

Some Attempts at Enhancing Old Chinese Reconstructions Through the Lens of Palaeography

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Abstract The available reconstruction systems of Old Chinese have proven to be indispensable tools for research in different fields, nevertheless, they remain flawed in many aspects and thus call for continuous refinement. Focusing on Baxter and Sagart's reconstruction (2014), in this paper I will argue that a more systematic way of incorporating palaeographic data as an integral part of the methodology could enhance the reconstruction outcomes. In particular, the graphic forms preceding the *kaishu* 楷書 script of many characters and the frequent cases of phonetic borrowing in unearthed texts can provide considerable insightful data. Through some illustrative examples, I will contend that phonetic borrowings in excavated texts can provide insights for a) reconstructing items not included in current reconstructions; b) disentangling rhyme class mergers, and c) questioning and verifying the forms of items included in current reconstructions. A more porous boundary between the fields of palaeography and Chinese historical phonology could thus provide new data for answering many of the still open questions relating to Old Chinese.

Keywords Old Chinese. Historical Phonology. Palaeography. Bamboo manuscripts. Excavated texts. Phonological reconstruction.

Summary 1 Palaeographic Material as Sources for Old Chinese Phonology. – 2 Reconstructing Items not Included in BS. – 3 Disentangling Rhymes that Have Merged. – 4 Verifying Reconstructed Items. – 5 Conclusive Remarks.



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1 Palaeographic Material as Sources for Old Chinese Phonology

In his 2016 review of the latest reconstruction system of Old Chinese (OC) by Baxter and Sagart (2014) (hereafter, BS),¹ Christoph Harbsmeier (2016, 498) concludes that “we need reconstructions, no matter how unreliable these may prove to be”. Harbsmeier’s words were probably too harsh, since, after almost a decade, the system proposed by BS still remains ‘the state of the art’, and many of its features have proven to be essentially correct. The case of vowel purity is exemplary: a comparison between BS and other reconstruction systems regarding the medial vowels in rhyming words of the *Shijing* 詩經 (*Book of Odes*, eleventh-seventh century BCE)² demonstrates significantly superior performance of the former, indicating a much more well-ordered pattern of rhyme schemes than any previously proposed system (List et al. 2017, 1-17).

The methodology underlying BS’s reconstruction has been effectively synthesised by Hill (2019, 188-94), and I will largely draw on this schematic and punctual synthesis for many of the instances discussed in this paper. In a nutshell, the methodology goes as follows: it starts from the Middle Chinese reading of a character as given in the rhyme dictionaries and rhyme tables,³ and projects it back to OC by taking into account both language-internal and language-external data. To the first category belong both philological sources such as the *Shijing* rhyme patterns, ancient glosses, and the *xiesheng* 諧聲 series,⁴ but also systematic accounts of Sinitic varieties not descendants of MC (e.g. Min 閩) and word families alternations. The second category mainly includes older layers of loans from OC into

I would like to express my heartfelt gratitude to Laurent Sagart for his helpful feedback on some of the examples discussed in this paper and to the two anonymous reviewers for their many insights and suggestions. Any inaccuracy or error is, of course, entirely mine.

1 In this paper I refer to ‘Old Chinese’ (hereafter, OC) in broad terms, as the stage of the language going from its first written attestations (fourteenth century BCE) to the early Han 漢 dynasty (late third century BCE). See Baxter, Sagart 2014, 1.

2 The traditional datation of the *Odes* given in this paper has been questioned. Baxter (1991) shows that different layers of historical phonology can be detected in the language of these compositions. In particular, the *textus receptus* (i.e. received text) of the Mao tradition clearly embeds some Han (broadly 206 BCE-220 CE) phonological traits.

3 I refer to ‘Middle Chinese’ (hereafter, MC) in broad terms: as the stage of the language going from the end of the Han dynasty (third century) to the thirteenth century CE circa. The sources here mentioned notably include the rhyme dictionaries *Qieyun* 切韻 (Spellings and Rhymes, seventh century CE) and *Guangyun* 廣韻 (Extended Rhymes, eleventh century CE), and the rhyme tables *Yunjing* 韻鏡 (Mirror of Rhymes, twelfth century CE) and *Qiyinlue* 七音略 (Outline of the Seven Sounds, twelfth century CE).

4 Series of characters sharing the same phonetic elements. See Karlgren 1957; Schuessler 2009.

neighbouring languages (e.g. Lakkia and Ruc, among others).⁵ Palaeographic data also play a role in the BS system, although they are not employed systematically.

Through some illustrative examples, I will argue that a further step should be included as an integral part of the whole methodology: the systematic verification of reconstructed items against the numerous cases of phonetic borrowings detectable in pre-Han excavated manuscripts. This claim is far from being unprecedented. Many scholars have long recognised the potential that palaeographic data could hold for phonological reconstructions (e.g. Qiu 1979; Liu 2005; Ye 2017), and the same could be said for the reverse (e.g. see Jacques 2022, 488-91). The significant number of texts unearthed through archaeological discoveries, and unfortunately, also through the occurrence of looting ancient tombs in recent decades, now provides a vast amount of data deserving a major role in research on Old Chinese phonology.⁶

To this day, the most remarkable attempts to refine the BS system through the contribution of palaeography have been made by Haeree Park (2016, 31-72). Some attempts at testing rhyme class distinctions in different phonological reconstructions - also including the BS system - through palaeographic evidence also exist in Chinese-language scholarship (e.g. Yang 2022). Nonetheless, Chinese historical phonology and Chinese palaeography remain by and large two fairly distinct fields with only sporadic interaction between them.

The examples discussed in this brief paper will focus on phonetic borrowings,⁷ attempting to show how they can prove to be essential evidence for at least three different questions, namely a.)

⁵ An overview of the principles underlying Chinese phonological reconstructions is given in Baxter 2015.

⁶ The ethical problems related to working with looted - or 'unprovenanced' - artefacts have been the object of debate among scholars. There has been advocacy to ignore these materials or to practice self-censorship in order not to contribute to the prestige and market value of these objects through academic scholarship (Goldin 2013; 2023). On the other side, many scholars claim that ignoring these sources would result in a significant loss of potentially relevant data and that the costs of such an intransigent position would far outweigh its benefits (e.g. Foster 2017; 2024; Smith, Poli 2021, 520; Meyer, Schwartz 2022, 2). I agree with the latter position. As Foster (2024) has pointed out, the practice of ignoring or avoiding citing unprovenanced artefacts entirely may prove to be unattainable. Besides, the decision on whether to work with these types of artefacts should be addressed case by case, establishing a validity threshold based on radiocarbon testing and scholars' expertise.

⁷ The practice of phonetic borrowings is extremely frequent in early Chinese texts. The term 'phonetic borrowing' refers to at least two different phenomena: i.e. the practice of employing a given character to represent a word originally lacking a graphic representation (*jiajie* 假借), and the practice of employing characters to represent phonetically similar words which have their own graphic representation (*tongjia* 通假). This paper will focus on cases of *tongjia*, which are deemed particularly informative when the borrowed character exhibits a different phonophore (i.e. phonetic component)

reconstructing items currently not included in BS, b.) disentangling merged rhymes, and c.) questioning and verifying reconstructed forms in BS.

2 Reconstructing Items not Included in BS

One of the most evident cases in which palaeographic material can help linguists in enhancing current reconstructions of OC are those characters that lack a reconstructed form but function as clear instances of phonetic loans in the manuscripts. For example, consider the case of the sentence final particle *yi* 毇. This particle is rather rare in transmitted texts while it is frequently seen in unearthed sources. Numerous studies, especially in Mainland China, have long argued that *yi* 毇 should be understood as a sort of Qin 秦 region counterpart of the more common sentence final nominal predication marker *ye* 也 (e.g. Zhang 2011, 570-85). Yet, the retrieval of new caches of bamboo slips from the Chu 楚 region has revealed that the particle was frequently used by Chu scribes as well.⁸

Reconstructing this item can prove to be challenging in some ways: the character never appears in the *Shijing* and all the other items included in the same *xiesheng* series have no reconstructed form in BS. This means that its MC form retrievable from the *Guangyun* cannot be projected back to OC.⁹ The MC form 'ejH (*Guangyun* 1958, 375)¹⁰ could possibly go back to different rhymes and different initials in OC: the rhyme -ej 齊 can originate from OC *-ij-s (*zhi bu* 脂部), *-it-s (*zhi bu* 質部) or *-et-s (*ji bu* 祭部) and the initial consonant ʃ- 影 can go back to OC *q- or *ʔ-.

A significant piece of data for assessing the correct reconstruction comes from the collection of bamboo manuscripts at Anhui University

shengfu 聲符). For more details on the phenomenon of phonetic borrowings please refer to Qiu 2013, 174-97.

⁸ This particle frequently appears in the *corpus* of Warring States (Zhan guo 戰國, 453-221 BCE) bamboo slips purchased in 2008 from the Hong Kong antiques market by Qinghua University in Beijing. The Qinghua cache contains more than two thousand bamboo slips. Radiocarbon dating has confirmed the authenticity of these artefacts, which can be dated to the late fourth century BCE and attributed to the Chu scribal culture. See Liu 2011, 63.

⁹ Rhymes in the *Shijing* are not the sole source for reconstructing OC; many other transmitted texts and excavated materials, such as bronze vessels or bamboo and silk manuscripts, also contain numerous rhymed passages that could equally contribute to the reconstruction of OC forms. Unfortunately, to the best of my knowledge, a comprehensive and handy compilation of all rhyming passages - especially those found in excavated materials - is currently missing. This absence makes it exceedingly time-consuming for researchers to verify whether a character not rhyming in the *Shijing* is attested as rhyming elsewhere.

¹⁰ In this paper I use the critical edition of the *Guangyun* contained in Zhou 1958.

(hereafter, ADJ1 or ADJ2 in relation to the edited volume): on slip no. 40 of the Anhui University *Shijing* manuscript,¹¹ there is a line which has a perfect match in the transmitted text of *Shijing* 24/11/18.¹² In this line the character *yi* 毳 clearly functions as a loan for the particle *yi* 伊 *ʔij (*zhi bu* 脂部):

ADJ1: 佳絲毳緝
Shijing 24/11/18: 維絲伊緝
 It is silk that makes the thread.¹³

Another instance of phonetic borrowing is found on slip no. 9 of the Shanghai Museum manuscript (SBJ2) *Zigao* 子羔,¹⁴ where *yi* 毳 stands for the particle *yi* 抑 *ʔ(r)ik.

SBJ2: 毳(抑)亦成(誠)天子也與(歟)?
 Yet perhaps they truly were the sons of Heaven?!¹⁵

The example in the Anhui University *Shijing* allows us to opt for the rhyme *-ij-s (*zhi bu* 脂部) in OC. Yet, to account for the example in the Shanghai Museum manuscript, we could hypothesise a final glottal stop (*-ʔ) in the reconstruction. As for the initial consonant, no contact with *k*- 見, *g*- 群, *h*- 匣, *x*- 曉 or *y*- 以 can be detected in the *xiesheng* series, suggesting that the MC initial consonant ‘影 should be projected back to the OC initial *ʔ. The character entry *yi* 毳 can thus be reconstructed as OC *ʔʷij[ʔ]-s.

A similar case occurs with the character *yan* 𠂔. This character is rather rare: it lacks an entry in the *Shuowen jiezi* 說文解字 (Explain the Graphs to Unravel the Written Words, second century CE),¹⁶ never occurs in the *Shijing*, has no *xiesheng* series, and no entry in the

¹¹ The *corpus* of Chu bamboo manuscripts (1167 bamboo slips) preserved at Anhui University (*Anhui Daxue* 安徽大學) was purchased in 2015. Radiocarbon testing conducted at Peking University (*Beijing Daxue* 北京大學) has confirmed the authenticity of these artefacts, which can be dated to the fourth century BCE. The publication of the manuscripts is currently still ongoing; two of the expected nine volumes have been published to date. See ADJ1 2019, 1 and Liu et al. 2019, 56-60.

¹² In this paper I use the ICS concordance system for referencing the Chinese classical works.

¹³ Transl. by Meyer, Schwartz 2022, 199.

¹⁴ The *corpus* of bamboo manuscripts housed at the Shanghai Museum (Shanghai Bowuguan 上海博物館) was purchased on the Hong Kong antiques market in 1994. This collection of unearthed texts comprises more than 1,200 bamboo slips written in the Chu script, which have been published in nine volumes edited by Ma Chengyuan (2001-12). Radiocarbon testing has confirmed their authenticity and provided a dating to the late fourth-early third centuries BCE. For more details see Liu et al. 2019, 11-16.

¹⁵ Unless otherwise stated, all translations are by the Author.

¹⁶ This translation of the *Shuowen jiezi* title is taken from Bottéro 2019, 59-62.

Guangyun. This makes its reconstruction quite hard. Its MC reading, though, can be retrieved from the *Yupian* 玉篇 (Jade Chapters, sixth century CE in *Kangxi zidian* 康熙字典 2015, 651) where the *fanqie* 反切 *niu juan* 牛眷 MC ngjuw kjwenH is given, yielding the MC ngjwenH.

The rhyme *-jwen* 仙 can be reconstructed as OC **-ron* or **-ror* (*yu-an bu* 元部), while the initial consonant *ng-* 疑 can be reconstructed as **m-qʰ-*, **m-G-*, **N-qʰ-*, **N-G-* when showing connections with MC *k-* 見, *y-* 以 or *'-* 影, or as OC **ŋ-*.

Also in this case, two instances of phonetic borrowings in the manuscripts can help us test what has been proposed so far: the character *yan* 𠄎 appears in two pericopes of the two manuscript versions of *Cao Mo zhi zhen* 曹沫之陳 (Cao Mo's Battle Formations) from the collections of the Shanghai Museum and Anhui University. The editors of the Anhui University manuscript have interpreted the character as a phonetic borrowing for the words *yuán* 願 **[ŋ]o[n]-s* (to desire) and *juán* 倦 **[g]ro[n]-s* (fatigued) (ADJ2 2022, 53, 66), while the editors of the Shanghai Museum manuscript (hereafter, SBJ4) only agree on the second reading (SBJ4 2004, 267-8):¹⁷

ADJ2 slip no. 3: 𠄎(願)尔正衿(功)

SBJ4 slip no. 37: 𠄎(願)尔正衿(功)

May you want to rightly apportion merits.

ADJ2 slip no. 24: 不可田(使)𠄎(倦) = (倦)則不行

SBJ4 slip no. 38: 不可思(使)𠄎(倦) = (倦)則不行

Do not let [those in command of the army] get fatigued or they will no longer be able to march.

¹⁷ The editors of SBJ read the first occurrence of the graph *yan* 𠄎 as an allograph of *ben* 奔 MC pwon OC **pʰur* (to run, to flee), based on the well-known graphic variant *ben* 犇 (奔). As the entry in the *Yupian* seems to suggest, the characters *yan* 𠄎 and *ben* 犇 should be distinguished. The solution proposed by the editors of ADJ fits better the general meaning of the passage. Besides, the character *yan* 𠄎 also appears in another pericope of *Cao Mo zhi zhen* where it can be arguably read as a loan for *juán* 倦 (fatigued), the whole passage dealing with the *qi* 氣 (vital energy) of the soldiers. For these reasons, I believe that the reading *ben* 奔 should be rejected. A reading *yi* 疑 **[ŋ](r)ə* (doubt) has also been proposed by some scholars (e.g. Yu, Zhang 2019, 274). I find this proposal not convincing: the word *yi* 疑 appears on ADJ2 slips nos. 19, 28, 35, 42 and SBJ4 slips nos. 33, 44, 52 and is consistently written as *yi* 𠄎 (ADJ) or 矣 (SBJ). As for the expression *zheng gong* 正衿, the editors of ADJ propose to read it as *zheng gong* 爭功 (to compete for merits). I read it as *zheng gong* 正功 (to rightly apportion merits) as in *Zhouyi* 周易 (The Zhou Changes) 7/11/5 *Da jun you ming, yi zheng gong ye* 大君有命, 以正功也 “The great ruler delivers his charges: thereby he rightly apportions merit” (Transl. by Legge 1882, 276). This parallel had already been noted by Wang Ning (in Sun 2023, 87).

The OC reconstruction **[g]ro[n]-s* is mine. MC *gjwenH* 渠卷切. The MC rhyme *-jwen* 仙 after grave initials can only go back to OC **-ron/r* (*yuán bu* 元部) and initial *g-* 群 is likely to be inherited from OC. A nasal prefix (**N-* or **m-*) plus velar could also be at the origin of MC *g-* 群. In both cases the matching seems suitable enough to validate this instance of phonetic borrowing.

These readings, acceptable with respect to the broader contexts of the pericopes, are both supported by phonological evidence and, at the same time, allow us to enhance our phonological understanding: if *yan* 件 here effectively functions as a loan for *yuan* 願 *[ŋ]o[n]-s or *juan* 倦 *[g]ron-s, it would mean that it can be rather safely reconstructed as *[ŋ]ro[n]-s.¹⁸

In the absence of a *xiesheng* series for further investigation, a reconstruction with a nasal prefix – be it *m- or *N – and an uvular as onset could also be possible. As the *Yupian* glosses the character as related to *niu* 牛 (ox),¹⁹ we could speculatively opt for a *m- prefix, frequently attested in animal names. However, the reconstruction with *[ŋ] onset remains the most plausible in light of the phonetic borrowing examples detected in the manuscripts.

3 Disentangling Rhymes that Have Merged

In the centuries separating the language of Mengzi 孟子 (fourth-third century BCE) from the language of the *Qieyun* 切韻 (601 CE) many rhymes coalesced. Our current understanding of the phonological developments of Chinese allows us to disentangle many of these cases when projecting MC readings back to OC. However, in some cases such disentangling is subject to more reservations. In this respect, the phonological data encoded in the early script attested on the unearthed texts can once again prove to be extremely valuable.

This is the case of the rhymes *-at and *-et (*yue bu* 月部) which have the same reflexes in MC division III after acute initials, making them difficult to disentangle when reconstructing OC (Schuessler 2009, 225). I take the character *shi* 筮 MC dzvejH (achillea stalk, divination by achillea), reconstructed as *[d][e][t]-s by BS, as an example.

This character appears twice in the *Shijing* but it does not rhyme (Baxter 1992).²⁰ Fortunately, it is attested on many unearthed manuscripts from the Chu region where it functions as a phonetic borrowing. One of its best-known occurrences is in the Mawangdui 馬王堆 silk manuscripts (hereafter, MWD4) of the *Laozi* 老子 (late third century – early second century BCE) where it functions as a phonetic loan for the word *shi* 逝 *[d]at-s (to leave, to go afar) in a line which has a parallel in the stanza no. 25 of the received edition (MWD4

¹⁸ This reconstruction is also supported by the character 𪛗 (phonophore *yuan* 元 *[ŋ]o[r]) functioning as a phonetic loan for *yuan* 願 in Qinghua **Zichan* 子產 slip no. 21. As many other examples show, the coda *-r had already shifted to *-n in the phonology of the Chu manuscripts.

¹⁹ *Niu jian ye* 牛件也 (*Kangxi zidian* 2015, 903).

²⁰ I.e. *Shijing* 58/27/13; 169/76/12. For a practical tool for checking *Shijing* rhymes see List 2016.

2014, 42, 206).²¹ The retrieval of different excavated versions of the *Laozi* allows us to make a deeper survey of the ways this word was written in early manuscripts: the bamboo manuscript preserved at Peking University (second-first century BCE) (hereafter, BD2) writes the character *di* 𡗗 (lofty, extreme),²² which is likely to function as a phonetic loan as well (BD2 2012, 156).²³ Its phonophore *dai* 帶 is reconstructed as *C.tʰa[t]-s, making it a good candidate for phonetic borrowing. Highly informative is also the graph attested on slip no. 22 of the *Laozi* bamboo manuscript A (late fourth century BCE) found at Guodian 郭店 (hereafter, GD):²⁴ 𡗗, usually transcribed as 潛.

At the time of its first attestations, this complex graph sparked a heated debate among palaeographers and philologists both on its transcription and on its reading. Some scholars suggested the character stood for a lexical variant in the line of the *Laozi*, while others suggested it merely represented a phonetic borrowing for the reading *shi* 逝 of the received version.²⁵

The debate on how to appropriately read it seems to be settled: the character frequently appears in later discovered caches of bamboo manuscripts where it usually stands for the reading *shi* 逝, confirming that the Guodian version of the *Laozi* did not show any lexical variation or innovation with respect to the received text. As for its transcription, I hypothesise that its phonophore should be identified in the component 音, which is the most stable part of all attested graphic variants.²⁶ He Linyi (1999, 196-204) and Liao Mingchun

21 The discovery of over three thousand artefacts including silk manuscripts, paintings, bamboo slips, lacquered objects, weapons etc. from tomb nos. 1 and 3 at the Mawangdui site (Changsha, Hunan 湖南 Province) in 1973 is arguably one of the most famous Chinese archaeological discoveries of the last century. Various elements indicate that burial no. 3 - where the silk manuscripts were retrieved - can be dated back to the year 168 BCE (Western Han 西漢 206 BCE-9 CE). For more details see Liu et al. 2019, 640-756.

22 This character is glossed as *Gao ye*. *Yi yue ji ye* 高也。一曰極也 (Lofty. One opinion reads this as extreme; Author's transl.) in the *Shuowen jiezi* 1983, 504. This meaning - compatible with the broader meaning of the stanza - makes it suitable to be read *ad litteram*. The reading as a phonetic loan, though, is better supported by the other attestations, all pointing to the reading *shi* 逝.

23 The *Laozi* manuscript preserved at Peking University is part of a larger collection of over 3000 bamboo slips donated to the university by an anonymous collector in 2009. These slips are generally dated to the reign of Han Wudi 漢武帝 (141-87 BCE). For further details, refer to Liu et al. 2019, 48-52. Regarding the authenticity of these slips, see Foster 2017.

24 The Guodian cache comprises almost eight hundred bamboo slips, which were excavated in 1993 in the Jingmen 荊門 area (Hubei 湖北 Province), ancient Chu polity. The Guodian *corpus* also dates back to the late fourth century BCE. See Liu et al. 2019, 7-11.

25 For a detailed account of the different proposals see Andreini 2005, 85-96.

26 The character appears with some slight variations in the Qinghua manuscripts **Fu Yue zhi ming* 傳說之命 (The Command to Fu Yue) slip no. 5; **Liang Chen* 良臣 (Good Ministers) slip no. 10; **Zichan* 子產 slip no. 21; **Ziyi* 子儀 slip no. 18; **Chi bang zhi dao* 治邦之道 (The Way of Governing the Country) slip no. 22; **Yin Tu* 音圖 (Table of Sounds) slip no.

(2003, 222) identify the phonophore as *xue* 𪛗 *s.ɲat. The substitution with the phonophore *zhe* 折 *N-tet is only visible in Han dynasty documents (see Li 2012, 115).

Receptus: 大曰逝 *[d]at-s
 GD: 大曰澁 (𪛗 *s.ɲat ?)
 MWD4: 大曰筮 *[d][e][t]-s
 BD2: 大曰懣 *C.tʰa[t]-s
 What is great goes afar.²⁷

The evidence coming from the *Laozi* manuscripts seems to suggest that reconstruction in *-at for the character *shi* 筮 could possibly be more felicitous.²⁸

4 Verifying Reconstructed Items

Another common case in which palaeography turns out to be a valuable tool for questioning or verifying phonological reconstructions is when we come across some ‘mismatches’ between the reconstructed form and the phonetic information encoded in the ancient graphs, or when the ancient graphs highlight some phonological – and sometimes even etymological – connections no longer visible in the *kaishu* 楷書 script.

The instance of *feng* 風 (wind) and *fan* 凡 (all) is exemplary. Though uneasy to tell by simply looking at their *kaishu* forms, both graphs actually share the same phonophore, as also confirmed by Xu Shen 許慎’s gloss of the entry *feng* 風 in the *Shuowen jiezi*.²⁹ This is extremely evident when it comes to the Chu script, where *feng* 風 is generally written as 𪛗, while *fan* 凡 is usually written as 𪛗. However, Baxter and Sagart reconstruct the two items with different rhymes: *feng* 風 *prəm and *fan* 凡 *[b]rom. This ‘mismatch’ seems problematic, since

21 and in the Anhui University *Shijing* manuscript slips nos. 43, 59, 81, 82, 83, 101, 111, 112. The attested graphic variants are 𪛗, 𪛗, 𪛗, 𪛗, 𪛗, 𪛗, 𪛗. All these graphs are glossed as *shi* 逝 (in most of the examples), *shi* 澁 or *shi* 澁 by the editors. The latter two – found in *Ziyi 子儀 and *Chi bang zhi dao 治邦之道 – show all the components found in the character of Guodian *Laozi* A. However, they should be read as *shi* 澁 (shore).

²⁷ Transl. by Ryden 2008, 53.

²⁸ One of the two anonymous reviewers kindly informs me that they are not sure whether the entry *shi* 逝 should be reconstructed as *-at. The character *shi* 逝 is found rhyming in different lines of the *Shijing* (see Baxter 1991, 788) and BS reconstruction does not seem to question the reconstruction of its nuclear vowel. Therefore, I keep the idea of reconstructing it as *-at. Whether the nuclear vowel of both *shi* 逝 and *shi* 筮 should be reconstructed as *-at or *-et, these many examples of phonetic borrowings strongly suggest that both entries shared the same rhyme.

²⁹ *cong chong fan sheng* 从虫凡聲 (derived from *chong*, *fan* is the phonophore; Author’s transl.) (*Shuowen jiezi* 1983, 677).

it contradicts the basic assumption of Chinese Phonology – formulated already by Duan Yucai 段玉裁 (1735-1815 CE) – that “characters with the same phonophores must have belonged to the same rhyme class in ancient times” (*tong sheng bi tong bu* 同聲必同部).

Baxter transcribes the MC readings of the two characters as pjuwng and bjom. The transcription of the latter, however, could eventually be questioned: *fan* 凡 is given the *fanqie fu fan* 符芝 MC bju phjomH in the *Guangyun* (1958, 233), but the character *fan* 芝 – indicating its rhyme – is actually spelled with the *fanqie fu fan* 孚梵 MC phju bjomH or phju bjuwng (*Guangyun* 1958, 548). Interestingly, the second reading of the character *fan* 梵 matches the rhyme of *feng* 風 (-juwng 東) and would thus allow to reconstruct the same rhyme also in OC.

The -juwng 東 rhyme after labial initials either goes back to an OC rounded vowel or is reconstructed as OC *-əŋ (*zheng bu* 蒸部). Consequently, the two words could possibly be reconstructed as *p[o, u]ŋ and *b[o, u]ŋ or as *pəŋ and *bəŋ, which seem to better match the way they were once written on bamboo texts. However, this is not supported by the rhyming patterns of the *Shijing*, where the character *feng* 風 is clearly found as rhyming in *-əm. It is thus likely, that in this case the same phonophore was used to represent two non-perfectly identical syllable types, in the lack of a better choice (see Baxter, Sagart 2014, 66).³⁰ Furthermore, though it is true that the *fanqie* spellers can sometimes seem ambiguous as having themselves multiple readings, it is also true that each *fanqie* speller is generally only employed with its more frequent and basic reading (Pulini, List 2024).

Cases of ‘mismatches’ between reconstruction and phonetic borrowings in early texts can also prove helpful for reconstructing OC pre-syllables: it is the case of *shan* 善 *[g]e[n]? (to be good), which, though being a core term in many early Chinese texts, never rhymes in the *Shijing*. Baxter and Sagart (2014, 78) have identified some evidence for reconstructing a velar initial. However, this reconstruction can be questioned on the grounds of a phonetic loan in the *Cao Mo zhi zhen* manuscripts (ADJ2 slip no. 11; SBJ4 slip no. 18) where the character *chan* 纏 *[d]ra[n] clearly functions as a loan for the verb *shan* 繕 (to repair), which takes *shan* 善 as its phonophore.

e.g. ADJ slip no. 11: 纏(繕) 虞 (甲)利兵

e.g. SBJ slip no. 18: 纏(繕) 虞 (甲)利兵

Maintain armours and weapons in good conditions.³¹

³⁰ A full grid of phonophores – both in the standardised Chinese script and in excavated materials – with their phonetic values according to BS system is currently missing. Such a tool could prove to be helpful for further supporting or discarding this claim.

³¹ The same pericope also appears on ADJ slip no. 34 and SBJ slip no. 51 of the two *Cao Mo zhi zhen* manuscripts.

This example could possibly be explained by reconstructing *shan* 善 with a *k- pre-initial before a *d- onset.³² This would account both for the evidence found by Baxter and Sagart for reconstructing a velar in the onset and for the suitability of the character *chan* 纏 to function as a loanword for *shan* 繕 in excavated texts. Some further data, also coming from neighbouring languages, could prove useful for further validating this hypothesis.

The last instance of ‘mismatch’ to be explored in this paper is linked to a person’s name: Cao Mo 曹沫, a general of the State of Lu 魯 active in the seventh century BCE, after whom the two aforementioned *Cao Mo zhi zhen* manuscripts from the collections of the Shanghai Museum and Anhui University are named.

The case of Cao Mo is particularly interesting since both the manuscripts and the transmitted sources show a remarkable degree of graphic variation in relation to this name. In the transmitted literature, the general of Lu is called Cao Mo (either written as 曹沫 or 曹昧), Cao Gui 曹劄 or Cao Hui 曹翹.³³ These different graphic variants all seem to point to the meaning of something ‘obscure’, ‘indistinct’, ‘blind’. This meaning is shared by the characters *mo* 昧 and *gui* 劄,³⁴ of which the characters *mo* 沫 and *hui* 翹 are likely to be allographs. Furthermore, apart from being semantically related, the two variants of the name of the Lu general attested in the transmitted literature also share the same rhyme (*dieyun* 豐韻) *-at (*yue bu* 月部).

Conversely, the manuscripts show the graphic variants 𣪠 𣪡 and 𣪢 𣪣 for the first character and the graphs 𣪤 𣪥, 𣪦 𣪧, 𣪨 𣪩 and 𣪪 𣪫 for the second one.

By looking at the different graphic variants we can isolate two different phonophores for the first character: *cao* 曹 *N-ts’u and *gao* 告 *k’uk-s; and four phonophores for the second one: *mo* 末 *m’at, *sui* 歲 *s-q^{wh}at-s, *mie* 蔑 *m’et and *wan* 萬 *C.ma[n]-s. A glimpse through the reconstructions in BS clearly reveals a rather complex picture alternating several different rhymes for one single person’s name. This requires further investigation.

It is likely that the phonophore in the graphs 𣪠 and 𣪡 attested on the *Cao Mo zhi zhen* bamboo slips is not solely the component *gao* 告, but rather 𣪢. The latter could possibly be identified as an allograph

³² Sagart, personal communication.

³³ The figure of Cao Mo appears in many transmitted sources such as *Zuozhuan* 左傳 (The Commentary of Zuo), *Lü shi Chunqiu* 呂氏春秋 (Master Lü’s Spring and Autumn Annals), *Guliangzhuàn* 穀梁傳 (Guliang Commentaries), *Guoyu* 國語 (Discourses of the States), *Shiji* 史記 (The Grand Scribe Records) and *Zhanguo ce* 戰國策 (Strategies of the Warring States). See Li 2004.

³⁴ E.g. The character *gui* 劄 appears in the passage [...] *ze xian yi wei gui er bu bian* 則見以為劄而不辯 “then [words] appear to be obscure and without distinctions” *Hanfeizi* 韓非子 (Master Hanfei) 3/5/10 where it is glossed as *mo* 昧 (obscure) by Yu [1932] 2009, 647.

of *zao* 造 * $[dz^f]u?$, which matches the reading *cao* 曹 * $N-ts^f u$ quite well. Among the early graphic variants of *zao* 造, in fact, we find the graph 𣪠𣪡 (*jicheng* 集成 11023), whose semantic component 戈 is sometimes found to be equivalent to the signific 父 of the graph 𣪢 (synonymous significs, Park 2016, 313). This hypothesis is further supported by the Qinghua **Chi zheng zhi dao* 治政之道 (The Way of Rectifying the Government) manuscript slips nos. 34, 37 (see QH9), where the graph 𣪢 is in fact used as *zao* 造.

The character *zao* 造 * $[dz^f]u?$ is said to take itself *gao* 告 as its phonophore in the *Shuowen jiezi*.³⁵ Nonetheless, Chen Jian (2006, 100) has clearly shown how the component *gao* 告, already found in bronze inscriptions, is the graphic evolution of an early component *cao* 艸 * $[ts^h]u?$ functioning as phonophore.³⁶

As for the second character *Mo*, the picture is much more complicated: the spelling with the phonophore *sui* 歲 * $s-q^{wh}at-s$ could be subsequent to the evolution of the cluster * $k.m$ into kw , a phenomenon attested in the evolution of other words from OC to the MC stage: e.g. 袂 * $k.m^f et$ > MC $kwet$ (Sagart, Baxter, Beaudouin 2022). This usage suggests a late datation of this spelling and accounts for its absence in the *Cao Mo zhi zhen* manuscripts.

The manuscript version of the *Sunzi bingfa* 孫子兵法 (Master Sun's Art of War) excavated at Yinqueshan 銀雀山 (hereafter, YQS) helps us in dating this evolution to have taken place at least by the early second century BCE (*terminus ante quem*).³⁷ General Cao Mo is in fact mentioned in *Sunzi* A11/12/5 and his name is attested on YQS slips written with the phonophore *sui* 歲 * $s-q^{wh}at-s$ (YQS 1985, 21).

As for the character *mie* 蔑 (tiny, discard, reject, poor sighted), it cannot be associated with an *-at rhyme if we base our investigation uniquely on its *Guangyun* spelling (i.e. *met*) (*Guangyun* 1958, 496). Nonetheless, it is interesting to notice that some characters within the same string of homophones of *mo* 末 MC *mat* given in the *Guangyun* actually share *mie* 蔑 as phonophore: *mie* 醜, *mo* 糲, *mo* 濶, *mie* 鬻 (*Guangyun* 1958, 497). This implies that indeed these entries can be reconstructed with an OC *-at rhyme. Furthermore, a gloss preserved in the *Xiao Erya* 小爾雅 (Little *Erya* late third century BCE) and a gloss by Duan Yucai to the *Shuowen jiezi* might provide a clue.

35 *cong chuo gao sheng* 从詛告聲 (derived from *chuo*, *gao* is the phonophore; Author's transl.) (*Shuowen jiezi* 1983, 71).

36 Chen Jian's finding was preceded by Ônishi (2006), who also pointed to a similar conclusion.

37 The corpus of Yinqueshan bamboo manuscripts originated from the archaeological excavation of two Western Han tombs, namely tomb no. 1 and tomb no. 2 at Yinqueshan (Shandong 山東 Province) in 1972. The tombs have been dated to 140-118 BCE (tomb no. 1) and 134-118 (tomb no. 2). The vast majority of unearthened texts, almost 5 thousand bamboo slips, come from tomb no. 1. For more details see Liu et al. 2019, 33-6.

The entry *mie* 蔑 is said to be “the same as *mo* 末” (*mo ye* 末也) in the *Xiao Erya* (in *Kangxi zidian* 2015, 1410), while Duan Yucai states that this is “an allograph of *mo* 昧” (*tong zuo mo* 通作昧 *Shuowen jiezi* 1983, 145), another character meaning ‘to be poor-eyed’.

These glosses, along with the usage attested in the manuscripts, suggest that the character *mie* 蔑 once also had a reading *mʼat, which had already been lost by the time of composition of the *Qieyun*, but was retained in some characters which take it as their phonophore.

As for the character *wan* 萬 (ten-thousands), – which also has a *mo* reading in Mandarin, generally employed in surnames (e.g. Moqi 万俟) – it matches the OC *-at rhyme of the other three phonophores only in the medial vowel, but not in the final consonant, though both *-n and *-t are acute codas. The phonophore *wan/mo* 萬 is thus in a *dui zhuan* 對轉 relation with the other three phonophores employed for the name of the Lu general.³⁸ Yet there are some characters within BS reconstruction that though having *wan/mo* 萬 as a phonophore, are reconstructed as *-at: e.g. *mai* 邁 *mʼrat-s.

Interestingly, the very well-known allograph *wan* 万 is usually written in the manuscripts as *mian* 𠂔𠂔, which is glossed as *bu jian* 不見 (to be blind, unable to see) in the *Shuowen jiezi* (1983, 423), resembling closely the meaning given for the entries *mie* 蔑 and *mo* 昧, both indicating a poor sight.³⁹

e.g. GD Tang Yu zhi dao 唐虞之道 (The Way of Tang and Yu) slip
no. 27: 𠂔 (万)勿 (物)𠂔 (皆)𠂔 (暗)

The Ten-Thousand beings are all obscure.

Regardless of the scenario, the use of *mie* 蔑 and *wan/mo* 萬 as phonophores for a *mat syllable type continues to serve as compelling evidence that requires careful examination. This intriguing instance of phonetic borrowing undoubtedly merits further investigation and discussion.

³⁸ I.e. “[The characters] share the same nuclear vowel, and their ending consonants share the same place of articulation” (*yuanyin xiangtong er yunwei de fayin buwei ye xiangtong* 元音相同而韻尾的發音部位也相同 Wang [1982] 2014, 13).

³⁹ *Mie*, *lao mu wu jing ye* 蔑, 勞目無精也 (fatigued eyes, lacking energy; Author’s transl.); *mo* 昧: *mu bu ming ye* 目不明也 (when the eyes are not clear; Author’s transl.).

5 Conclusive Remarks

By looking at some informative examples, this paper has tried to explore the potential of systematically including palaeographic sources as an integral part of the methodology underlying current reconstructions of OC focusing on the phenomenon of phonetic borrowing, which is extremely frequent in early texts.

As the examples discussed have shown, the phonetic loans attested in early manuscripts can sometimes prove to be an essential tool both for reconstructing items *ex novo*, as well as for questioning and verifying some OC forms currently included in phonological reconstructions. On the other hand, a deep understanding of OC phonology turns out to be an irreplaceable tool for palaeographers and philologists to correctly transcribe and read early sources. A more porous boundary between these fields is clearly needed. This paper has tried to take a modest step in this direction.

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