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► **To cite this version:**

Guillaume Jacques. On the nature of morphological alternations in Archaic Chinese and their relevance to morphosyntax. *Bulletin of the School of Oriental and African Studies*, 2022, pp.1-20. 10.1017/S0041977X22000854 . halshs-03926631

**HAL Id: halshs-03926631**

**<https://shs.hal.science/halshs-03926631>**

Submitted on 6 Jan 2023

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# On the nature of morphological alternations in Archaic Chinese and their relevance to morphosyntax

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*Bulletin of the School of Oriental and African Studies*, DOI: <https://doi.org/10.1017/S0041977X22000854>

**ABSTRACT:** While sound glosses from the Six Dynasties and early Tang provide direct evidence for morphological alternations in Archaic Chinese, studies on the syntax of this language generally disregard these data. This neglect is due in part to perceived unreliability of these sound glosses. In this paper, I first argue that the arguments against their reliability do not stand scrutiny, and that they are not a simple philological curiosity, but have the potential to enrich studies on Archaic Chinese syntax, and plea for more collaboration between syntacticians and historical phonologists.

**KEYWORDS:** Old Chinese, Archaic Chinese, Middle Chinese morphology, nominalization, passive, tonal alternation, voicing alternation

## 1 Introduction

While a considerable amount of research has been devoted to the grammar of Archaic Chinese<sup>1</sup> since von der Gabelentz (1881), it is striking that the study of morphological alternations on the one hand, and of syntax on the other hand, have been led as two independent disciplines, with little interaction between them, even in the work of scholars such as Zhou Fagao, Mei Tsulin or Edwin Pulleyblank who have contributed to both fields.

The exact amount of morphology that can be reconstructed for pre-Han Chinese remains a controversial matter: some scholars posit a rich system of affixes (Sagart 1999), while others treat Archaic Chinese as devoid of morphological alternations (Zádrapa 2011). I argue in this paper that, regardless of which system of Archaic Chinese reconstruction one adopts, the voicing and tonal alternations are incontrovertible evidence showing that

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<sup>1</sup>While contemporary phonologists refer to the pre-Qin Chinese language as ‘Old Chinese’, syntacticians rather use ‘Archaic Chinese’ (Aldridge 2013b, Peyraube 2017), a term which Karlgren (1954) himself employed. Since this paper is intended to a broader readership, I adopt the latter in this paper.

this language was not purely isolating. Moreover, this morphology is not just a matter of word formation, but also has consequences for syntax, and is in particular incompatible with the notion of Archaic Chinese as a ‘pre-categorical’ language (Bisang 2008, Sun 2020).

## 2 Tonal and voicing alternations in Archaic Chinese

Given the fact that the phonological reconstruction is still a debated topic, (Baxter and Sagart 2014, Schuessler 2015), I discuss the question of morphological reconstruction mainly from the point of view of Middle Chinese, a language whose phonological system is well understood, transcribed using a version of Baxter’s (1992) system converted to IPA.<sup>2</sup> Archaic Chinese reconstruction is only briefly mentioned when absolutely necessary.

In this section, I present examples of morphological alternations found in Archaic Chinese texts, and their cognates in modern Sinitic languages. I additionally show that, although various scholars have argued since the XVIIth century that these alternations were spurious and invented by Han and Six-Dynasties scholars, none of the arguments stand close scrutiny.

### 2.1 The *Jingdian shiwen*

Our main source on the morphological alternations in Archaic Chinese is the 經典釋文 *Jingdian shiwen*, a collection of sound glosses on pre-Han classical texts by the Tang dynasty scholar Lu Deming 陸德明 (556-630).<sup>3</sup>

This work records the pronunciation of rare characters, or of characters with several alternative readings, using either the *fanqie* 反切 method (glossing pronunciation with two characters, the first indicating the initial consonant, and the second one the rhyme)<sup>4</sup> or directly glossing pronunciation with an homophonous character.

Two main types of morphological alternations recorded in this book have been systematically studied by a considerable number of scholars (Downer 1959, Zhou 1962, Mei 1980, Schuessler 1985, Sun 2007, Jīn 2006, Bi 2014, Wang 2014, Baxter and Sagart 2014), illustrated by a few examples in Table 1.

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<sup>2</sup>Any system of Middle Chinese transcription which indicates all phonemic contrast could be have been used instead.

<sup>3</sup>Other sources include the 史記索隱 *Shiji suoyin* by Sima Zhen (679-732), which provides sound glosses on the *Shiji*, but the density of glosses in the text is lower than in the *Jingdian shiwen*. Earlier sources do exist, but do not systematically indicate the readings in a continuous text, and are thus of limited relevance to syntax.

<sup>4</sup>For instance, the character 敗 *pæjH* ‘defeat’ is given the *fanqie* gloss 必邁 *pjit + mæjH* → *p + æjH*.

The most frequent type of alternation involves a change from level, rising and entering tones to the departing tone.<sup>5</sup> This alternation has seven or eight distinct functions, including nominalization (for instance 數 *ʃjuX* ‘count’ → *ʃjuH* ‘number’) and intransitivization (轉 *tjwenX* ‘(make) turn’ (transitive) → 轉 *tjwenH* ‘turn’).<sup>6</sup>

Second, we find examples of a voicing alternation involving initial obstruents: the form with an unvoiced onset is transitive, and its voiced counterpart is intransitive, as in 折 *tɕet* ‘break’ (transitive) vs. 折 *dɕet* ‘break’ (intransitive) or 敗 *pæjH* ‘defeat’ vs. 敗 *bæjH* ‘be defeated’. In addition, the velar *k*- alternates with the voiced fricative *ɣ*- in Middle Chinese (繫 *kejH* ‘attach (transitive)’ vs. 繫 *yejH* ‘be attached’).

Table 1: Examples of morphological alternations inherited from Middle Chinese and preserved in modern Sinitic languages

	Meaning	Mandarin	Cantonese	Middle Chinese
折	break (transitive)	<i>zhé</i>	<i>tsit<sup>D1</sup></i>	<i>tɕet</i>
	break (intransitive)	<i>shé</i>	<i>sit<sup>D2</sup></i>	<i>dɕet</i>
繫	attach (transitive)	<i>jì</i>	<i>kei<sup>C1</sup></i>	<i>kejH</i>
	be attached (intransitive)	<i>xì</i>	<i>hei<sup>C2</sup></i>	<i>yejH</i>
轉	turn (transitive)	<i>zhuǎn</i>	<i>tsyn<sup>B1</sup></i>	<i>tjwenX</i>
	turn (intransitive)	<i>zhuàn</i>	<i>tsyn<sup>C1</sup></i>	<i>tjwenH</i>
數	count	<i>shǔ</i>	<i>sou<sup>B1</sup></i>	<i>ʃjuX</i>
	number	<i>shù</i>	<i>sou<sup>C1</sup></i>	<i>ʃjuH</i>

There are in addition a number of less common, and poorly understood, alternations involving vowels or aspiration (see Schuessler 2007: 51-78 for possible examples), but these will not be treated in the present paper.

## 2.2 Morphological alternations and analogy

It is undeniable that alternations originating from voicing or tonal alternations in Middle Chinese are present in standard Mandarin and most Sinitic languages for which appropriate documentation exists, as illustrated in Table 1 above.

Since the verbs in Table 1 belong to colloquial vocabulary, the idea that these alternations are purely scholarly inventions (§2.3.2) cannot be accepted: it is unrealistic to suppose that alternative readings invented by

<sup>5</sup>The four tones of Middle Chinese were *pingsheng* 平聲 ‘level tone’, *shangsheng* 上聲 ‘rising tone’, *qusheng* 去聲 ‘departing tone’, and *rusheng* 入聲 ‘entering tone’, respectively noted by zero, -X, -H and final -p/-t/-k in Baxter’s (1992) transcription.

<sup>6</sup>See §3 below for additional examples.

Table 2: Backformation of the verb 背 *bēi* ‘carry on the back’ in Mandarin

Base form	Derived form
鑽 <i>zuān</i> ‘drill (v), bore into’	鑽 <i>zuàn</i> ‘drill (n)’
∅ ⇒ <i>bēi</i> ‘carry on the back’	背 <i>bèi</i> ‘back’

scholars could have penetrated the colloquial layer when literacy was not universal.

Alternative readings shared by both Mandarin and Middle Chinese are however rare. Most of the alternations in the *Jingdian shiwen* have left no trace in Mandarin and other Sinitic languages. However, this in itself is not surprising in view of the fact that even the pairs in Table 1 are not maintained by all Mandarin speakers. Some people generalize the transitive 折 *zhé* ‘break’ even to describe spontaneous breaking, or use 繫 *xì* for transitive uses, saying for instance 繫安全帶 *xì ānquándài* ‘fasten your seat belt’ instead of *jì ānquándài*.

This variation is due to the generalization of one of the two members of the pair (which can be either the transitive, or the intransitive verb), an elementary case of analogical levelling. These fossilized alternations are comparable to irregular verbs, and their loss can be viewed as a type of regularization, by analogy with non-alternating labile verbs, which constitute the majority.

However, not all alternations found in modern Sinitic languages necessarily go back to Middle Chinese or earlier. A particularly telling example is that of 背, which has two Middle Chinese readings *pwojH* (in the meaning ‘back’) and *bwojH* (‘leave in one’s rear’,<sup>7</sup> betray’). In Mandarin, the character 背 has two readings, *bèi* (corresponding to the two previous nominal and verbal meanings), and also *bēi* ‘carry on the back’, a pronunciation without support from Middle Chinese, and absent from Cantonese and other Sinitic languages. The expected Middle Chinese corresponding to *bēi* would be †*pwoj*, but this reading is absent from all ancient sources, and *bēi* is not listed in dictionaries before the 1930s (Shi 1999).<sup>8</sup>

Table 2 provides an account of how the verb *bēi* ‘carry on the back’ was created within Mandarin in the early 20th century: 背 *bèi* ‘back’ was reanalyzed as an instrumental nominalization like 鑽 *zuàn* ‘drill (n)’, and a verb *bēi* ‘carry on the back’ with level tone was invented by backformation, following the pattern of the alternation between 鑽 *zuān* ‘drill (v)’ and 鑽 *zuàn*.

<sup>7</sup>This meaning is found for instance in *Zuozhuan* (Huan 9) 鄧人逐之，背巴師 ‘The men of Deng charged after them, leaving the Ba troops in their rear.’ (Durrant et al. 2016: 106-107).

<sup>8</sup>In addition, 背 *pwojH* belongs to the phonetic series of 北 *pok* and its rhyme goes back to \*-k-s (Baxter and Sagart 2014: 230), showing that the *pingsheng* reading cannot be old.

Thus, analogical levelling can have taken place between Middle Chinese and Mandarin, and similar phenomena may have existed between Archaic and Middle Chinese. Nevertheless, for analogical extensions of alternations and backformation such as that illustrated above to take place, a kernel of inherited alternations must have existed in the first place, and the alternations found in Middle Chinese cannot have been entirely made up out of nothing.

### 2.3 Arguments against the reliability of the *Jingdian shiwen*

The neglect of the *Jingdian Shiwen* in studies on Archaic Chinese syntax is partly explainable by a perceived lack of reliability of the readings contained in this source (Zádrapa 2011: 71-76). In this section, I present the main arguments that have appeared in print against the reliability of the *Jingdian shiwen*, and provide counterarguments.

#### 2.3.1 Absence in modern Sinitic languages

One line of argument against the value of *Jingdian shiwen* comes from the fact that few of the variant readings it contains are attested in Mandarin, and that even among those that are recorded, they are mere dictionary pronunciations, and do not exist in the spoken language. As an example of this phenomenon, Zádrapa (2011: 74) cites the alternation between the noun 衣 *yī* ‘clothes’ (from Middle Chinese *ʔij*) and the transitive verb 衣 *yī* ‘wear’ (from *ʔijH*): the latter is obsolete and rarely distinguished even by scholars when reading Classical Chinese.

However, the obsolescence of this reading is expected in view of the fact that the verb 衣 *ʔijH* ‘wear’ has been replaced in the spoken language by 著 *tʃak* (since the Han dynasty, still in use in Cantonese) and by 穿 *tɕʰwen* (since the Tang dynasty). While the reading *ʔijH* is not living in any mainstream Sinitic language, it has been preserved by Bai (Gong 2015: 2). For instance, in Jianchuan Bai we have *ji*<sup>21</sup> ‘wear’ vs *ji*<sup>55</sup> ‘clothes’ with the regular tonal correspondences.

This remarkable archaism in the Bai language, regardless of the controversy regarding the phylogenetic status of this language,<sup>9</sup> shows that the verb 衣 *ʔijH* cannot be a scholarly invention. The verb 衣 *ʔijH* ‘wear’ is attested already in the *Shijing*, and occurs in a *figura etymologica* with its cognate noun, as in (1).

- (1) 衣錦褰衣

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<sup>9</sup>Regardless of whether Bai is a non-Sinitic language whose native vocabulary has been almost entirely replaced by several layers of Chinese (Lee and Sagart 2008), or an outlier Sinitic language (Starostin 1995, Gong 2015), the fact that it is not a literary language, means that if 衣 *ʔijH* was an entirely artificial reading, it could not have succeeded to become the main verb used in that language.

ʔjiH kimX k<sup>h</sup>wɛŋX ʔji  
wear brocade slip-over clothes

‘(Lady Wei Jiang) is dressed in a brocade robe and an unlined slip-over robe.’ (Shijing, 57)

The same construction still exists in Bai, where the collocation *ji*<sup>21</sup> *ji*<sup>55</sup> ‘wear clothes’ is attested.

This example illustrates the fact that Mandarin is not particularly conservative when it comes to preserving traces of morphological alternations, and that a broader survey of alternations in other Sinitic languages (including Bai), or in borrowings from Chinese into Hmong-Mien, Kra-Dai or Vietic languages, would be needed to evaluate the proportion of readings in the *Jingdian shiwen* which are indeed not confirmed by data from modern languages.

### 2.3.2 Doubts about the reality of some of the alternations in the writings of early philologists

It is a well-known fact that Qing dynasty philologists such as Gu Yanwu and Qian Daxin believed that the alternations recorded in the *Jingdian shiwen* came into existence after the Han dynasty (see for instance Shen 2007: 104). However, such a hypersceptical view does not explain how these alternations could have come into being, and it is not compatible with the existence of traces of such alternations in Bai (§2.3.1).

Moreover, there are cases when tonal and voicing alternations are reflected by distinct characters, such as 受 *dzuwX* ‘receive’ and its causative counterpart 授 *dzuwH* ‘offer’, a distinction already attested in the Oracle bone inscriptions (Takashima 2013), *pace* Djamouri 2013).

Among the reasons for the scepticism of Qing scholars, we find an oft-quoted passage by the Northern Qi scholar Yan Zhitui: ‘Scholars from the Jiangnan area, when they read the *Zuozhuan*, have a made-up rule that was orally transmitted, whereby every time one’s army is defeated, the verb ‘defeat’ 敗 read *bæjH* (蒲 *bu*+邁 *mæjH*), and whenever one defeats an enemy army, it is read *pæjH* (補 *puX*+敗 *bæjH*). However, in all transmitted documents, I have never seen the reading *pæjH*. In Xu Xianmin (Xu Miao)’s reading of the *Zuozhuan*, there is only one example of this reading, and it has nothing to do with the difference between ‘be defeated’ and ‘defeat someone’, (showing that the reading rule of Jiangnan scholars) is far-fetched and implausible.’<sup>10</sup>

In this passage however, Yan Zhitui does not express doubts on the system of alternations as a whole, but more specifically on the reading of

<sup>10</sup> “江南學士讀《左傳》，口相傳述，自為凡例，軍自敗曰敗，打破人軍曰敗。諸記傳未見補敗反，徐仙民讀《左傳》，唯一處有此音，又不言自敗、敗人之別，此為穿鑿耳。”

the character 敗 in the tradition of the Jiangnan area. His stated reason for refusing to accept their tradition is the absence of such alternation in Xu Miao’s work, and presumably in his own speech. However, rather than a testimony of the unreliability of the *Jingdian shiwen*, this passage shows that the Jiangnan dialect had preserved a distinction lost in Yan Zhitui and Xu Miao’s dialects (both scholars were from nowadays Shandong, though the latter lived nearly centuries before the former), a phenomenon no more surprising that the obsolescence of the reading 衣 *yì* ‘wear’ in Mandarin mentioned above (§2.3.1).

A second line of argument by Gu Yanwu against the reality of the alternations concerns the example of 惡 *?ak* ‘evil’ and 惡 *?uH* ‘hate’. Gu Yanwu points out that the character 惡, used as a noun ‘evil, wrongdoings’ in the Chuci (2) unexpectedly rhymes with 固 *kuH* and 寤 *ŋuH*. It is clear that in this passage 惡 is a noun, since it serves as the object of 稱 *tɕ<sup>h</sup>ij* ‘proclaim’ and is opposed to the noun 美 *mijX* ‘beauty, good quality’.<sup>11</sup>

- (2) 世溷濁而嫉賢兮，好蔽美而稱惡

*ɕejH ywonH.qæwk ni dzit yen yej, xawH pjiejH*  
 world murky LNK envy worthy INTERJ like hide  
*mijX ni tɕ<sup>h</sup>ij ?ak/?uH*  
 good.quality LNK proclaim defect

‘For the world is impure and envious of the able, Eager to hide men’s good and make much of their ill.’ (Lisao, Hawkes 1985)

For the rhyme to work, a Middle Chinese reading *?uH* would be expected, running counter to the function of this reading in the *Shiwen*. Gu Yanwu then concludes that ‘From this we know that the difference between the *qusheng* and *rusheng* readings (of the character 惡) is just a matter of weak and strong pronunciation, and there is no difference between them.’<sup>12</sup> This statement can be interpreted as the hypothesis that these two readings were in free variation in Archaic Chinese. This example (and other rhymes from the Han dynasty adduced by Gu Yanwu), however, does not prove that the alternation between *?ak* ‘evil’ and *?uH* ‘hate’ in the *Shiwen* is spurious.

The reading of 惡 implied by the rhyme in (2) is not outlandish when one carefully investigates the glosses of the *Shiwen*. In example (3) from the Liji for example, 惡 means ‘bad quality, defect’ and is clearly opposed to 美 *mijX* ‘beauty, good quality’ as in (2) above. However, the sound gloss in the *Shiwen* is 烏路反又如字, which contains the reading *?uH* (based on the *fanqie* spelling *?u+luH*) and the additional note 又如字 ‘also (read by some people as) the default reading’, in this case *?ak*.

<sup>11</sup>For philological arguments against another one of Gu Yanwu’s examples, see also Sun (2007: 412), which however does not address (2).

<sup>12</sup>乃知去入之別，不過發言輕重之間，而非有此疆爾界之分也。

(3) 君子知至學之難易，而知其美惡，然後能博喻

*kjun.tsiX tje tciH yæwk tci nan jeH, ni tje gi*  
 noble.man know attain learn GEN difficult easy LNK know its  
*mijX ʔuH/ʔak jen.yuwX noŋ pak hjuH*  
 good.quality defect then can vary teaching

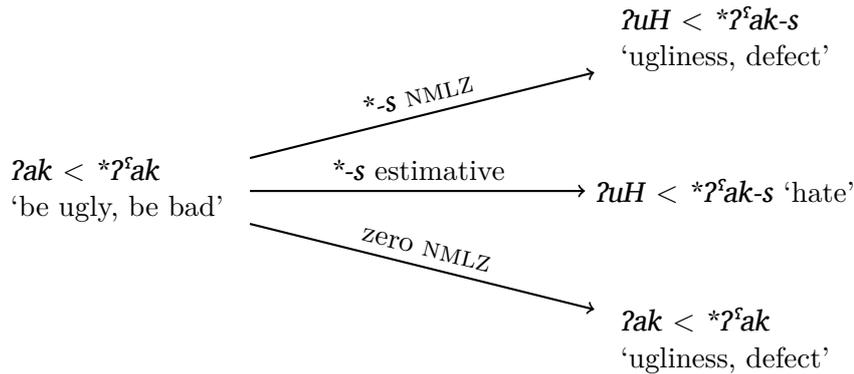
‘When a man of talents and virtue knows the difficulty (on the one hand) and the facility (on the other) in the attainment of learning, and knows (also) the good and the bad qualities (of his pupils), he can vary his methods of teaching.’ (Liji, Xueji 11, translation by Legge)

Among the two alternative readings proposed by the *Shiwen*, the first one 惡 *ʔuH* has the *qusheng* reading, and is clearly in nominal function, exactly like the rhyming word in (2).

Thus, the Chuci rhyme in (2) supports, rather than discredits, the value of the *Shiwen* as preserving traces of morphological alternations. What these examples demonstrate is that the function of the *qusheng* alternation in the case of 惡 *ʔuH* is not limited to verbalizing denominalization.

Rather, (3) indicates that there were actually *two* abstract nouns meaning ‘defect, ugliness’, derived from the adjective ‘be bad, be ugly’, one derived by zero-derivation, and the other one by *qusheng* alternation (originating from a *\*-s* nominalization suffix through a *\*-h* stage according to Haudricourt 1954), as represented in Figure 1. The noun *ʔuH* ‘ugliness, defect’ however disappeared to the advantage of the former.

Figure 1: Derivations of the readings of 惡 *\*ʔak*



### 2.3.3 Absence of mention in pre-Han texts

Another possible objection against the existence of morphological alternations in Archaic Chinese is the absence of any mention of these phenomena

in pre-Han texts. This argument (raised, but not strongly endorsed by Braner 2002, 2003) is however the weakest of all: there is likewise no mention of a distinction between main vs. subordinate clauses in these texts, even if nobody would doubt that Archaic Chinese had complement and relative clauses.

#### 2.3.4 Temporal gap

Chinese is not the only language with a gap of more than one millenium between a given corpus of texts written in a defective script and the creation of a full system of phonetic annotations. The Masoretic vocalization was created eight centuries after the death of Hebrew as a spoken language, and the time gap between the redaction of the earliest parts of the Tanakh and the vocalization is comparable to that between Western Zhou texts such as the *Shijing* and the sound glosses in the *Shiwen*. Yet, despite some scepticism on the value of the Masoretic text by some early XXth century Bible scholars, the present consensus is that this distrust is misguided, and that the Masoretic vocalization, while distinct from the pronunciation of Hebrew in antiquity, regularly evolved from an authentic form of Hebrew (Suchard 2019: 21-23).

While some degree of healthy scepticism on the value of the readings is necessary, as mentioned above, neglecting the *Shiwen* when studying Archaic Chinese syntax is no different than attempting at analyzing Hebrew syntax without the vocalization.

#### 2.4 Non-specificity

Another argument to minimize the value of morphological alternations is the perceived non-specificity of the *qusheng* derivation, since it can derive nouns from verbs, verbs from nouns, intransitive verbs from transitive ones, and transitive verbs from intransitive ones. As Downer (1959: 262) put it: ‘The present writer holds the opinion that with our present knowledge of Classical Chinese, it is better to regard *chiuhsheng* derivation not as a remnant of a former inflectional system of the Indo-European type, but simply as a system of derivation and nothing more. When new words were needed, they were created by pronouncing the basic word in the *chiuhsheng*. The grammatical regularity found in many cases would then be in a way fortuitous, being the result not of grammatical inflection, but of the need to create new words.’

A major drawback in Downer’s approach however is to treat Archaic Chinese morphology as an isolated problem, without any reference to non-Chinese Sino-Tibetan languages.

In Hebrew, one of the arguments in favour of the genuineness of the Masoretic vocalization precisely comes from Semitic comparative phonology and morphology (Suchard 2019: 23). In a similar way, a satisfactory as-

Table 3: Possible Sino-Tibetan comparisons for the functions of the *qusheng*

Functions	External comparison	
Nominalization	Tibetan <b>-s</b>	(Forrest 1960)
	Situ Rgyalrong <b>-s</b>	(?)
Causative	Limbu <b>-s</b>	(Michailovsky 1985)
Applicative	Limbu <b>-t</b>	(Michailovsky 1985)
	Situ Rgyalrong <b>-t</b>	(Zhang 2020: 363)
Passive/Antipassive	Kiranti reflexive <b>-si</b>	(Jacques et al. 2016)
	Dulong <b>-ɕu</b>	(LaPolla and Yang 2004)
Adverbialization	Situ Rgyalrong locative <b>-s</b>	(Zhang 2020: 338)
	Tibetan instrumental <b>-s</b>	
Denominal	West-Himalayish <b>-t</b>	(Widmer 2014: 426)
	Kiranti <b>-t</b>	(Jacques 2017)

assessment of Archaic Chinese morphology cannot be undertaken in isolation from other languages of the Sino-Tibetan family.

Downer wrote these words before Forrest (1960) showed, based on Haudricourt’s (1954) theory of tonogenesis, that the nominalization function of the *qusheng* could be compared to the **-s** nominalizing suffix in Tibetan (on which, see Zhang 2009, Hill 2014).

In addition, nominalization is not the only function of the *qusheng* derivation which has possible comparanda in other Sino-Tibetan languages. As shown in Jacques (2016), sibilant or dental stop suffixes with functions similar or identical to that of the *qusheng* derivation are found in morphologically richer languages of the Sino-Tibetan family, especially Rgyalrongic, Kiranti, Nungish and West-Himalayish (Table 3).

The idea that the *qusheng* could originate in part from dental stops, first suggested by Schuessler (2007: 42), is based on two observations. First, *qusheng* in Middle Chinese is much too frequent to exclusively originate from **\*-s**: in Archaic Chinese reconstruction systems which adopt this hypothesis, the quantity of **\*-s** far exceeds anything found in the rest of the Trans-Himalayan family, including Rgyalrongic and Tibetan. Second, from a typological perspective, the dental stop coda alternates with **-s** when following consonants in many languages of the family, including Tibetan (due to a sound change **\*-d** → **-s** / {m,b,ŋ,g}\_#, Coblin 1976), Kiranti (in particular Khaling and Dumi, see the internal reconstruction in Jacques et al. 2012), and West Himalayish (Martinez 2021).

Rather than a vague system of derivation insensitive to parts of speech, what these comparisons imply is that the remnants of morphology preserved in Middle Chinese glosses is the result of the convergence of unrelated suffixes

due to the drastic phonetic attrition that has occurred between Archaic Chinese and Middle Chinese.

While Chinese is not phylogenetically close to either Gyalrongic or Kiranti, sharing with them only a limited number of cognates (Zhang et al. 2019, Sagart et al. 2019), the exuberant verbal morphology of these languages offers a framework against which hypotheses on the interpretation of morphological alternations can be tested (Gong 2017, ?), and makes it possible to go beyond the circularity of Chinese-internal analysis.

### 3 The interaction of morphology and syntax in Archaic Chinese

Although the alternations described in section 2 only involve a minority of nouns and verbs, they occur in a significant part of the most common vocabulary of Archaic Chinese, and their use is systematic.

I focus in this section to two of the most common functions of the *qusheng* alternation: nominalization and passivization, and then conclude that syntactic parameters such as transitivity and the noun-verb distinction are not as irrelevant to Archaic Chinese syntax as might seem at first glance.

#### 3.1 Nominalization

Among the functions of the *qusheng* derivation described by Downer (1959), one of the most prominent ones is nominalization, as mentioned above in §2.1. For instance, the verb 守 *ɕuwX* ‘defend, guard’ (4) has the reading *ɕuwH*<sup>13</sup> when nominalized, either as agent nominalization ‘guard’ (5), or a patient nominalization ‘area that is being guarded by the country’ (6).

- (4) 晉侯使賈華伐屈。夷吾不能守

*tsinH yuw siX kæX-ywæ bjot gjut. jij-ŋu pjuw noŋ ɕuwX*  
 Jin prince send Jia.Hua attack Qu Yiwu NEG can defend

‘The Prince of Jin sent Jia Hua to attack Qu. Yiwu was not able to defend Qu.’ (*Zuozhuan*, Xi, 6)

- (5) 居者為社稷之守

*kju tɕæX hjwe dʒæX.tsik tɕi ɕuwH*  
 remain NMLZ act.as altar GEN defend:NMLZ

‘Those who remained in the domain were guardians of the altars of the domain.’ (*Zuozhuan*, Xi 24)

<sup>13</sup>It is given the sound glosses 守音狩 or 守, 手又反.

(6) 王巡虢守

*hjawŋ zwin kwæk ɕuwH*  
kin inspect Guo defend:NMLZ

‘The king went on an inspection tour of the holdings of the domain of Guo.’ (*Zuozhuan*, Zhuang 21)

However, most verbs are nominalized without any tonal alternation. This is in particular the case of verbs already in *qusheng* tone, which have nothing to alternate with. For instance, the transitive verb 患 *ywænH* ‘be worried about, be troubled by’ (7) has the nominal forms ‘trouble, disaster’ and ‘person in distress’ as in (8), which are also pronounced *ywænH*.

(7) 楚師背鄙而舍，晉侯患之

*tʂ<sup>h</sup>joX ʂij bwojH ywej ju ɕæH tsinH yuw*  
Chu army turn.back treacherous.terrain LNK camp Jin prince  
*ywænH tɕi*  
worry.about DEM

‘The Chu troops backed up into treacherous terrain and bivouacked. The Prince of Jin was worried about this.’ (*Zuozhuan*, Xi, 28)

(8) 收介特，救災患

*ɕuw keɕH-dok kjuwH tsoj-ywænH*  
gather single-lonely save disaster-sufferer

‘He gathered together the single and lonely and succored those who had suffered from natural disasters.’ (*Zuozhuan*, Zhao, 14)

Zero conversion of verbs into nouns in Archaic Chinese (动词活用为名词, Chen 1922) is one of the line of argument in favour of the notion of Archaic Chinese as a ‘pre-categorial’ language (Bisang 2008, Zádrapa 2011, Sun 2020).

However, we find in Archaic Chinese not only verbs turned into nouns, but also entire phrases. For instance, in (9), 有禮 *hjuwX lejX* does not mean ‘X has ritual property’, but rather ‘person having ritual property’.

(9) 服於有禮，社稷之衛也。

*bjuwk ʔjo [hjuwX lejX] dzæX.tsik tɕi hjewjH jæX*  
submit LOC have ritual.property altar GEN protect COP

‘I have heard that to submit to those who have ritual propriety is protection for the altars of the domain.’ (*Zuozhuan*, Xi, 33)

This noun phrase, which is frequent in the *Zuozhuan*, is a zero-marked relative clause, resulting from the elision of the nominalizer 者 *tɕæX*, a phenomenon pointed out by von der Gabelentz (1881: §477), but relatively neglected in the literature. The full relative without relativizer elision happens to be also attested (10).

- (10) 己則無禮，而討於有禮者

*kiX tsok mju lejX ji t<sup>h</sup>awX ʔjo hjuwX*  
 oneself then not.have ritual.property LNK chastise LOC have  
*lejX tɕæX*  
 ritual.property NMLZ

‘He himself is without ritual propriety, and he chastises those who do have ritual propriety.’ (*Zuozhuan*, Wen, 15)

This type of unmarked relative can be detected in particular when a negation is present, as in the case of 不服 *pjuw bjuwk* ‘(those who) do not submit’ in (11). The occurrence of this phrase in postverbal position, as the object of 討 *t<sup>h</sup>awX*, shows that 不服 *pjuw bjuwk* is a relative clause.

- (11) 會于溫，討不服

*ywajH hju ʔwon t<sup>h</sup>awX pjuw bjuwk*  
 meet LOC Wen chastise NEG submit

‘They met at Wen: this was to chastise those who would not submit.’ (*Zuozhuan*, Xi, 28)

The problem of zero-nominalization can thus be turned around: there is no difficulty in analyzing agent and abstract nominalizations as minimal relative clauses with elided 者 *tɕæX* nominalizer. Tonal alternation can thus serve as a criterion for true nominalization, as opposed to zero-relativization.

In other languages of the Sino-Tibetan family with productive affixal nominalization such as Tibetan or Japhug, zero nominalization (Hill 2019) or finite relative clauses with no overt mark of nominalization (Jacques 2021b: §23.2.2, 1258) have been documented, without any need to appeal to a notion of pre-categoriality.

### 3.2 Passivization, relativization and complementation

Another well-attested function of the *qusheng*, mentioned in §2.1 above, is turning a transitive verb into an intransitive one. Among these intransitivizing derivations, we find a few examples of antipassive (Jacques 2021a) and passive derivations.

For instance, the verb 使 *siX* ‘send, dispatch’, itself a denominal verb coming from the root reflected by the noun 吏 *liH* ‘official’ has the passive form 使 *siH* ‘be sent on a mission’.<sup>14</sup>

- (12) 其孫箴尹克黃使於齊，還及宋，聞亂。

*gi swon tɕim-jwinX kʰok-ɣwan siH ʔjo*  
 his grandson deputy.for.remonstrance Kehuang send:PASS LOC  
*dzej, ɣwæn ɡip sownH mjun lwanH*  
 Qi return reach Song hear troubles

‘His grandson, the deputy for remonstrance Kehuang, was sent on a mission to Qi. On his way back, by the time he reached Song, he had heard of the rebellion.’ (*Zuozhuan*, Xuan, 04)

This passive form is the one employed to derive the lexicalized relative clause 使者 *siH tɕæX* ‘envoy’, as illustrated by (13).<sup>15</sup>

- (13) 食使者而後食。

*ziH siH tɕæX ni yuwX zik*  
 CAUS:eat send.PASS NMLZ LNK after eat

‘It was only after he had fed the Jin envoy that he himself ate.’ (*Zuozhuan*, Cheng, 16)

The marker 者 *tɕæX* cannot be used to relativize objects on its own (Aldridge 2013a). Thus passivization here is a strategy to make the patient accessible to subject relativisation in 者 *tɕæX* (Keenan and Comrie 1977).

Passivization also affects complement clauses, as illustrated by (14) and (15), which both have 請 *tsʰjeŋX* ‘ask’ as complement-taking verb, and 使 *siX/H* as complement verb.

In (14), there is coreference between the transitive subject of 請 *tsʰjeŋX* and the intransitive subject of the passive 使 *siH* ‘be sent’.

- (14) 巫臣請使於吳。

*mju.dzin [tsʰjeŋX [siH ʔjo ɲu]]*  
 Wuchen ask send:PASS LOC Wu

‘Qu Wuchen asked to be sent on a mission to Wu.’ (*Zuozhuan*, Cheng, 7)

<sup>14</sup>The phonetic gloss is 所吏反. *s-joX+l-iH*.

<sup>15</sup>The phonetic gloss (音嗣使音所吏反) also indicates that the first 食 is in causative form *ziH* < \**s-m-lək-s* in this passage.

By contrast, in (15), there is no subject conference when the verb of the complement clause 使 *siX* ‘send, let’ is not passivized.

(15) 犯請於二子，請使女擇焉。

*bjomX ts<sup>h</sup>jeŋX ʔjo nijH tsiX ts<sup>h</sup>jeŋX siX njoX dæwk hjen*  
 Fan ask LOC two son ask let girl choose 3

‘Fan requested the two men to allow the girl to choose between them.’  
 (*Zuozhuan*, Zhao, 1)

### 3.3 Consequences for the syntax of Archaic Chinese

These examples show that the morphology of Archaic Chinese is not simply a matter of word formation, but that it is directly relevant to syntactic analysis.

It is true that many verbs lack a distinct passive form expressed by tonal or voicing alternation. For instance, the verb 拘 ‘retain, seize’, has only one reading *kju*, even in the passive relative clause 拘者 *kju tɕæX* ‘those who had been retained’, as in example (16) (see Luo and Wu 1983: 137).

(16) 及吳師至，[拘者]道之以伐武城，克之。

*gip ŋu siŋ tɕijH, [kju tɕæX] dawH tɕi jiX bjot*  
 reach Wu army arrive retain NMLZ lead.the.way DEM use attack  
*mjuX.dzɛŋ, k<sup>h</sup>ok tɕi*  
 Wucheng subdue DEM

‘When the Wu army arrived, the very ones who had been seized led it in an attack on Wucheng, and the Wu army took the settlement.’  
 (*Zuozhuan*, Ai, 8)

However, examples of passive relatives in 者 *tɕæX* without overt passivization marking are in fact uncommon in Archaic Chinese: apart from (16), there is but one clear example of relative clause of the same type in the *Zuozhuan*.<sup>16</sup>

Zero-passivization in Chinese is an instance of labiality, a phenomenon that is also widely observed in languages with overt marking of transitivity. In the Sino-Tibetan family for instance, although Limbu has a very elaborate polypersonal indexation system, a certain number of frequent verbs, such as *khutt-* ‘steal’, can be conjugated either transitively or intransitively without any additional derivational morphology, as illustrated by (17) and (18) (from van Driem 1991: 527).

<sup>16</sup>南冠而縶者 ‘That bound person with a southern cap’ (Cheng, 9).

- (17) *A-ndzum-ille*                      *sapla khutt-anj*  
 1SG.POSS-friend-ERG book steal-1SG.P.PST  
 ‘My friend robbed me of my book.’ (Limbu)
- (18) *Sapla khutt-ε*  
 book steal-PST:INTR  
 ‘The book was stolen.’ (Limbu)

Archaic Chinese syntax differs from that of Limbu in *degree* rather than nature. The fact that a majority of verbs are labile does not imply that transitivity is an irrelevant parameter in Archaic Chinese syntax, but rather that the morphosyntactic contexts where transitivity is relevant are fewer than in Limbu. Focusing precisely on the syntax of verbs whose passive and antipassive forms are recorded in the *Shiwen*, and studying their syntax in a systematic way, could bring new light on the whole field of Archaic Chinese syntax, and restore the distorted image of this language brought about by the habit of reading it in standard Mandarin.

#### 4 Phonology for a better philology: a proposal for good practices in Archaic Chinese syntax and textual editions

One of the main reasons for the neglect of tonal alternations in the studies on Archaic Chinese syntax is accessibility: the *Jingdian shiwen* in its present form indicates readings in a way that is opaque to non-specialists of Chinese historical phonology, and omits readings when a character should be read following the default pronunciation (如字) or when the alternative reading is considered obvious enough.

In order to democratize access to the *Shiwen*, historical phonologists should produce text editions of all classics with full annotation of all characters in Middle Chinese, including all the variant readings indicated in the *Shiwen*, as well as explicitly marking the characters with variant readings that are *not* glossed. As indicated above, glossing Archaic Chinese in Middle Chinese transcription is clearly anachronistic, but this way of doing things is sufficient to encode the morphological alternations directly relevant to syntax (at least those that can be recovered philologically), and in any case it is a necessary step if one aims at encoding whole texts in Archaic Chinese reconstruction.<sup>17</sup>

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<sup>17</sup>Given moreover that no reconstruction system of Archaic Chinese can ever be considered final, and that morphological contrasts not represented in Middle Chinese glosses cannot be directly recovered from texts, conversion to Archaic Chinese is less useful, and will always be subjected to revision, while conversion between Middle Chinese reconstructions is bijective.

In the following, I present two examples of how to make this data more readily available.

In example (19) from the *Zuozhuan*, sound glosses are added to the relevant character in the Chinese text, and are underlined in the Middle Chinese line. Characters that have several readings, but are not glossed in the *Shiwen* are marked in bold, and the default reading is chosen. Some sound glosses have scope over several sentences: for instance the mention 下同 ‘same below’ indicates that the character 壞 is to be read *kwejH* (音怪) not only in (19d), but also a few sentences later in (19e).

- (19) a. 晉侯夢大厲，  
*tsinH yuw mjuwŋH **dajH** ljejH*  
 ‘The Prince of Jin dreamed of a huge vengeful ghost
- b. 被皮寄反髮及地，搏音博膺而踊音勇，曰：  
*bjeH pjot gip dijH, pak ?iŋ ni jowŋX hjwot:*  
 with disheveled hair hanging to the ground. It beat its chest, leapt up and down, and said,
- c. 「殺余孫，不義。余得請於帝矣！」  
*ʃet jo swon, pjuw ŋjeH. jo tok ts<sup>h</sup>jeŋX ?jo tejH hiX!*  
 “For you to murder my descendants was unjust. I have the high god’s approval of my request for revenge!”
- d. 壞音怪，下同大門及寢門而入。  
***kwejH** **dajH** mwon gip ts<sup>h</sup>imX mwon ni nip.*  
 It smashed the main gate and the door to his private quarters and made its entry
- e. 公懼，入于室。又壞戶。  
*kuwŋ gjuH, nip hju cit. hjuwH **kwejH** yuX.*  
 Terrified, the lord entered the inner chamber, and the ghost smashed that door also.
- f. 公覺古孝反，召桑田巫。巫言如夢。  
*kuwŋ **kæwH**, **djewH** saŋ den mju. mju ŋjon jo mjuwŋH.*  
 The lord woke up and summoned the shaman of Sangtian. What the shaman described corresponded exactly to the dream.’ (*Zuozhuan*, Cheng, 10, Durrant et al. 2016: 786-787)

In this short passage, we observe several non-trivial morphological phenomena indicated by glosses: (i) the transitive verb 被 *bjeH* ‘be covered with’ derived from the noun 被 *bjeX* ‘covering’ by denominal *qusheng* derivation, (ii) the transitive form 壞 *kwejH* ‘destroy’ (from which the passive reading 壞 *ywejH* ‘be destroyed’ is derived by voicing alternation), and (iii) the

antipassive form 覺 *kæwH* ‘wake up’ from 覺 *kæwk* ‘perceive, make clear, realize’.

Example (20) from the *Shijing* illustrates that the density of glosses in this text is much higher than in the *Zuozhuan*. It is also significant in having several variant readings ascribed to the same character, with sources sometimes indicated. In the case of 干 (meaning here ‘protection’ or ‘shield’), the first phonetic glosses is the default reading (如字) *kan*, but Zheng Xuan glosses it as *yanH* (戶旦反) and Shen Xuan as *kanH* (音幹). Here, a rigorous text edition should not choose between the variant readings, but rather list them all and convert them to Middle Chinese reconstruction.<sup>18</sup> Superscript letters such as <sup>Z</sup> for Zheng Xuan or <sup>X</sup> for Xu Miao can be used as abbreviations to specify the source of the reading.

- (20) a. 肅肅菟他故反置音子斜反說文子余反、  
*sjuwk sjuwk t<sup>h</sup>uH tsjæ/tsjo<sup>SW</sup>*  
 ‘Carefully adjusted are the rabbit nets;  
 椽陟角反之丁丁陟耕反。  
*tæwk tçi tɛŋ tɛŋ*  
 Clang clang go the blows on the pegs.  
 赳居黠反武夫、  
*kjiwX kjiwX mjuX pju*  
 That stalwart, martial man  
 公侯干如字鄭戶旦反沈音幹城。  
*kuwŋ yuw kan/yanH<sup>Z</sup>/kanH<sup>S</sup> dʒeŋ*  
 Might be shield and wall to his prince.’ (Shijing, 7, Legge)

A systematic conversion of the complete corpus of the texts glossed in the *Shiwen* (and their commentaries) into Middle Chinese cannot be entirely automated: the alignment of the glosses to the text is not trivial, notably because some sound glosses strand over several sentences (as in (19e) above), and also because readings judged ‘obvious’ by the compiler of the *Shiwen* have not been systematically indicated.

## 5 Conclusion

The general practice in Archaic Chinese syntax to transcribe transmitted texts in Mandarin pronunciation, followed even by eminent specialists of

<sup>18</sup>Since the phonological systems of Six Dynasties scholars was distinct from that of early Tang, directly transcribing these *fanqie* into *standard* Middle Chinese may introduce some inadequacies: systematic, but minor, adjustments may be necessary. This topic, however, must be deferred to a future article.

historical phonology (Pulleyblank 1995), masks a non-negligible amount of information relevant to syntactic analysis, and present a highly misleading image of Chinese as a ‘pre-categorical’ language (Bisang 2008, Sun 2020).

Using sound glosses in a systematic way in the study of Archaic Chinese texts (at least those that are glossed in the *Shiwen*) can not only bring new light on the syntax of this language, but also, by making Chinese less outlandish from the perspective of the morphology-rich Sino-Tibetan languages, set a firmer basis for a comparative Sino-Tibetan grammar.

An edition of all the texts glossed in the *Jingdian Shiwen* with Middle Chinese transcription (and possibly Archaic Chinese reconstruction) in the lines of the model presented in §4 would thus be of considerable use to linguists and philologists specializing in Archaic Chinese. This endeavour would add a new dimension to the study of Chinese syntax and bring together two sister disciplines that have remained separated from each other for too long.

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