
The Woman Who Invented Notepaper: Towards a Comparative Historiography of Paper and Print

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Abstract

Comparative writing about the history of science and technology in different cultures tends to assume that differences in the ways in which these cultures write their histories are not important. But this is unlikely to be the case. The comparative lack of historical writing about printing in China by European standards should not in itself lead us to conclude that print only played a minor role there, any more than the tendency to downplay the importance of paper among historians of the European book means that its use in Europe was less significant than in other cultures. That in China the relative balance of the historical record is the opposite of the one that we tend to assume on the basis of the European experience is demonstrated here by contrasting the dearth of information about early printing with the commemoration even of relatively marginal cultural figures through the traditional Chinese historiography of paper making. But only tentative suggestions can be made as to why these differences in historical writing may have occurred.

Although the comparative approach to the study of history may have ancient roots, as a fully reflective exercise it is plainly a modern phenomenon. That human societies across the planet differ widely was something broadly appreciated long before the rise of modern anthropology; that the records of other societies, where these existed, might be used to trace difference over time, was only apprehended much more sporadically. It was, for example, only in the sixteenth century that Montaigne was able to speak of China “whose Histories teach me, how much more ample and divers the World is, than eyther we or our forefathers could ever enter into”, to quote John Florio’s translation.¹ As far as concerns the history of technology and science, moreover, the consideration of China in a comparative context cannot be said to have been pursued with much vigour until the time of Joseph Needham (1900–1993) in the second half of the twentieth century.

It should not be surprising therefore that the extent of reflections on either the methodological or even simply the practical problems of comparison raised by the Chinese case do not appear to have attracted much comment so far. It is possible to perceive already, though, that such problems will in all likelihood vary from context to context.

¹John Florio (trans.), *Montaigne’s Essays*, Everyman Library edition, Volume Three, Chapter XIII (London and New York, 1910), p. 330. E-mail: tb2@soas.ac.uk

An overall comparison of Greek and Chinese science and medicine, for example, has already been achieved fairly straightforwardly, without unduly lengthy consideration of possible methodological pitfalls.² Yet at a later historical stage, in the area of comparative astronomy, the problems of comparison have by contrast been seen as fraught with unresolved philosophical issues.³ The following remarks concern a period in between antiquity and modernity, and are confined to the area of the comparative history of information technology. Even within that area no attempt is made to comment on the technologies of organising information, even though on this score a comparison of, say, Cassiodorus with his Chinese contemporaries would no doubt be instructive. Rather, the focus is on the underlying ‘hardware’, in short, the technologies of paper and printing, and the problem of comparison addressed is that of the impact of different historiographies. Hitherto, with one notable exception to be dealt with very shortly, the assumption seems always to have been that the differing historiographies of China, Europe, and elsewhere have had no impact on our comparative understanding, and have therefore not been worth mentioning. But a tentative attempt at writing about the emergence of Chinese printing in a comparative vein have persuaded me that this cannot be the case, that the appearance of paper and print in the different sources bequeathed by different cultures cannot be presumed to have been unaffected by the different perceptions of the cultural values of the technologies in question.⁴

The one clear exception to this generalisation known to me is the recent work of Jonathan M. Bloom on paper in the Islamic world. In introducing his topic Bloom comments explicitly on the way in which Western histories have tended to allow the story of print to overshadow that of paper, mentioning specifically Henri-Jean Martin for giving “relatively short shrift” to the latter in his 1994 *History and Power of Writing*.⁵ In fairness to that scholar, even a generation earlier the co-written *The Coming of the Book* finds him stating plainly that printing would have been “impossible” without the introduction of paper, since only the very best and most expensive vellum can be used in a printing press. Yet the entire section on paper in that study is included under the title of “Preliminaries”, plainly implying the subordination in importance of the advent of paper to the invention of printing.⁶ Even in the twenty-first century it still seems possible to describe the history of the book without mentioning at all the spread of papermaking from Islamic lands into Europe as a precondition for the success of printing.⁷ Elsewhere too there is certainly some evidence that

²Geoffrey Lloyd and Nathan Sivin, *The Way and the Word: Science and Medicine in Early China and Greece* (New Haven and London, 2002), pp. 6–9, dispose of the overall problems of comparison with regard to the project pursued in their study with admirable succinctness.

³Robert S. Cohen, “The problem of 19(k)”, *Journal of Chinese Philosophy* 1.1 (1973), pp. 103–117: the reference is to a section of Needham’s work on the application of mathematics to science which impinges on the notion of the Scientific Revolution in Europe, an implicitly comparative topic that has, atypically but understandably, excited considerable debate.

⁴T. H. Barrett, *The Woman Who Discovered Printing* (New Haven and London, 2008). What follows expands upon some questions already raised in that work, and so is obliged to refer back to it.

⁵Jonathan M. Bloom, *Paper before Print: The History and Impact of Paper in the Islamic World* (New Haven and London, 2001), p. 2; cf. p. 227 on the existing scholarship on the history of paper – this study was first published in French in 1988.

⁶Lucien Febvre and Henri-Jean Martin, *The Coming of the Book* (London, 1997), p. 30 – this work was first published in French in 1958.

⁷This would appear to be the case for example in Simon Eliot and Jonathan Rose (eds.), *A Companion to the History of the Book* (Oxford, 2007).

the historiography of printing assumed triumphal overtones in times past that perhaps have not been entirely superseded.⁸ No doubt the high capital costs of Gutenberg's letterpress system necessitated vigorous marketing of its advantages right from the start.⁹ Though it might take a considerable effort to demonstrate the fact incontrovertibly, there are at least some *prima facie* grounds for the suspicion that the relative importance assumed in Western historiography by printing in comparison to paper represents no more than a cultural bias, an outcome of Eurocentrism, rather than the outcome of a self-evident truth. If, then, as will be suggested below, the historiography of these technologies in China was somewhat different, we should not therefore automatically assume that Chinese civilisation showed thereby evidence of any general inability to appreciate the benefits of technological change. In fact, as P. F. Kornicki has astutely pointed out, the lack of mention of early printing elsewhere in East Asia is even more astonishing than the few paltry references that do occur in Chinese sources, but since I am not well placed to estimate the importance of Chinese historiography outside China versus other local factors, the following discussion does not venture into these other territories, despite the possible benefits of doing so.¹⁰

This, of course, is not to deny altogether that Chinese historiography might be used as evidence of differences in attitudes to technology, still less to suggest that it did not display biases of its own. Plainly different traditions of historiography potentially are likely to approach technology in different ways – and not necessarily consistently in the same way at that. But again there would seem to be very little discussion of alternative cultural values in relation to our sources on printing and paper save for in the research of Jonathan M. Bloom, who refers to Marshall G. S. Hodgson for the notion that medieval Muslim historians, focused more on the responsible acts of individuals, tend to ignore such matters as the introduction and diffusion of technology.¹¹ As is well known, Joseph Needham could occasionally make similarly sweeping generalisations about the 'Confucian' mindset of China's ruling elite – attitudes that he could have taken as applying to the legacy of Chinese historiography – but today all such broadly explanatory hypotheses look in retrospect rather 'Orientalistic'.¹² Needham was, however, to his credit well aware of the temptation to oversimplify the great diversity of what we term 'China', especially over the course of time.¹³ Here, in any case, the primary aim is simply to establish that the balance of information concerning paper and

⁸See, for example, the remarks on this tendency, p. 233, and also the mention on p. 235 of the "famous engraving of Jan van Schlay", in Rowan Watson, "On the Periphery: Printing in Europe in the 15th and Early 16th Centuries", in *The Art of the Book in China*, (eds.) Ming Wilson and Stacey Pearson (London, 2006), pp. 233–250.

⁹Thus Lotte Hellinga on p. 207 of "The Gutenberg Revolutions", in Eliot and Rose (eds.), *History of the Book*, pp. 207–219.

¹⁰P. F. Kornicki, in review of T. H. Barrett, *The Woman Who Discovered Printing*, *Journal of the Royal Asiatic Society*, Third Series, 19 (2009), pp. 275–276.

¹¹Bloom, *Paper Before Printing*, p. x.

¹²For some remarks of this sort culled from Needham's writing via their abridgment by Colin Ronan, see Barrett, *The Woman Who Discovered Printing*, pp. 134–135. Since the time of Edward Said a convenient way of characterising English-language writing on Asia has existed that must make us reconsider much earlier work. Clearly, though, there is much more to the presuppositions embodied in Needham's work than can be simply dismissed as outdated 'Orientalism', whether one agrees with them or not. It would be wrong to neglect, for example, the considerable importance of Marxism in the construction of Needham's thought, especially the key conception of 'bureaucratic feudalism': see, for a succinct summary, Timothy Brook, "The Sinology of Joseph Needham", *Modern China* 22.3 (July 1996), pp. 340–348.

¹³For one such cautionary footnote see p. 306, n. 2, in his "Science and China's Influence on the World", in *The Legacy of China*, (ed.) Raymond Dawson (Oxford, 1964), pp. 234–308.

printing in Chinese sources is not that which might be expected by those only familiar with Western materials; any hypotheses to account for this state of affairs that can be ventured at this stage – whether through appeals to the larger cultural environment or not – must remain extremely tentative.

There is probably no better place to start any comparative account of the historiography of these inventions than with the well-known observation of Francis Bacon in his *Novum Organum* of 1620 concerning “the force and virtue and consequence of discoveries” that Needham himself takes as the starting point of his discussion of the contributions of China to the world: “These are to be seen nowhere more conspicuously than in those three which were unknown to the ancients, and of which the origin, though recent, is obscure and inglorious; namely, printing, gunpowder, and the magnet”.¹⁴ The immediate point made by Needham is of course that all three of these discoveries were made in China before Europe, but as the list stands even so the observation that all three of these discoveries had obscure origins is still essentially correct: in the case of printing and gunpowder at least we know much more now even than when Needham cited Bacon’s words over a generation ago, yet any precise information on the origins of these inventions still eludes us, and probably (barring unforeseen archaeological discoveries) always will, given the nature of our transmitted sources.¹⁵ This remains true even though some Chinese historians of printing, and those who follow them uncritically, have despite the caution of more careful scholars persisted in putting forward the year 636 as the earliest recorded date for a printed book, even though this is only found for the first time in a sixteenth-century history of the period of no particular documentary value.¹⁶ In fact the Chinese researcher Cao Zhi 曹之 has already rehearsed in great detail a number of reasons for concluding that this reference can only be the result of a careless error rather than the genuine transmission of reliable information.¹⁷

In retrospect, however, it must be said that Bacon’s omission of paper from his list, even if due to no more than what we now call Eurocentrism, was certainly appropriate. He could legitimately have substituted it for his mention of printing, for had his gaze carried even as far as Eastern Europe, he might have noted that the Ottoman empire, without the substantial use of printing but with paper and his other two inventions, still constituted a formidable enemy, and indeed it would remain so for at least a century after his time – though this is not to say that the eventual introduction of printing in Islamic areas did not bring about considerable changes.¹⁸ But in some ways it does not fit in the list anyhow, except by virtue

¹⁴This is the reference that may be found in Needham, “Science and China’s Influence”, p. 242, quoting Bacon’s Aphorism 129 in Book One of that work.

¹⁵For an update on printing, see Barrett, *The Woman Who Discovered Printing*; for gunpowder and explosives and firearms, see the summary in Peter A. Lorge, *The Asian Military Revolution: From Gunpowder to the Bomb* (Cambridge, 2008), pp. 32–44; I do not know of any recent work on the compass.

¹⁶This has for example been repeated most recently in English on p. 15 of Li Ying, “The Origin of Printing in China”, *Ultrabold 2* (Spring 2007), pp. 12–17. In all fairness, the scholar who first popularised this date was also responsible for a major milestone in the study of Chinese printing, so one can understand why even the latest version of his work, first published in 1958, clings to what is in this case an ultimately unsupportable source: see Zhang Xiumin 張秀民, revised by Han Qi 韓琦, *Zhongguo yinshua shi* 中國印刷史 (Hangzhou, 2006), p. 9, though this now also cites the (widely shared) reservations of Hu Shi 胡適 on the date on p. 10.

¹⁷Cao Zhi, *Zhongguo yinshuashu de qi yuan* 中國印刷術的起源 (Wuchang, 1994), pp. 21–22, 298–306.

¹⁸On paper and on the slow progress of printing in the Ottoman Empire, see e.g. Bloom, *Paper Before Print*, pp. 205–206, 216–224; on the eventual impact of print, see Francis Robinson, “Technology and Religious Change: Islam and the Impact of Print”, *Modern Asian Studies* 27.1 (1993), pp. 229–251.

of being Chinese in origin. For it is both far older than his three items – a product of antiquity, albeit East Asian antiquity, rather than of subsequent ages – and above all a product well documented from rather close to the start of its development, with a named inventor and even an exact and credible date for the promulgation of his invention.

Recent archaeology tells us that some forms of paper existed in the third century BCE, though just as the potsherds used in ancient Greece to record names for potential ostracism and other purposes derived from what had been pottery containers, so in such early times paper may have been used more frequently as a wrapping material than as a writing material.¹⁹ Even so, the date of 105 CE when Cai Lun 蔡倫 is recorded as having presented an improved form of paper for writing to the throne remains significant.²⁰ Cai Lun was, after all, a palace eunuch, precisely the sort of person normally viewed with antagonism by the regular bureaucrats who controlled the writing of official (and even most unofficial) history: one notes that despite the bias of these historians against recording the activities of women also, biographies of empresses may be found in almost all the ‘Standard Dynastic Histories’ officially recognised in imperial China, and biographies of eminent women more often than not, whereas eunuch biographies occur in significantly less than half of them.²¹ True, his invention is not recorded under the year 105 in later annalistic histories like the fourth-century *Hou Han ji* 後漢紀 or the famous eleventh-century *Zizhi tongjian* 資治通鑑 and its derivatives.²² But he is listed in the early encyclopaedia of origins, the eleventh-century *Shiwu jiyuan* 事物紀原, which suggests no names at all for Bacon’s other inventions.²³

And in any case our sources make it abundantly clear that paper was something much appreciated by those who made use of it to transmit their writings to us. By the end of the second century, for example, a famous historian lets us know that he had planned his compilation of the chronicles of the dynasty from the start on paper.²⁴ Authors seeking to address posterity of course acted on their own account, unlike government scribes, and therefore usually would have had to pay for writing materials, so the lower price of paper by comparison with silk must have been a factor, and though in the mid-second century we find writers apologising for using the cheaper material, such hesitations do not appear to have persisted.²⁵ There are no signs of regret from China’s literati at the advent of paper; rather, it made possible for them a new era of freer self-expression in poetry, painting and calligraphy. Where one finds opposition is not from the cultural creators but from the lower ranks of the literate, among the scribes accustomed to toiling over the earlier cheap alternative to silk: thin wooden strips that could take but one or two columns of carefully written characters each. This material was certainly cheap, and in an age before deforestation readily available,

¹⁹These discoveries are now summarised in the second edition of Tsuen-hsuei Tsien, *Written on Bamboo and Silk: The Beginnings of Chinese Books and Inscriptions* (Chicago and London, 2004), pp. 146–148.

²⁰The sources on this episode, including one dating back to the second century CE itself, are translated in Tsien, *Bamboo and Silk*, pp. 148–150.

²¹Note the chart in Yu-shan Han, *Elements of Chinese Historiography* (Hollywood, CA., 1955), p. 203.

²²For these works, see e.g. *ibid.*, pp. 162, 50 ff.

²³Gao Cheng 高承, *Shiwu jiyuan* 8 (Beijing, 1989), p. 424: on this source see Ssu-yü Teng and Knight Biggerstaff, *An Annotated Bibliography of Chinese Reference Works*, Third Edition (Cambridge, MA., 1971), p. 102.

²⁴See Chi-yun Chen, *Hsün Yüeh: The Life and Reflections of an early Medieval Confucian* (Cambridge, 1975), p. 84, concerning the composition of the *Han ji* 漢紀 in 198.

²⁵Tsien, *Bamboo and Silk*, p. 150, quoting an author who died in 143 CE.

which is perhaps why its use persisted in Japan for centuries longer.²⁶ Perhaps the scribal preference for the late Han dynasty equivalent of ‘hard copy’ was also influenced by the readily erasable nature of records on wood, unlike ink on paper, or maybe administrative (usually fiscal) files were suited to the steady accumulation of short passages of text.²⁷ But by about 400 CE even these clerks had been induced by government reforms to move on to using paper instead.²⁸

The close relationship between the use of paper and China’s cultural elite in fact means that during the Tang dynasty too, when printing appears to have been gaining ground, it is always easier to find out about the use of paper than it is of print. One clear case of this is in the surviving sources concerning the great Buddhist thinker Fazang 法藏 (643–712). Some of his writings strongly imply that he was familiar with the process of printing, which is why it has been suggested that he could have been involved in printing programmes on behalf of the Emperor-Empress Wu Zetian 武則天 (625–705).²⁹ But though Fazang could well have been familiar with printing off woodblocks, there is some reason to believe that he could also have known of a large seal containing 210 characters, and the use of this device might equally have prompted his observations about how complex structures like those within language and those which he wishes to argue for within the enlightened mind can come into being instantaneously.

In fact the short text in question, described as a ‘seal’ of ‘oceanic’ (i.e. vast) significance, *haiyin* 海印, has not been treated by exegetes as a physical object, since within Buddhism the word ‘seal’ is predominantly metaphorical, signifying ‘mark’ or ‘characteristic’. As Joerg Plassen has shown, there is also some discussion as to whether it was composed by Fazang’s teacher or by his fellow-student under that teacher, the Korean monk Ūisang 義湘 (625–702), with whom Fazang is known to have kept in touch after his return to Korea.³⁰ But the arrangement of the text into a compact rectangle of fourteen characters by fifteen, with the sequence of seven-character lines of verse wound around into a complex maze so that the first word, ‘dharma’, is adjacent to the last word, ‘Buddha’, does seem to be due to the Korean monk. There is also a tenth-century tradition that Uisang amazed his teacher by ‘drawing a red seal on top of the black characters’ 於黑字上畫赤印 to show his understanding of his master’s message.³¹ This, and other later references to a “single vermilion stroke” collected by Plassen could be construed as indicating the cutting of the 210 characters upon a single surface so that the single application of red ink to the whole could reproduce them at a stroke. This would be consistent with references to “no distinction between before

²⁶Joan Piggott, *The Emergence of Japanese Kingship* (Stanford, 1997), pp. 301–303, show how manuscript written upon this medium remains important there for the historian until almost a millennium after Cai Lun.

²⁷The former factor is noted in Christopher Leigh Connery, *Writing and Authority in Early Imperial China* (Lanham, MD., 1998), p. 65; I know of no research that might prove or disprove that the nature of the files themselves favoured compilation from wood strips.

²⁸See n. 26 on pp. 181–182 of William G. Crowell, “Northern Émigrés and the Problem of Census Registration”, in Albert E. Dien (ed.), *State and Society in Early Medieval China* (Stanford, 1991), pp. 171–209.

²⁹See for example Barrett, *The Woman who Discovered Printing*, Chapter Seven; Jinhua Chen, *Philosopher, Practitioner, Politician: The Many Lives of Fazang (643–712)* (Leiden and Boston, 2007), pp. 199–213.

³⁰On these doubts, see Joerg Plassen, “Some remarks on the authorship of the *Ilſŭng pŏpkyedo*”, in *Reflecting Mirrors: Perspectives on Huayan Buddhism*, (ed.) Imre Hamar (Wiesbaden, 2007), pp. 261–280. On the friendship between the two fellow-students, see Antonino Forte, *A Jewel in Indra’s Net* (Kyoto, 2000), which translates some of their correspondence.

³¹Plassen, “Authorship”, p. 269.

and after” in Üisong’s commentary on the verses, for this is precisely the way in which Fazang describes instantaneity when invoking the metaphor of imprinting – or printing.³² For ultimately there is nothing to show in this or other contemporary religious works that employ such metaphors when the author envisages a seal, and when a printing block. By contrast it is quite clear that Fazang was familiar with the details of paper production, since he refers to it in his writings more than once, as Jinhua Chen has demonstrated.³³

It may be that the exact method of mechanical reproduction of text envisaged by Fazang is not too important. We know that seals bearing very large numbers of characters were used at this time for imprinting. We also know that in the seventh century reproduction of text by taking impressions onto paper off irregular surfaces, the practice known in English as taking rubbings, typically used for making copies of inscriptions on stone steles, was also well established. This was somewhat slow – I have timed the completion of such a copy at the ‘Forest of Steles’ museum in Xi’an at 45 minutes – but this shows that even reproducing an unwieldy, fixed vertical surface allowed for a form of mass production, and it would not have taken much reflection to see that short texts on lighter horizontal blocks made of wood could be multiplied much more quickly, yet would overcome the practical size limitation on hand-held stamps. The most recent work on such rubbings notes two intriguing facts: first, that the government department charged with making such copies was closed from 663 to 705, precisely the time when Wu Zetian held power, and secondly that in 649 a Chinese envoy to India had retrieved, by means of a rubbing, an impression of the Buddha’s footprint.³⁴ Is it possible that this success in transmitting what was in religious terms a very important form of the Buddha’s presence on paper suggested that the three palace employees taking impressions off stones might be better employed creating short religious texts, which possessed like efficacy?

As with all too many of the activities of the Emperor/Empress, the hostility of contemporary and later male historians to her unique usurpation of a position of power otherwise reserved exclusively throughout Chinese history by males means that we are left guessing from scraps of information that seldom build up into incontrovertible proof which, as far as concerns printing and Wu Zetian, leaves us with strong suspicions well worth voicing, but no more. Yet in the case of an innovation in the production of paper about a century or so later, our sources make it quite clear that a woman was responsible, and a woman who under no circumstances would have been accorded a biography in the Standard Histories along with the very small minority of empresses and other women of very high status who were commemorated in this way. Xue Tao 薛濤 (c. 768–831) was a courtesan, a woman who maintained her independence by working as a professional entertainer whose company was appreciated by high officials at gatherings in which wives were not expected

³²For a translation of the text of the commentary that contains this passage, see Steve Odin, *Process Metaphysics and Hua-yen Buddhism* (Albany, 1982), p. 211 – this study reproduces the arrangement of the 210 characters on its cover and within on p. xxi.

³³Chen, *Philosopher, Practitioner, Politician*, pp. 213–216.

³⁴Kenneth Starr, *Black Tigers: A Grammar of Chinese Rubbings* (Seattle, 2008), pp. 17–18, citing *Tang liudian* 唐六典, 8, and the diary of the Japanese monk Ennin 圓仁 for the second day of the seventh month of 840. I very much regret that this fine study was not available to me at the time of writing *The Woman Who Discovered Printing*. The significance of the Buddha’s footprint as the first pattern in facsimile said to have been transmitted internationally would bear extended reflection: see John S. Strong, *Relics of the Buddha* (Princeton, 2004), pp. 85–97, for one possible starting point.

to be present. In her day, when the pressures of downward mobility on hitherto noble families meant that the future of their own daughters was something to worry about, such an occupation, open typically to the educated children of unsuccessful officials who died too soon to be able to protect them, was viewed with some sympathy; a few outstandingly intelligent individuals with real literary ability, like Xue Tao herself, were even treated with respect.³⁵ But to be a courtesan was not respectable.³⁶

In order to establish and maintain her position in her world, however, Xue Tao must have found the writing of poetry indispensable, as her surviving works show, and especially short verses for poetic exchanges with admirers, often only 28 characters in length. Although research into Chinese paper sizes of the Tang era suggests that there was no absolute standardisation, the typical sheet of Chinese paper that survives from this period is always fairly large, somewhat bigger than the foolscap folio size formerly standard in Europe.³⁷ Where Xue Tao lived in Sichuan, moreover, papermakers were famous for their luxury products in different colours and patterns, using natural substances such as hibiscus and other unusual materials. Though some much later writers were of the opinion that she designed her own variant of fancy paper, even stating that she manufactured this in person, the earliest source, as we shall see, is quite clear that she simply asked the manufacturers to produce sheets of a smaller size that might produce both aesthetic and economic benefits when used as the medium for her poems.³⁸ While several hundred of her poems survive from a dynasty that produced much poetry, including plenty from poets generally accounted better than her, it is with the introduction and popularisation of this ‘notepaper’ that her name has been firmly and uniquely associated for over a thousand years.

Now plainly Xue Tao’s innovation in the dimensions of her stationery was never going to be solemnly reported at court for the benefit of official historians, like the innovation in paper manufacture that Cai Lun had announced. Official historiography had quite other aims, which did not concern in the least the activities of provincial courtesans. Even the sole source we possess on metropolitan courtesans, the product of a very different tradition of anecdotal writing, only mentions her in order to suggest (defensively, and without presenting any evidence in proof, it must be said) that despite her fame there were two or three wittier than her in the capital.³⁹ But if her wit was good enough to be recalled two generations after her death, her poetry too was good enough to be mentioned already by an anecdotal, ‘unofficial historian’ in her own lifetime, and though there is not a trace of whoever was responsible for first assembling a corpus of her poetry and transmitting it to posterity, it was incorporated

³⁵Xue Tao and her environment are well described in Jeanne Larsen, *Brocade River Poems: Selected Works of the Tang Dynasty Courtesan Xue Tao* (Princeton, 1987). This slim volume of verse translations, with an introduction, is not equipped with full references, but is even so, as the author makes clear, based on extensive unpublished doctoral researches.

³⁶On this, see not only Larsen, *Brocade River Poems*, pp. xii–xvi, but also Robert des Rotours, *Courtisanes Chinoises à la fin des Tang* (Paris, 1968), pp. 28–29.

³⁷For some idea of the relevant scholarship on this topic see Jean-Pierre Drège, “Dunhuang papers: preliminary morphological analysis of dated Chinese manuscripts”, in *Dunhuang Manuscript Forgeries*, (ed.) Susan Whitfield (London, 2002), pp. 115–179.

³⁸Note Larsen’s conclusion, *Brocade River Poems*, p. xx.

³⁹Des Rotours, *Courtisanes*, pp. 56–57, translating the late ninth-century *Beili zhi* 北里志. For an excellent recent summary of this metropolitan environment, with further references, see Mark Edward Lewis, *China’s Cosmopolitan Empire* (Cambridge, MA., 2009), pp.101–107.

in anthologies by 900 and continued to be appreciated from century to century.⁴⁰ Her calligraphy was also highly regarded, though no genuine examples have survived.⁴¹ And among the remembered fragments of her verses and her spontaneous witticisms that later descendants of her eminent friends preserved, we again find by about the end of the ninth century the clear scholarly reference to her invention of notepaper mentioned above, a reference that is repeated or reworked by several subsequent writers.⁴² First, amongst many poems in praise of the paper of Sichuan there are already one or two from about this time that allude to her, so some connection between Xue Tao and fine paper was plainly widely discussed at this point.⁴³ So this must be why the scholar in question, Li Kuangwen 李匡文, in his *Zixia ji* 資暇集, a work of pedantry devoted to the correction of popular misconceptions, took it upon himself to point out that in about 806 Xue had expressed a preference for writing on what Jeanne Larsen translates as “Pineflower Slips”, a type of fancy paper that had existed earlier, but specifically asked that it be made in a smaller size for writing her poems; thereafter the convenience of this was readily appreciated by other poets of the area.⁴⁴ Li is absolutely explicit that Xue had nothing to do with the invention of “Pineflower Slips”, but that after her invention of the special ‘notepaper size’ for poetry, various types of paper were manufactured in the new format. This may seem to us a small step, but the degree of attention that Li’s remarks on Xue Tao garnered suggests that it was widely seen as a significant one.⁴⁵ Next, amongst the later works to pick up Li’s remarks, one of the earliest but certainly the most significant was the *Wenfang sipu* 文房四譜 of 986, compiled by Su Yijian 蘇易簡 (958–996), since this forms a classic anthology of extracts relating to the history of the ‘Four Treasures of the Scholar’s Studio’, namely brush, ink-stone, paper and ink, which helped define the accoutrements that were the key to the literary life for subsequent centuries.⁴⁶ It is true that Xue is placed in the ‘miscellaneous’ section of Su’s historical sources on paper, but she is there none the less, as is one of the poems about paper that mentions her name.⁴⁷

For over a thousand years from the late tenth century onwards, then, Xue Tao and her invention have been an indelible part of the history of the ‘information technology’ that traditional Chinese scholars considered important, in that she contributed to the specific type

⁴⁰Zhang Pengzhou 張逢舟, *Xue Tao shijian* 薛濤詩箋 (Beijing, 1983), pp. 52–78, collects many of these comments up to the twentieth century and in the chart on the transmission of her writings between pp. 42–43 shows in what anthologies she appeared, and p. 42 dates the first. The source contemporary with her that commends her writing is Li Zhao 李肇, *Tang guoshi pu* 唐國史補 3 (Shanghai, 1979), p. 55.

⁴¹Zhang, *Xue Tao shijian*, pp. 125–131.

⁴²Zhou Xunchu 周勛初, *Tangren yishi huibian* 唐人軼事彙編 20 (Shanghai, 2006), pp. 1128–1131, lists ten anecdotes, often repeated in a number of different texts, concerning Xue, but this by no means exhausts early references to her; eight texts in all would appear to mention her connection with notepaper.

⁴³Poems throughout the dynasties on the paper of Sichuan and Xue have been collected by Peng Yunsun 彭芸蓀, *Wangjiang lou zhi* 望江樓志 (Chengdu, 1980), pp. 66–82; on p. 69 a poem by Sikong Tu 司空圖 (837–908), and on p. 70 a poem by Wei Zhuang 韋莊 (836–910) mention her, though by what may be her title rather than explicitly by name in the first case.

⁴⁴Li Kuangwen, *Zixia ji* 3, p. 22 (*Congshu jicheng* edition).

⁴⁵Peng, *Wangjiang lou zhi*, p. 61, collates Li’s text as it survives against other sources deriving from it; Li is also cited in Zhou, *Tangren yishi*, pp. 1130–1131 (listing further texts drawing on Li Kuangwen) and in Zhang, *Xue Tao shijian*, p. 139. For the writing of Li’s name, I follow Yu Jiayi 余嘉錫, *Siku tiyao bianzheng* 四庫提要辨證 16 (Hong Kong, 1974), pp. 863–865.

⁴⁶On this work see Yves Hervouet (ed.), *A Sung Bibliography* (Hong Kong, 1978), p. 278.

⁴⁷Su Yijian, *Wenfang sipu* 4, pp. 57–58 and p. 60 (*Congshu jicheng* edition).

of manuscript based material culture of literary and artistic production that underpinned their own creativity. It is even said that she contributed to the conceptualisation of that technology, for, although Su Yijian does not mention it, one poem attributed to her in another work supposedly contemporary with his, the *Qingyi lu* 清異錄 attributed to Tao Gu 陶谷 (903–970), does seem already to allude to Su's 'Four Treasures' together as 'Four Friends' 四友.⁴⁸ The poem is however supposed to have been written in response to a meeting with Yuan Zhen 元真 (779–831), a famous statesman and literary figure who according to a late ninth-century source became her lover. But modern biographers of Yuan Zhen, whose life is known about in some detail, examine the evidence of this source and refute on the basis of contemporary documentation the very suggestion that the two even met.⁴⁹ In fact, though anthropomorphic discourse personifying individual items among the 'Four Treasures' has a long history, and the four are already treated together in this way as 'friends' in the celebrated biography of a writing brush by her contemporary Han Yu 韓愈 (768–824), it is hard to find the full set treated in this way any earlier.⁵⁰ A source that attributes such discourse to the earlier calligrapher, Xue Ji 薛稷 (649–713), allegedly from the end of the Tang, has been doubted precisely because its references to Xue Ji's remarks on this topic look strangely contrived.⁵¹ No matter: the report of Li Kuangwen, at any rate, is entirely credible, and it established a place for Xue in the historiography of paper that others may have wished to embroider upon as writing about paper developed. Our concern here is with the existence of such writing rather than its veracity.

One wonders, however, if it is purely coincidental that this focus on the manuscript technology of the scholar artist should have taken new shape in the very century in which printing became accepted as part of the enterprise of the state. The image of the Chinese scholar's studio as the ultimate aesthetic retreat from the changes of the wider world, an institution immune to such shocks as the Mongol invasion and the coming of the Manchus, is a beguiling one, and certainly has a power to beguile even today.⁵² Yet, by contrast, we happen to know that the great Neo-Confucian thinker (and poet and calligrapher), Zhu Xi 朱熹 (1130–1200) was obliged to support himself at one stage through printing, but he says as little as possible about it, and the details are therefore entirely obscure, even while

⁴⁸Tao Gu, *Qingyi lu* 4.1a, in the edition of the *Baoyan tang biji* 寶顏堂秘笈. See Hervouet, *Sung Bibliography*, p. 320, for some problems with the *Qingyi lu*. The poem may be found included without question (he does reject some other pieces) in Zhang, *Xue Tao shijian*, p. 7, on the basis of this source; Zhou, *Tangren yishi*, p. 1129, shows that the anecdote featuring the poem is repeated in another source of the Song dynasty; it seems unlikely to be later than the eleventh century.

⁴⁹Bian Xiaoxuan 卞孝萱, *Yuan Zhen nianpu* 元真年譜 (Jinan, 1980), pp. 113–115; Zhou Xianglu 周相淦, *Yuan Zhen nianpu xinbian* 元真年譜新編 (Shanghai, 2004), pp. 80–82. The source that attracts their ire is Fan Shu 范攄, *Yunxi youyi* 雲溪友義.

⁵⁰See p. 110 of the lively translation of this piece by Elling Eide, "Another Go at the *Mao Ying chuan*", *T'ang Studies* 8/9 (1990–91), pp. 107–111.

⁵¹Note Yu, *Siku tiyao bianzheng*, p. 1032, on the *Yunxian zalu* 雲仙雜錄 attributed to Feng Zhi 馮贄. This source, which has been suspected of containing dubious information ever since it was first commented on in the Song dynasty, is also the origin of a supposed reference to the printing of religious images in the seventh century. For a detailed study of its documentary value see Cao, *Zhongguo yinshuashu*, pp. 306–321.

⁵²Hence the appearance even in this century of publications in its praise, such as Nigel Cameron, *The Chinese Scholar's Desk* (Hong Kong, 2006) – Xue Tao and her fancy papers appear in this work on p. 76. Xue's appearance in the English language historiography of the 'Four Treasures' must go back at least to Chiang Yee's writing on the topic in the nineteen-thirties: see Chiang Yee, *The Chinese Eye; An Interpretation of Chinese Painting* (Bloomington and London, 1970), p. 207.

his calligraphy in manuscript survives to this day.⁵³ From his writings we know that he appreciated that the introduction of paper had made books more available, but he says quite explicitly that printing, by eliminating copying, made close reading much more sloppy than hitherto – a sentiment in which he was certainly not alone in his day.⁵⁴ True, the printed book as a finished article had certainly become accepted by the end of the Ming dynasty even in the scholar's studio. But while the production of paper was something that the Ming found interesting, as the early seventeenth-century encyclopaedia of technology the *Tiangong kaiwu* 天工開物 attests, the process of printing still was not. As before, so in later periods of Chinese history, too, it seems that from the perspective of historiography paper trumped print every time. Indeed, as Joseph P. McDermott points out, it is not until the advent of foreign observers in the nineteenth century that we get any detailed account of how Chinese printing was conducted at all. The highly technical business of scroll mounting is described as early as 847, but even a pre-modern Chinese work specifically devoted to technology like the *Tiangong kaiwu* has not a word to say on the use of woodblock to print.⁵⁵ And before the tenth century any mention of printing is so unusual that it is scarcely possible to identify in transmitted sources a single individual known to have been involved in the activity – the names of early printers we have retrieved in more recent times almost all come from surviving examples of their work, not from transmitted sources.

The one clear exception to this, which I have examined elsewhere, concerns the printing of a medical work in 855 by the eminent official Hegan Ji 紇干泉.⁵⁶ More recently some further light on the background to this event has been shed by the research of Fan Jiawei 范家偉, who demonstrates that in the ninth century it was a common practice for disgraced officials, especially those exiled to the tropics of the south, to redeem themselves by compiling useful works on tropical medicine.⁵⁷ Hegan, who had been governor in Canton until removed for corruption, would certainly have been familiar with this ploy. But as a senior official who needed to redeem himself rapidly at a late stage in his career, compiling his own medical work would have seemed unduly time consuming, though as a onetime examiner he presumably had the scholarly credentials to do so. Taking the credit for circulating someone else's medical work might well therefore have seemed a more expedient option, but it would seem that it was not an option that anyone else during this early period felt compelled to choose.⁵⁸

It is difficult, however, to know exactly what to make of the pattern of information and the lack of it outlined in the foregoing remarks. Clearly paper had a cultural value in China as part of the technology of the creative scholar that it did not have in Europe,

⁵³Wing-tsit Chan, *Chu Hsi: Life and Thought* (Hong Kong, 1987), p. 3; cf. p. ix.

⁵⁴Zhu's remarks are translated from his *Zhuzi yulei* 朱子語類 by Daniel K. Gardner, *Learning to Be a Sage* (Berkeley, CA., 1990), pp. 139–140; similar sentiments from Ye Mengde 葉夢得 (1077–1148) may be found e.g. in his *Shilin yanyu* 石林燕語 8, pp. 2b–3a (*Biji xiaoshou daguan, xubian edition*).

⁵⁵Joseph P. McDermott, *A Social History of the Chinese Book* (Hong Kong, 2006), pp. 12–14: this study establishes beyond doubt the continued importance of manuscript copying after the rise of printing.

⁵⁶T. H. Barrett, "Religion and the first recorded print run: Luoyang, July, 855", *Bulletin of the School of Oriental and African Studies* 68.3 (2005), pp. 455–461.

⁵⁷Fan Jiawei, "Liu Yuxi yu Chuanxin fang" 劉禹錫與傳信方, in *Cong yiliao kan Zhongguo shi* 從醫療看中國史, (ed.) Li Jianmin 李建民, (Taipei, 2008), pp. 111–144.

⁵⁸Another exception in the ninth century might be an endorsement of a printing project by Sikong Tu, but I believe that this piece has been misdated.

perhaps in part due to the importance – which continues to this day – of calligraphy as a means of self-expression in the public arena.⁵⁹ Xue Tao, on this understanding, would exemplify a woman who was honoured as someone who knew her place in the world of elite creativity, though ideally in order to confirm this interpretation the materials gathered by the authors cited above should be examined more extensively to trace the development of her reputation. Here, however, she merely serves as an example to demonstrate the reality of different historiographies of paper and print in different cultures. Though I appreciate that the foregoing remarks are far from exhaustive, even so that such a difference exists and should be treated seriously is, one would hope, beyond dispute. Why this divergence should exist is, to repeat, an interesting question that cannot be addressed so simply. More important, perhaps, is the issue of what to do in the case of studying China.

Assessing Chinese sources on printing as against paper is always going to be more difficult than studying the rise of European printing, in that one is always driven towards the *argumentum ex silentio*, whereas it is perfectly possible, for instance, that the lack of any record of the printing process is due to mere happenstance, if not to sheer over-familiarity with the technique.⁶⁰ Joseph Needham's approach might have been to point to the divide between the mandarin outlook of China's rulers and the unseen world of the Chinese craftsman – though the existence of works like manuals of carpentry shows that the divide was not absolute.⁶¹ Suggesting that a lack of information on early printing might reflect politics, and even gender politics, as I have done in the past, might seem to smack of conspiracy theory. Yet surely the peculiar circumstances of the late seventh century, and the period of transition from the eighth century to the public state-financed printing of the tenth century, both deserve much closer attention than hitherto. The silence, too, is not absolute; the historiography, though not as helpful as it might be, is perhaps not entirely useless. Great literary figures may appear at this stage to ignore printing altogether, but their remarks on the possibility of creating (by a means unspecified) vast numbers of copies of a literary piece may, as Stephen Owen suggests, provide oblique testimony to their awareness of its possibilities, whether for good or ill.⁶² Explicit recorded instances of printing are certainly few and far between, but there is plenty of scope, for example, for reconstructing the environment in which it emerged, an environment in many ways very different from that of pre-Gutenberg Europe. Even if no further archaeological discoveries throw light on the area – which seems unlikely – there is still plenty of work that can be done.

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⁵⁹Thus Richard C. Kraus, *Brushes With Power: Modern Politics and the Chinese Art of Calligraphy* (Berkeley, CA., 1991).

⁶⁰Such is the view of Joseph McDermott, in the passage cited above, n. 55.

⁶¹Compare Brook's reference to Needham as the champion of "rude mechanicals" against the Confucian elite, "The Sinology of Joseph Needham", p. 346.

⁶²Stephen Owen, *The Late Tang: Chinese Poetry of the Mid-Ninth Century (827–860)* (Cambridge, MA., 2006), p. 449, though the suggestion on p. 570 that poetry was already being printed in the 820s is challenged by Cao, *Zhongguo yinshua*, pp. 321–336.