle against Wu, and turned all his attention to finishing an influential commentary on *Ch'un-chiu* and *Tso-chuan*. In the process, he examined the Chi Tomb texts, remarking on how poorly the ancient books were being interpreted and transcribed, and even cared for. Tu was pointing to Hsün's Imperial Library group.<sup>168</sup> The anxiety was echoed later, when Shu Hsi acquired responsibilities in the Imperial Library, as a drafter after 296. This was the very period of time during which he was given access to the Chi Tomb texts, probably as part of Chang's attempt to revisit the problem of the editing process. Shu now would make his own negative remarks about the work of arranging and interpreting the found texts.<sup>169</sup>

Distrust and censure, aimed, as well, at Hsün Hsü's factional stance against the Wu war and his support of the empress Chia's family, found their political target. In 287 the emperor kicked Hsün Hsü upstairs: Hsün was removed from control of the Imperial Library. With that he became depressed. While in his sullen state, acquaintances came to congratulate him for the seeming promotion, but Hsü said angrily, "They've stolen my Phoenix Pool!"<sup>170</sup> If, just as with early-modern

<sup>166</sup> From biog. of Chih Yü, which contains Chih's essay on the natural history of measure and standards; *CS* 51, p. 1425; *HCHS* 6, pp. 139–40; also, *CS* 51, p. 1418, for Chih Yü as a disciple of the physician Huang-fu Mi.

<sup>167</sup> *HCHS* 6, pp. 127–28.

<sup>168</sup> *HCHS* 7, p. 136; also Shaughnessy, *Rewriting*, chap. 3.

<sup>169</sup> Shu Hsi's biog., *CS* 51, pp. 1432–34.

<sup>170</sup> *CS* 39, p. 1157. The "Phoenix Pool 鳳凰池" was part of the resplendent architecture of the inner imperial city, and referred to one's access to the riches and archives of the palace

Europe, scholars, priests, or courtiers anywhere could exhibit tension over the formulating of history or the role of evidence in proving history,<sup>171</sup> then in early China it was not that scholars rejected objects and antiquarian collecting (nor the close observations that one could perform), but that, like Heraclitus, they despised polymaths who seemed solipsistic or mechanized in their approach to knowledge. Hsün, already overbearing and factionally incorrect, had intruded on formal, traditional ways of historiography that others were not so sure should be quickly changed.

#### TECHNICAL SKILL-SETS IN A LATER CONTEXT

Despite all his troubles, Hsün Hsü actually contributed to a minor revolution. His archival systematization was a hit, eliciting exponents and revisers like Wang Chien (mentioned earlier) and Juan Hsiao-hsü 阮孝緒 (479–536).<sup>172</sup> His renown as antiquarian metrologist, chronologist, and musicologist grew into centuries of lore. But not least were the extremely useful texts produced when his office transcribed thousands of works in the imperial collections: the transcriptions were seen and utilized by scholars for a long time. Collections and libraries benefited, so that at the beginning of Sui (589–618), the court could promote all manner of “rites and music” research, and receive a solid response from scholars.

We learn fascinating details about the technical arts during the 400s and 500s from a Taoist polymath of the T’ang court named Li Ch’un-

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area; in other contexts it could refer to the office of Palace Writers. But there was a wider context as well: during T’ang, it was a name for grand councilor and was also a cliché for gardens of high officials. Since Hsün had already passed through the post as head of the Palace Writers years ago, and had made huge strides with the resources of the Imperial Library, I believe that this flexible metaphor applies to his loss of those resources. See references given in Xiaoshan Yang, “Li Deyu’s Pingquan Villa: Forming an Emblem from the Tang to the Song,” *AM* 3d ser. 17.2 (2004), p. 73, n. 113.

<sup>171</sup> See Arnaldo Momigliano, “Ancient History and the Antiquarian,” in idem, *Contributo alla storia degli studi classica* (orig. article pub. 1950; Rome: Edizioni di storia e letteratura, 1955), pp. 71–73, 84.

<sup>172</sup> Wang’s revision is mentioned in Li Shan’s 李善 (d. 689) *Wen-hsüan* commentary to the preface to Wang’s collected writings; *Liu-ch’en Wen-hsüan chu* 六臣文選註 (SPTK, ch’u-pien) 46, p. 32b. On Juan, see Alan Berkowitz, *Patterns of Disengagement: The Practice and Portrayal of Reclusion in Early Medieval China* (Stanford: Stanford U. Press, 2000), pp. 184–86; and, re. his bibliographic research, see Drège, *Les bibliothèques en Chine*, pp. 33–34. Juan’s preface to his “Ch’i lüeh 七略,” as carried in *Kuang hung-ming chi* 廣弘明集 (SPPY edn.) 3, pp. 5a–6b, says that huge losses were incurred in the court’s archive when the Western Chin collapsed in 314 (claiming about ten percent were saved in the move southward). Juan further states that the structure of Hsün’s *Chung-ching* was emended first in the 470s and then in following centuries, under officials of the Imperial Library who increased its size and split up and added categories (such as those on mathematics and Buddhist works).

feng 李淳風 (602–670). Aside from court-commissioned historiographer, Li was a mathematician: he created one of the dynasty's major ephemerides and collated a valuable (still extant) edition of early works in solving for unknowns and determining areas and volumes.<sup>173</sup> From his Treatise on Tonal and Celestial Systematics that became part of *Sui-shu*, we easily see his comprehensive knowledge of the sources of metrology, for example, mathematical commentaries including that of Tsu Ch'ung-chih 祖沖之 (429–500), the Hsün Hsü-edited Bamboo Annals, a technical treatise (ca. 510s) of the Liang court titled “Chung lü wei” 鍾律緯 (with antiquarian notes comparing and measuring dozens of devices, including the Hsün Hsü standard-rule, which Tsu may once have possessed), and records of a Chou-court debate (ca. 578–79) on metrology that was guided by Niu Hung and included various groups of researchers. Not stopping at just text sources, Li categorized material objects that he may have handled or for which he had illustrations: tubal and bell regulators, jade pipes, and standard-measures made from cast bronze, jade, or water-drip devices. He numbered them one to fifteen, with some having more than one exemplar, and gave anecdotes and extracts to explain the antiquarian problems behind the categorization.<sup>174</sup>

Li also gave us a judgment of historical metrology that exculpated Hsün Hsü (as mentioned, the latter's tonal practices and metrology were attacked by Juan Hsien). Modern surveys of metrology merely lay out the metrics associated with Hsün and the categories created by Li, without examining the latter's finely crafted judgment,<sup>175</sup> a relevant passage of which is as follows:

[Hsün] Hsü is removed [from us] by a thousand lifetimes; and he computed the specifications of hundreds of ruling courts 推百代之法. [His] measure-unit computations were apt 度數既直; [his] sonorities were consonant and also tallied [with his computations]. It might be said that [such findings] were accurate 可謂切密; they were credible and had proofs 信而有徵也. But people of [his] time

<sup>173</sup> This is *Suan-ching shih-shu* 算經十書; annot. Ch'ien Pao-ts'ung 錢寶琮 (Peking: Chung-hua, 1963). See remarks on Li in Denis Twitchett, *The Writing of Official History under the T'ang* (Cambridge: Cambridge U.P., 1992), p. 10; and Yang Lien-sheng, “Notes on the Economic History of the Chin Dynasty,” *HJAS* 9.2 (1946), p. 111. Although Twitchett mentions that Li was a well-known Taoist, I have not investigated exactly how that was manifested.

<sup>174</sup> *SS* 16, “Lü-li A,” pp. 402–8; these categories included the quotation of the text of a colophon inscription cast into Hsün's new standard-rule; see *SS* 16, p. 403. For a note on Li's sources, see Donald Blackmore Wagner, “Doubts concerning the Attribution of Lui [sic] Hui's Commentary on the *Chiu-chang suan-shu*,” *Acta Orientalia* 39 (1978), pp. 210–12.

<sup>175</sup> See, e.g., Ch'iu Kuang-ming and Lung Yang-p'ing 隆楊平, *Chung-kuo k'o-hsüeh chi-shu shih* 中國科學技術史 (Peking: K'o-hsüeh ch'u-pan she, 2001), pp. 305–17.

(i.e., Juan Hsien and similar critics) lacked knowledge 而時人寡識, and based [their opinions] on one single foot-rule that could not be provenanced. They were careless about two [other found] devices, of Chou and Han-era dates, which have been judged as exactly matched. How could they have been so ridiculous?!<sup>176</sup>

Wearing his mathematician's hat, Li was simply irked about antiquarian gossipers who had not grasped measure, computation, and constructions, as Hsün Hsü seemingly had. Moreover, Li's research brought Hsün's polymathy into one package, and his reputation back into relevance, fully aware of the damning lore that had fettered him.

Li Ch'un-feng was working not only as a scholar within internal problems of art and privately derived views, he also worked within a state-run research, education, and testing system. For the important tasks of compiling both past and contemporary histories, the early-T'ang court used the previous Sui (but actually Eastern Han) institutional name "Imperial Library Palace Division," the offices of which may have been placed in an area, and had functions, that corresponded with those of the Tung-kuan of Eastern Han times. In 630, though, a specialized Historiography Office was created, exhibiting even the same sort of bureaucratic confusion that the Eastern Han suffered, trying to set up and distinguish the differences between history-writing offices (Tung-kuan/ Historiography Office) and the constructs that supported imperial libraries (Pi-shu chien, archives, scholarly colleges).<sup>177</sup> In the process, T'ang officials reused that intimate connection between historiographers and the imperial family, keeping history writing intramural and in imperial proximity.

T'ang officialdom, after centuries of bureaucratic revising, was actually beginning to understand the sort of polymathic striving that we saw in third- through sixth-century scholars and the dynastic courts. It therefore instituted examinations in ritual, the standard histories, and the Taoist classics, as well as the usual generalist examinations in the Confucian classics and literature. Moreover, specialized examination topics were added: detailed aspects of the legal code and statutes, calligraphy (which encompassed epigraphy and etymology, and involved

<sup>176</sup> *CS* 16, "Lü-li" A, subsect. "Examination of Metrological Standards 審度," p. 491. A complete translation of Li's remarks will be published in Goodman, "Retuning the Ts'ao's." Li's judgment of historical metrology is in some sense a summary of the longer, detailed categorization written earlier, for his *SS* treatise (see n. 174, above). Wagner, "Doubts," p. 201, first noticed the prioritization.

<sup>177</sup> William Hung, "The T'ang Bureau of Historiography before 708," *HJAS* 23 (1960-61), pp. 93-98.

antiquarian study of the stone-engraved classics completed in the 230s), and mathematics. The last three – law, calligraphy, and mathematics – were even accorded their own schools at certain times of the dynasty, although there were numerous changes in location: for a while they moved away from the State Academy, where generalist, “pure officials” might imbibe skills, to the working offices, where skill instruction was integrated into technical apprenticeship, and then back again. It would seem, in Denis Twitchett’s opinion, that polymathic skills were relatively highly regarded early in the dynasty, but then fell to a low ebb under the empress Wu, who stressed general moral bearing, wide reading, and deep knowledge of the *Tao Te ching*. Liu Chih-chi himself was somewhat unsure of the usefulness of most types of technical treatise that normally were attached to Standard Histories.<sup>178</sup>

#### CONCLUSION

There is a cultural dividing line between, on one hand, holist (pansemiotic) polymathy, cum polydidactics, and, on the other, encyclopedic or systemized skills meant to describe causal and/or hierarchical orderings and change in nature and human history. In the West and in China, countless scholars and educated leaders pursued studies to polish their souls and minds, and to firm their social place. Yet at some other level, or time-period, learneds would try to see all, and to create tools for seeing all.

A Western example of the dividing line is the late-Republican Roman thinker and writer Lucretius (ca. 90–ca. 50 BC). Through him we gain a certain parallel with the Tung-kuan ethos of early China. Lucretius was on a rough social and political par with such influential men as Cicero and Memmius.<sup>179</sup> His major work on Greek atomism, *de Rerum*

<sup>178</sup> On the changes in the skills schools and waning of polymathy, see Denis Twitchett, “*Chen gui* and Other Works Attributed to Empress Wu Zetian,” *AM* 3d ser. 16.1 (2003), pp. 70–71, 100–1; Robert des Rotours, *Le traité des examens* (Paris: 1932), pp. 34–35; idem, *Traité des fonctionnaires et de l’armée* (Leiden: Brill, 1947–48); and Twitchett, “The Bureaucracy” (1985?), draft of an unpub. chap. that the author kindly made available to me. On Liu’s opinion, see E. G. Pulleyblank, “Chinese Historical Criticism: Liu Chih-chi and Ssu-ma Kuang,” in W. G. Beasley and E. G. Pulleyblank, eds., *Historians of China and Japan* (Oxford: Oxford U.P., 1961), pp. 145–47; David McMullen, *State and Scholars in Tang China* (Cambridge: Cambridge U.P., 1988), p. 168; Twitchett, *Writing of Official History*, p. 87. Ironically it was probably Liu Chih-chi’s eldest son Liu K’uang (b. ca. 685) who wrote the proto-treatise on music technics that became part of *Chiu Tang shu*. K’uang was skilled in classics, astronomy, calendar, medicine, and music; *ibid.*, p. 217.

<sup>179</sup> See Cyril Bailey, trans. and ed., *Titus Lucreti Cari: de Rerum Natura* (Oxford: Oxford U.P., 1947) 1, pp. 6–14; and D. W. Roller, “Gaius Memmius: Patron of Lucretius,” *Classical Philology* 65.4 (1970).

*Natura*, shows that polymathy is not only about mastering a natural philosophy. It could also bring synergies into older cosmological or metaphysical notions, and thus produce satisfying psychological insights or even political rallying calls. In short, polymathy could be a vehicle for the soft-sciences, as it were, that developed within text traditions.

Lucretius stood upon centuries of readers and exegetes some of whom went beyond translation and gloss. The two greatest of early atomists were Greeks – Democritus and Epicurus, and the latter’s teachings had gone through revivals over the centuries. Epicurean atomism, making its largest impact as lifestyle cults and calls to social freedom,<sup>180</sup> curiously enough also afforded later, Alexandrian, experimenters some useful categories and proposals about the way real stuff in nature works.<sup>181</sup> In Alexandria, Epicurean thought developed not just in terms of texts and legends (the lore of Epicurus the cult leader, the problems of state versus *hortulus*), but importantly in terms of physical experiments on the way smallest particles move and change in the void. Thus, the Alexandrians seem more familiar to us in their application of mathematics, measure, and mechanics.<sup>182</sup>

*De Rerum Natura* rendered the by-then ancient Greek tradition of atomism into something Roman and new by its literary framework. Lucretius wrapped his Epicureanism in hexameter verse and this helped bring it to a political head. Epicurean physics now came to public consciousness as a guide to life, not as Alexandrian plumbers building tubes and boxes for experiments with vacuums. One might say that Lucretius clinched Epicureanism through the soft-sciences; he represents the erudite scholar as *poeta doctus*, Westerhoff’s take on polydidacts who taught about universal connections through belles-lettres.<sup>183</sup> Lucretius’s commitment to an older social vision gave natural philosophy, written in verse, a role in the last gasp of Republican political legitimacy among a group of statemen. His notion of *voluntas* mirrored the Republican

<sup>180</sup> See Bernard Frischer, *The Sculpted Word: Epicureanism and Philosophical Recruitment in Ancient Greece* (Berkeley: U. of California P., 1982).

<sup>181</sup> See G. E. R. Lloyd, *Greek Science after Aristotle* (New York, 1973), pp. 21–22, 30–32; S. Sambursky, *The Physical World of the Greeks*, trans. M. Dagut (New York, 1962), chap. 5; and Cyril Bailey, *The Greek Atomists and Epicurus* (Oxford: Oxford U.P., 1928).

<sup>182</sup> These experimenters were men like Straton (ca. 330s–ca. 270 BC), who wrote and experimented about the void, and Ktesebios (ca. 300–230 BC), who invented pumps and hydraulic drives. See H. B. Gottschalk’s biog. of Straton in Charles Coulston Gillispie, editor-in-chief, *Dictionary of Scientific Biography* (New York: Scribner, 1970–) 13, pp. 91 ff; Lloyd, *Greek Science*, pp. 15–20; and A. G. Drachmann, *Ktesebios, Philon, and Heron: A Study in Ancient Pneumatics* (Copenhagen, 1948).

<sup>183</sup> See n. 7, above.

equite's will to govern and to perceive "human progress... [It was] an invitation to work and fight for high ideals."<sup>184</sup>

In late-Han China, it was not one tradition of natural philosophy that men like Chu Mu, Ma Jung, and Ts'ai Yung pursued. It was a complex with tricky names – a "repository of Mr. Lao," escape from distaff factions at court, the *I-ching*, correcting past and present courts through computed music harmonics. Yet in some sense the goal was similar, namely, to rally like-minded men of letters to assert their knowledge and their politics. We see a fascinating difference between the ancient East and West: in China the chance to make a mark as a polymath was directly inside the court and its closely-held resources (notably Ts'ai Yung, Hsün Hsü), or indirectly at court (the three scholars Chu, Ma, and Ts'ai all kept one foot on the inside and one on the outside), or else among those who desired a place at court (Kuan Lu and Chang Heng, an elite court scholar, but one who was blocked from the Tung-kuan). In Lucretius's Rome, one established polymathy privately and did not have to seek access from the Senate or from Caesar's clique, in order to compound one's skills. In Rome, men could contact artisans privately, in the marketplaces. In China, artisans that we know of, men with skills and hidden resources were abundant in the imperial offices. Early Chinese art history has given examples of contact between scholars and painter-sculptors at the local level, but for computing, astronomy, music harmonics, and metrology, the lowly masters and unknown vademecums were tucked away in palace stores.

From Pan Ku to Ts'ai Yung, we saw Lucretian attempts, as it were, to put natural-philosophy worldviews of "Mr. Lao" and the Tung-kuan into prose (the technical treatises attached to official compilations) and into rhapsodies, for example, Chang Heng's "Contemplating the Cosmos." But while Lucretius's peers probably sensed atomism's distinct history of Alexandrian mechanics and ancient theoretics, and that Lucretius was asking them to take atomism to the moral level, Chang and other Tung-kuan polymaths were a new sort of scholar. They were approaching sciences and rites (or, the arts and sciences needed for the rites) from attitudes and methods that had no pedigree. The case of Hsün Hsü shows that, in addition, the new synergies that he offered via

<sup>184</sup> See Arnaldo Momigliano, review article, *Journal of Roman Studies* 31 (1941), pp. 155–56, who suggests that the Epicurean milieu was inspired by Lucretius's *de Rerum* to turn anti-imperialist just after Lucretius's death. See also P. Grimal, "L'epicurisme romain," in *Association Guillaume Budé: Actes du VIIIe Congrès* (Paris: 1968), p. 159, who, unlike Momigliano, places Lucretius indirectly in Caesar's entourage. Cicero had close ties with Epicureans, who represented not merely a variety of local cults, but connections to learned urban coteries; in fact Cassius swore an oath to Epicureanism in 46 BC.

measure, music, and historiography were in some sense held suspect. Hsün operated without benefit of a Tung-kuan, but also without benefit of acceptance into the circles of belles-lettrist calligraphers and poets, clusters that fostered opposition to his work. Hsün's lack of any stylish taoistic flourish and his complete devotion to measuring, improving ensemble sounds, and designing devices made him an outsider. Chang Heng could not get into the old Tung-kuan and Hsün was forced out of the new Tung-kuan – the Imperial Library.

I have already mentioned the work of Chang K'o-li. His study of Eastern Chin polymathy (termed “多種文藝”) is structured in a way that will repay a brief comparison with my own study. One factor is that it is a different polymathy altogether. My study reveals a polymathy that few scholars have paid attention to. Besides the famous fine-arts field there existed, probably since mid-Eastern Han, clusters of discussion and exchange in antiquities, metrology, musicology, *I-ching* systems, healing, divination, and mechanics. An area of future research might be to look closely at Chang Heng and Ts'ai Yung, since they each moved in circles of technicians and in Chang's and Knechtges's circles of fine-arts. At least we should be asking the question of every scholar, or expert, “what else was he a master of and why”? In general, the presence of subtle synergies also demands such questions as, “can metaphysics (for example, the cosmic holism of *I-ching*) click into mathematics? Or, how might graphics and design have supported breakthroughs in algorithms for determining volumes?”<sup>185</sup> These sorts of linkage are what will make polymathy of continuing interest to cultural historians.

Chang's four extended families (the Lang-ye Wang 琅邪王, Kao-p'ing Hsi 高平鄒, Ying-ch'uan Yü 潁川庾, and Ch'en-chün Hsieh 陳郡謝) are meticulously charted, with genealogies and tables, like mine, below, that show arrays of arts (with music not fleshed out as fully as I would have liked). He is right to discuss weightings: how many individuals showed mastery of more than two arts, and in what combinations, since he ultimately is looking for synergies.<sup>186</sup> The synergies he identifies are chiefly those between calligraphy and painting, and between writing and painting, and, again correctly, he discusses a background noise – in this case the shared background of belles-lettres.<sup>187</sup> Chang sees these

<sup>185</sup> See Karine Chemla's suggestions about a possible role for demonstration and physical modeling in early Chinese mathematics; “Theoretical Aspects of the Chinese Algorithmic Tradition (First to Third Century),” *International Journal of the History of Science Society of Japan* 42 (1991), pp. 75–98; and idem, “Résonance entre démonstration et procédure: Remarques sur le commentaire de Liu Hui (III<sup>e</sup> siècle) aux *Neufs Chapitres sur les Procédures Mathématiques* (I<sup>er</sup> siècle),” *Extrême-Orient, Extrême-Occident* 14 (1992), pp. 91–129.

<sup>186</sup> Chang, *Tung Chin wen-i*, pp. 272–74.

<sup>187</sup> *Ibid.*, pp. 288–92, 295–96.

families' social positions, their freedom as aristocrat-refugees, and the economic stability and prosperity of the south at that time as catalysts for creative outbursts in calligraphy and landscape painting.<sup>188</sup>

Like my study, David Knechtges's has shown the political and social pressures behind important groups of polymaths in the 170s, with a focus on court institutions and court scholars. His study is valuable for delineating entrenched prejudices against technical arts, even those exhibited by respected belles-lettrists like Ts'ai Yung who, paradoxically, were themselves technical men. Chang stays within his four families. His argument is that the families fostered over time, from the end of Han to Eastern Chin, the rise of a new polymathy and its creative breakthroughs explained partly by social conditions. I am less than convinced of reductionist arguments about social conditions for creativity; and he may be criticized, too, for not distancing himself from the circularity of relying on later catalogs and later snap judgments of critics so as to define who was a breakthrough polymath and who not. His discussions of the material elements of brush-work and line-drawing are far more convincing, and important.<sup>189</sup> But, once again, his study and mine both suffer from skewing: Chang's is the skill-set fostered by belles-lettrists; mine is one that the belles-lettrists were unsure of – the less cultured one. Synergy and interplay of skills, and ultimately the interplay between even the large groups, that is, between fine arts and technical arts, holds promise for future study, although I believe that we should also recognize prejudices and blocks that may have kept certain synergies from occurring.

In sum, the 100–300 time period was the bedrock of a new polymathy. It helped to form Cheng-shih scholarship, Hsün Hsü's breakthrough in antiquarian research, and the structures by which the later T'ang state could support polymathy again in the 600s and 700s. From 100–300, deepening interests in antique sources and authorities, as well as new linkages among music, *I-ching*, and design and numeracy, fostered later technics. At the center of this was the Tung-kuan, which, after it ended, acted as an ideal that fostered similar skills among private families. It was clear to scholars of about 250 AD that the whole range of Confucian and Taoist scriptures would soon be completely covered by high-quality commentaries, and thus new synergies emerged,

<sup>188</sup> Ibid., pp. 266–71. See also Yü Ying-ch'un 于迎春, "Tung Han hou-ch'i ching-shu yü ts'ai-i te ch'ung-t'u chi Hung-tu men hsüeh te i-i" 東漢後期經術與才藝的衝突及鴻都門學的意義, *Chiang-hai hsüeh-k'an* (1997.2), p. 168.

<sup>189</sup> Chang, *Tung Chin wen-i*, p. 290.

especially various combinations of those four areas, just mentioned. Hsün's flutes and reforms of ensemble music are a prime example of creative breakthrough.

We see in all this a way to apply methods of the history of science to early Chinese history, something that should be urged forward in order to enrich our picture of scholarship, the court and its rites, and the lives of social and political leaders. For example, Ts'ai Yung and Hsün Hsü both brought into their ambit craftsmen from low court offices for the distinct purpose of polymathic programs of testing and precise constructions. They engaged in those things while also fostering written records of their activities. Bruno Latour and other insightful describers of what science "does" might, if we could introduce them to these sources and get them involved in very premodern times, call the activities socially contexted science moments. We are expanding our horizons when we look more at China's skills and arts, and the knotty problems underlying the word "science." In the early Chinese case, we no longer ought to hesitate in calling a research program a research program. The outcomes were sometimes for astronomical constants, for example, which look modernly scientific to us; but just as legitimately, we must pay attention to those who strove to set the aural center of the court at the right pitch, or to correlate *I-ching* permutative signs with the language of birds.

#### LIST OF ABBREVIATIONS

<i>Bureaucracy</i>	Hans Bielenstein, <i>The Bureaucracy of Han Times</i>
CS	<i>Chin shu</i> 晉書
CSKW	Yen K'o-chün 嚴可均, <i>Ch'üan San-kuo wen</i> 全三國文
HCHS	Liu Ju-lin 劉汝霖, <i>Han Chin hsüeh-shu pien-nien</i> 漢晉學術 編年
HHS	<i>Hou Han-shu</i> 後漢書
SCC	Joseph Needham and Wang Ling, <i>Science and Civilisation in China</i> , vol. 3
SKHY	Yang Chen 楊晨, <i>San-kuo hui-yao</i> 三國會要
SgS	<i>Sung shu</i> 宋書
SS	<i>Sui-shu</i> 隋書
TPYL	<i>T'ai-p'ing yü-lan</i> 太平御覽
WX	David R. Knechtges, trans., <i>Wen xuan: Or Selections of Re- fined Literature</i>

*Appendix: Table of 26 Cheng-shih Era Scholars, Experts, Technicians (All Born 215–233 AD)*

Grouped by Broad Regions and by Association with Either Wang Pi or Hsün Hsü

	BORN	HSÜAN TOPICS (incl. I.C.)	CONF. COMM.	MUSIC RITES	NUMGY DESIGN	NAT. PHIL.	ANTIQ	DIV	REL.
<i>Outside Loyang and the north</i>									
Chao Ta 趙達	215-20				•			•	
Ch'en Hsün 陳訓	215-20				•			•	
Wang Fan 王蕃	228				•	•		?	
Hsi Cheng 郤正 Moved to Loyang, w/o further fame.	215-20						?		
[Ch'en Shou, below] Moved to Loyang, with strong career there.									
<i>Loyang and north</i>									
Ch'un-yü Chih 淳于智	230				•			•	
Liu Hui 劉徽	215-20				•		•		
Huang-fu Mi 皇甫謐	215	•		•		•			
* Hsiang Hsiu 向秀	220	••							
* Chi K'ang 嵇康	223 II	••	•	•	•	•	?		?
* Juan Hun 阮渾	225-30	•							
<i>Loyang, Wang Pi's ambit</i>									
Chung Hui 鍾會	225 II	••				•			
Hsün Jung 荀融	215	•							
Wang Ch'en 王沈	222								
Wang Pi 王弼	226 II	••	•	•	•				

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	BORN	HSÜAN TOPICS (incl. I.C.)	CONF. COMM.	MUSIC RITES	NUMCY DESIGN	NAT. PHIL.	ANTIQ	DIV	REL
<i>Loyang, in Hsün Hsü's ambit</i>									
Hsün Hsü 荀勗	<b>224</b>			•	•		•		?
* Juan Hsien 阮咸	<b>228-34</b>	•		•	•	•	•		
Chia Ch'ung 賈充	<b>217</b>			•					
Fu Hsüan 傅玄	<b>217</b>			•	•				
Ch'eng-kung Sui 成公綏	<b>231</b>			•					
Chang Hua 張華	<b>232</b>			•	•		•		
Wei Kuan 衛瓘	<b>220</b>	•					•		
<i>P'ei Hsiu</i> 裴秀	<b>224</b>	•		•	•				
Tu Yü 杜預	<b>222</b>		•	•	•		•		
Ying Chen 應貞	<b>215-20</b>	•		•	•				
Ch'en Shou 陳壽	<b>233</b>								
Yang Hu 羊祜	<b>221</b>								

KEY:

**Bold-face** in "Born" col.: year of birth is known; others are calculated estimates.

**Bold-italics** in left col.: person placeable in both Wang's and Hsün's ambits, i.e., was a link.

- Contributed to the category: a writing, model, strong opinion, an action.
- under "Hsüan topics": debated/wrote about *both* a Taoist and *I-ching* topic.
- || short lifespan.
- \* associated with the Seven Sages of the Bamboo Grove.
- ? questionable contribution to category.

The table examines 26 experts, technicians, and/or scholars all born 215-233 (birth-dates in normal type are estimates). This is not a true data pool (see below). The purpose is to indicate interests and synergies, as Cheng-shih persons matured around 235-55. This era has been characterized (even as early as the 300s) as one of "Mystery Learning." Historians emphasize rites-flaunting and free living, as typified by the Seven Sages of the Bamboo Grove, new types of essay, music lyric, and poetry; also a time when Confucian classics were read in taoistic terms (see my discussion, above, which defines aspects of pre-300 "Taoism"). By showing groupings in the Cheng-shih era as well as types of skill, I am exploring something untried: treating polymathy as an important facet of Cheng-shih intellectual culture. We ought to move beyond characterizations of these scholars as engaged in self-cultivation, refusals, fashionable arts, drinking and bon mots. We need to see experts who possessed important skills that dated back two centuries.

A certain conceit guided the creation of the table, namely, that we can pose new questions by imagining just how close Wang Pi, a famous blender of Taoist and Confucian “mysteries” in his commentaries, and Hsün Hsü were to each other, based on indirect evidence. It seems that they were socially (and undoubtedly locally) close, but intellectually apart. No mention is made of actual interaction. Wang died unusually young, and thus we have another “what if”: would Wang post-249 have emerged from the taint of association with the Ts’ao court, which became an icon of bad last-dynasts? We must remember that Wang was not liked by Ts’ao Shuang; he did not get advancement and was not executed in relation to Ts’ao Shuang’s fall in 249, but died in an epidemic. What directions did Wang Pi’s so-called taoistic views run in? Were they eremitic, musical, drunken? If he had lived, would he have sought to recapture Tung-kuan attitudes, or approaches to polymathy and politics? Would he have moved close to the Hsüns, who shared large areas of concern in court and private music? On the other side, how to explain Hsün Hsü’s lack of solid output in belles-lettres and Confucian commentaries? Does this indicate lack of interest or time, or accommodation to a new dynasty that discouraged certain taoistic attitudes and anti-ritualism? What does it all say about coteries and factions?

*The Table of Twenty-Six*

A thorough data pool, using available biographical information on absolutely anyone of skills (beyond merely “well read”), would yield far more subjects, perhaps 200 in the Cheng-shih generation. What I have collected is skewed from a statistical ideal, the subjects coming out of my own research interests.

1. An ongoing project discusses experts from about 170 to 300 AD who made computations and/or measure, expressed numeracy, or were masters of arts like design, mechanics, physical theory that we may call systematic. Forty-seven have been collected thus far, and about 10 of those are in this table because of their birth dates.

2. Earlier research captured over 50 *I-ching* debaters and writers active about 180–300, sorting by various types of *I-ching* activity (oral debate, entertainment, divination, healing) and genre (interlinear explanation, essay, phonetic gloss, etc.). Of those, 11 were from the Cheng-shih generation. They are easily seen by looking under the column “Hsüan 玄 Topics incl. *I-ching*.”

3. Another project is an ongoing study of political factions relevant to the life of Hsün Hsü. These Western Chin court groupings impacted assignments and work on the court rites, historiography, and the awarding of offices. The result of my project thus far has been 17 persons – some Chin-court leaders, some merely well-known scholars or experts. Thirteen turn out to have been of the Cheng-shih era (not counting Hsün himself, making fourteen).

Although this appendix is only lightly annotated, I have documented data about skills, relying chiefly on standard histories, Yen K’o-chün’s *Ch’üan Hou-Han, San-kuo* and, *Chin wen* (CHHW, GSKW, CCW); Chang Pu’s *Han Wei Liu-ch’ao pai san chia chi* 漢魏六朝百三家集; *T’ai-p’ing yü-lan* (TPYL) and other florilegia; Needham’s *Science and Civilisation in China*; Li Yen’s *Chung-kuo ku-tai shu-hsüeh shih-liao*; Juan Yuan’s *Ch’ou-jen chuan* 籌人傳; DeWoskin’s *Doctors, Diviners; Declercq, Writing Against the State*; and the indispensable *Han Chin hsüeh-shu pien-nien* (HCHS).

If the era was one of *hsüan*, then we want to see a visual cue in the table concerning the most famous of the so-called mystery texts: *Lao-tzu, Chuang-tzu, T’ai-hsüan*,

and *I-ching*, thus the “Hsüan Topics” column. The “Confucian Commentaries” are the scholars’ writings on the Five Classics (but *I-ching* moved over into “Hsüan”), the histories, *Lun-yü*, and the pre-Ch’in philosophers. I list “Music and Rites” together because they were frequently perceived as one and the same project, and did share certain skill components (metrology, stagings for imperial mourning, tuning). But music demanded special technics: devices and mechanics, computation, and prosodic systems. Since Music/Rites had their own traditional texts, thus occurrences in this category often were commentaries or new editions, but we must look for mechanical creations and philosophical overviews as well. Numeracy and Design as a category points sometimes to skills allied with music, and sometimes with astronomy, astrology, and even ritual architecture; numeracy was multi-branched, leading to *I-ching* (and other) figurations, calendric (and other) counting-matrices, numerology, computing, and examples of logistics using ratios; design could include graphics, painting, and any systematic theory about the forms and mechanics of calligraphy and other arts. Natural Philosophy points to scholars’ opinions on or study of systems like language and signs, the cosmos, the body and medicine. Such ideas were beginning to appear in genres like the essay (*lun*). Next, is Antiquities, which reflects study of found objects (including ancient texts) and curios/anomalies that scholars were collecting and using as authorities for divining and general taxonomies. Divination involved numerous systems, as discussed above, in the section on Kuan Lu. Religion indicates cult memorials and establishments, ancient mortuary rites that could possibly include beliefs and contact with hermits (Taoist or other), as well as the Buddhist translation centers and Taoist liturgical communities, and sympathies toward them.

Several invisible factors operate. One is the sort of generational lapse that indicates that a family did not pass its nexus of learning and arts to all sons, or that not all sons chose to use them in their careers. Thus some born 215–33 to highly skilled families do not show up in this table. For example, the important southern polymaths Lu Chi 陸續 (d. 227) and Yü Fan 虞翻 (d. 233), who devoted their lives to Confucian and Tao classics, divination, and mathematical astronomy and astrology, did not sire Cheng-shih-era experts. Wang Su 王肅 (195–256), the great Loyang court classicist, musicologist, and former student of the *T’ai-hsüan* scholar Sung Chung, had several sons: only one was learned and interested in rites reform (but no known writings) and his daughter was said by some to have more talent in the classics than her siblings. Other sons were interested in military careers – one, Wang K’ai, being a notoriously aggressive debauchee. My study also discussed the Ch’ens. The birth year of Ch’en Chün’s 陳群 (d. 236) son T’ai 泰 cannot be determined precisely: perhaps between 205–215; but in any event, despite his father’s expertise in seals, numerate logistics for personnel, and astronomy, T’ai’s only mark was in the military, with important campaigns under Ssu-ma Chao. Hsiahou Hsüan 夏侯玄 (d. 254) left writings on music (see *CSKW* 21, p. 7a), but there is no mention of polymathy or skills for his Cheng-shih-era offspring.

Further, there are skewed generations; and several lives were cut short. For example, none of the most powerful Ts’ao rulers and Ssu-mas was born in 215–33; also, Ho Shao, who, in the 270s and 80s was reading and collating family letters and prose collections of Cheng-shih men like the Hsuns, Wang Pi, Ho Yen, and Chung Hui in order to write their biographies, was born in 236 – nearly their peer, but too late for this study. Hua Chiao 華嶠 (b. ca. 235–40) was born too late as well. He was called upon by Hui-ti in the 290s to head archives, harmonics, and

astronomy. Too early were Kuan Lu, Juan Chi, Hsia-hou Hsüan, Hsün Ts'an, to name but some. Some who died early are famous: Wang Pi, Chung Hui, and Chi K'ang. It is worth noting that several of Wang's kin who descended from Wang Ts'an (and were thus potentially Cheng-shih-era men) were eradicated in a purge of rebels in 219. Historians deduce that Ts'an's famous library devolved to Wang Pi, but the Wang polymathy and access to high office was waning.

*Observations*

*Caveat re. polydidactics:* All these experts were literate and well-read. As discussed above in my article, behind polymathy lay polydidactics, by which most educated males of the administrative class strived for variety in reading, master-schools, and debate. With this in mind, the first two categories in the table (Hsüan themes and Confucian writings) might easily receive dots in all cells, but I have conceived occurrences as "creations" – a certain debate, a project, a writing.

*Wu and the end of a new polymathy:* Prior to the Cheng-shih generation in the south (where the Loyang debates and styles of classicism were less influential and often scorned) the K'uai-chi coterie led by Lu Chi and Yü Fan (see preceding paragraphs) developed a cluster of technical polymaths (Goodman, "Exegetes"; and Goodman, "Lives and Times of the Political Public"). In the Cheng-shih era, one of that coterie was Wang Fan (given a biog. in *Dictionary of Scientific Biography* 8, p. 419), who wrote on physical cosmography and worked on ephemerides; he was connected intellectually and socially to the Lus. Chao Ta, not part of the K'uai-chi group, used a computing device for some of his divinations, and there is yet another Wu-area diviner, Ch'en Hsün, among the 26. Yet we observe that in Wu we have no strong continuity in the Tung-kuan style learning that Yü Fan had represented – numerate skills, astrology/astronomy, *I-ching*, and written commentaries to *hsüan* and Confucian texts. It may be that that style flourished and died based solely on the will and/or opportunity to transmit it in the Lu and Yü families, indicating perhaps the sort of style change that Chang K'o-li analyzes. For the Shu area, after earlier Ch'eng-tu scholars like Li Chuan had traveled eastward to study at Ching-chou in about 190–200, and Ch'iao Chou had made his career as astrologer, historiographer, and antiquarian, we see only Hsi Cheng in this era: he collated texts as head of Shu's Imp. Library (see Declercq, *Writing Against the State*, chap. 3), making him perhaps something of an antiquarian.

*Shifting Classicism I, Hsüan and Confucian Genres:* Among the Cheng-shih (including the Wu and Shu areas) we see perhaps a fall-off in formal commentaries on the Confucian classics; note commentarial work registered only under Tu Yü and Chi K'ang (who, like Tu, produced a *Tso-chuan* writing); and note that Wang Pi's Confucian output, besides *I-ching*, was on *Lun-yü*, not on the so-called Han Five Classics. It may reflect the destruction of Eastern Han institutions, but also the taoistic sentiments of dissent and martyrdom that were fostered by the Tung-kuan, esp. after about 150–200, when Ma Jung and Cheng Hsüan had completed their Confucian commentaries. For *hsüan* texts and themes, we see 11 who produced any sort of discourse or commentary, but we have no examples of work on Yang Hsiung's *T'ai-hsüan*, which had been given a boost by both Sung Chung of the north, and Lu Chi of Wu (both born before Cheng-shih). Perhaps in the Cheng-shih period textual work on Taoist themes had moved over to *I-ching*, which is highly represented. We may see a trend among northerners to emphasize their mastery of both Taoist and Confucian "*hsüan*," as shown by the double dots among Wang Pi's group and also among the Bamboo Sages Chi and Hsiang.

Yet if *hsüan* was a project to be applied universally, it seems not to have touched the broad set of Confucian scriptures.

*Shifting Classicism II, Music:* Twelve of the Cheng-shih (almost half) were interested in rites and music, especially the latter (music preponderates in this column). Chia Ch'ung and Tu Yü wrote only on the "rites"; Huang-fu Mi, P'ei Hsiu, and the court-lyric writer Ying Chen (whose father was interested in songs) all produced both. Chang Hua, a court lyricist, was indirectly a rites specialist as well (a leading compiler and archivist of court documents), but no particular court work or writings on that subject is known. The same thing may be said of Hsün Hsü – court lyrics, computed and empirical harmonics, music devices, antiquities, orchestral direction, yet also very close to committee projects on the rites. Hsün famously clashed with the *p'i-p'a* expert and musicologist Juan Hsien, a Seven Sages associate. If Ts'ui Pao 崔豹 (fl. 290s) lived long and thus had been born ca. 225–35, then he would be a Cheng-shih expert in the music column: his *Ku-chin chu* includes a sect. on *yueh-fu*, one of the earliest expositions of the genre. I note, too, that the slightly older Juan Chi and Kuan Lu (his musical theories and orniphonics), would have been in this category.

Wang Pi's short biog. in *San-kuo chih chu* mentions that he traveled to parties and discussed music harmonics. This is a key fact: his distant cousin Wang Ts'an (d. 217), whose library he most likely possessed, was a well known lyricist and zitherist, and a skilled computer and mathematician, as had been his mentor Ts'ai Yung. Wang Pi included several passages about music in his Confucian text, *Lun-yü shih-i*, and in his *hsüan* text – *Lao-tzu chu* (see Rudolf Wagner, *Language, Ontology, and Political Philosophy in China* [Albany: SUNY Press, 2003], p. 9). One might say (based on Wagner's discussion) that Wang Pi's philosophy of music was contexted inside *Lao-tzu* concerns about getting to the reality of self-so and *wu* 無 that lay behind all appearances. But in the mundane world it means that Wang was a musicologist, and it reveals a certain polymathic set typical of the Seven Sages-plus-Wang Pi: Confucian and *hsüan* writings, and discoursing on music and *I-ching*. Wang seemingly did not take up the others' taoistic lifestyles.

Perhaps a stronger trend showing in the table is a polymathic set around "Music"/ "Numeracy-Design"/ "Antiquities." See the light-grey backgrounded occurrences marked in those three columns, moving from Wang Pi downward. Two things may be operating. One is that a change of classicist styles urged scholars to seek textual authorities in systematic arts like mathematical astronomy and numerology, and in ancient objects and orthographies. The other is functional: the destruction of the Tung-kuan needed to be overcome, and interest in antiquities and lost texts ratcheted up beginning about 230 or so, as Loyang was steadily being rebuilt and archives resurveyed. Wang Pi's writings contain occasional phrases that point to numerate notions (associated mostly with Taoist and Ten Wings passages, but some possibly referring to numerical problems associated with hexagram chance/permutation operations). This may be due again to the influence of Wang Ts'an. Hsün Hsü falls under the same music-numeracy-antiquities pattern, with a far more complete and positivist output, compared to that of Wang Pi. Hsün melded all three categories into his multi-pronged reform of court musicology, lyrics, and performance, constantly averring to measure, found devices, and metrological precision. Men like Tu and Chang, also keenly involved with antiquities (they and Hsün were all associated with the Chi Tomb discoveries, but neither was as expert in music as Hsün), would eventually challenge Hsün's

expertise and began the push leading to his bureaucratic downfall. Ch'eng-kung, Fu, and Juan Hsien, however, show another side – expertise in musical instruments, performance, and taoistic literary values that harked back to the Seven Sages style. Juan, one of the Seven Sages group, challenged Hsün Hsü concerning musicological agendas and techniques.

*Were there synergies among I-ching, divination, and math?* We observe that in the north we have two non-Tung-kuan, non-scholar specialists in technical arts – Ch'un-yü (whose skills included hemerology, talismans, and apotropaic spells) and Liu Hui, according to modern historians of mathematics a world-class innovator in quasi-algorithms, solutions for linear equations and fractional operations. Liu's career facts are limited to several phrases in the sources: his writing, though, suggests that he had studied various antique metrological devices, perhaps in the imperial stores, and thus I list him also as antiquarian. (Wagner, "Attribution of Lui [sic] Hui's Commentary," pp. 203–5, would somewhat disagree.) As mentioned just above, the K'uai-chi area was fostering positive, ongoing work in computing (for various arts including divination), astrology-astronomy, physical astronomy, and mathematics. In fact, besides the three southern experts here, I have researched nine other southern, strongly numerate and systematic thinkers who flourished outside this time; quite a few in fact are pegged to the K'uai-chi ambit and some even influenced by Liu Hung, the Tung-kuan mathematician of the 170s. We see in these facts something of a regional difference in style and polymathies. Of course diviners existed in the north (note Kuan Lu), but probably the 3d-c. historiographers simply would not have valued the lives of mundane, artisan diviners. We do see, however, what a cohort of northern scholar-experts was not doing: why were so many *I-ching* scholars not discussing the systems of divination or performing *I-ching* and other techniques of divination? why were there no Cheng-shih mathematician-scholars like Ts'ai Yung and Wang Ts'an?

*Conclusion: Hsün Hsü, Wang Pi, and Cheng-shih styles*

Hsün Hsü was culturally and socially close to Wang Pi. They were both well read and grew up in families imbued with scholarship, books, and agendas for gaining scholarly office (Wang's family relatively more declining). It is important that both had been involved in Ts'ao Shuang's clique, and that Chung Hui (an in-law, close associate of Hsün Hsü) and Hsün Jung (a kinsman) were strong social links between the two ambits. Hsün and Wang were involved with music. Wang probably had received influence from the late-Wang Ts'an's books, compositions, and renown as performer. But it was Hsün's extended family who were not only masters of *I-ching* and historiography, but along the way became masters of court music and harmonics, as discussed, above, concerning the family's history. Wang and Hsün differ in terms of taoistic and Confucian classicisms. Here Wang made an impact with his new approach to the commentarial genre; he folded older teachings (*Ten Wings*, *Chuang-tzu*, and *Tao Te ching*) into interlinear commentary, where they functioned as axiomatic frames of reference. Hsün, however, produced no exegeses, except only citations and quotations from *I-ching*, *Chou-li*, *Li-chi*, etc., mostly in relation to musicology. Related to this is the fact that Hsün seems also to have been a polymath who, while somewhat influenced by the Tung-kuan model (he surely discussed and absorbed from his cousin, who had been a "Tung-t'ang" scholar in Wei times), made arts serve career and knowledge in a new way. He gave no leeway to the Seven Sages style, nor did he foster the older spirit of non-compliance and dissent that we saw in the Tung-kuan greats,

something that Wang Pi in fact had exhibited.

The Cheng-shih period, based on this analysis, would appear to have actually been the kind of shift of classicist values that early and modern historiography both emphasize. What is new here, however, is that Wang Pi's learning and arts were indirectly rather close to the Seven Sages polymathy and to the Tung-kuan polymathy. He made a mark by melding *hsüan* and Confucianism through textual genres. To have pursued court-legitimizing rites like pitch-standards, metrics, and systematic archiving for the Imperial Library, as Hsün would do, was for Wang and others out of the question politically, even though it seems that Wang may have been on a path that fostered such arts. The Cheng-shih court was fractured and scholars not interested in much besides staying alive and staging private meetings about the classics. For Hsün Hsü, with the imperial stores and libraries becoming available to experts, court-based and faction-based research was appropriate and not necessarily disingenuous, that is to say, politically appreciated work did not mean that the work was *not* integral to historic problems pondered for decades by scholars, craftsmen, and other experts.

Hsün Hsü's sensibilities, too, may be seen as vaguely resembling those of the Seven Sages. He contributed notions about a new sort of musical prosody, and wrote lyrics for the court and edited lyrics for non-court private enjoyment (Goodman, "Wei-Chin Court Lyrics" and "Tintinnabulations.") A remark in a 6th-c. work of fable and geography, *Lo-yang ch'ieh-lan chi*, mentions that Hsün once had a bodhisattva statue cast and installed in his Loyang mansion. It quotes the inscribed colophon, thus affording a patina of truth (I would tend to believe that an inscribed statue showing some sort of sages was made for Hsün). We might speculate that he thought about spiritual values, as had Chi K'ang (and the slightly earlier Juan Chi). One cannot judge Hsün as the antithesis of the Bamboo Sages; nor can one say that he would have found Wang Pi's scholarship inferior or mistaken. The routes to arts and power had shifted from private parties and family archives to a reconstituted court, brimming with activity. Scholarly polymathy in official tasks was now *de rigueur*; and exegeses on *hsüan* and Confucian texts were coming to a certain closure by the time of Tu Yü's Old Text-style commentary on *Tso-chuan*.