A refutation of Song's (2014) explanation of the 'stop coda problem' in Old Chinese

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1 Introduction

In a recent article Chenqing Song (2014) draws renewed attention to the problem of groups of Chinese words in which the character used to write one of the words has a stop final reading in Middle Chinese but the character used to write another of the words has an open syllable reading in Middle Chinese, although the two words in question either rhyme in the poems of the 詩經 *Shījīng* or are members of the same phonetic series, in either case implying that they shared a rime in Old Chinese. She exemplifies this problem with the rhyme of 莫 MChi. *mɒk / maek, mâk / mak, muo^{C} / muH* 'end'[1] and 除 MChi. *d̨jwo / drjo, d̨jwo^{C} / drjoH* 'to pass' in poem 114 and the inclusion of 乍 MChi. *dz̨a^{C} / dzraeH* 'suddenly' and 作 MChi. *tsâk / tsak* 'to act' (Song 2014: 99) in the same phonetic series.

Song reviews two previous proposals (1) 'the voiced stop coda hypothesis' and (2) 'the open syllable hypothesis' to explain these data and she finds them both wanting. She offers a new proposal that employs a the reconstruction of voiced and voiceless stop finals (exactly opposite in distribution to those in the system of Li Fang-kuei) in the ancestor of Chinese and Tibetan, with the lexical diffusion of the loss of the inherited voiceless series paradoxically both at the time of the script's invention and during the time of the 詩經 *Shījīng* compilation, explaining the relevant oddities in phonetic series and rhyme practice. The comparison of Tibetan voiced finals with Chinese voiceless finals serves as a keystone to her argument.

Unfortunately, every step in Song's reasoning is faulty and nearly every claim she makes about Tibetan is false. André-Georges Haudricourt long ago solved the 'stop coda problem' in

1 I here give Middle Chinese (MChi.) in the system of Li (1971: 4-7; 1974: 224-227) and Baxter (1992) separated by a slash, and Old Chinese (OChi.) in the systems of Schuessler (2009) and Baxter & Sagart (2014), separated by a slash. Giving each form in two systems is cumbersome, but helps to draw focus to the fact that the argument nowhere relies on the details of a specific system.

a duly famous article (1954); Song's article contributes nothing and indeed risks propagating misconceptions both old and new.

2 The voiced stop coda hypothesis

Bernhard Karlgren noted rhyme and phonetic series contact between Middle Chinese closed and open syllables and reconstructed Old Chinese voiced stop finals as the source of the open syllable finals in the relevant words (1923: 27-28, cf. Baxter 1992: 332). Karlgren reconstructed many open syllable words in Old Chinese, although he decreased the number of them in his reconstruction during the course of his career (Baxter 1992: 326-328). On the basis of rhyme contact between words with Karlgren's voiced finals and Karlgren's open syllables, Li Fang-Kuei extends voiced stops (particularly *-g) to all of those cases in which Karlgren retained open syllables (Li 1971: 24-27, 1974-5: 247-252).

Song (2014) obscures the differences among various adherents of the 'voiced stop coda hypothesis'. Her single critique, that it is typologically aberrant for a language to have no open syllables, applies to Li's system but not to Karlgren's.[2] As a solution to the 'stop coda problem' the 'voiced stop coda hypothesis' is satisfactory. The demerit of this hypothesis is primarily that the 'open syllable hypothesis' is more elegant, more precise, and more predictive.

3 The open syllable hypothesis

Song mischaracterizes the views of those scholars she classifies as adherents to the 'open syllable hypothesis', claiming them to believe that all Middle Chinese open syllables descend from Old Chinese open syllables (2014: 102). In fact, these scholars posit two sources for Middle

2 Despite her explicit rejection of Li's system Song employs it for her own transcription of Old Chinese words. It is likely that this choice blinds her to the details of those who work with the 'open syllable hypothesis'.

Chinese open syllables. One source is indeed the direct descendent of Old Chinese open syllables, but the other, originally proposed by Haudricourt (1954), results from the simplification of clusters, e.g. *-ks > *-s > *-*H*. Haudricourt's hypothesis not only solves the 'stop coda problem' but also accounts for the origin of the Middle Chinese 去聲 *qùshēng* tone. Song appears unaware of Haudricourt seminal contribution, although her bibliography includes works that describe Haudricourt's hypothesis and add further evidence on its behalf (Bodman 1980: 52, Baxter 1992: 308-319, Baxter & Sagart 2014: 196-197[3]). It is easy to cite further researchers who also accept Haudricourt's proposal (e.g. Jaxantov 1978-79: 38, Starostin 1989, Zhengzhang 2000, Schuessler 2007: 29). Aside from these and many other publications, such easily accessible sources as the Wikipedia article 'Old Chinese phonology' (accessed 25 October 2014) provide lucid explanations of Haudricourt's proposal. Although not everyone accepts this proposal (e.g. Gong 2002[1995]), its opponents ignore or briefly dismiss the hypothesis rather than providing a sustained argument against it.

Turning to the two concrete examples of the 'stop coda problem' that Song presents, the solution to 乍 MChi. *dʐa*^{C} */ dzraeH* 'suddenly' and 作 MChi. *tsâk / tsak* 'to act' appearing in the same phonetic series is that the descend respectively from OChi. *dzrâkh / *[dz]^{ʕ}rak-s and OChi. *tsâk / *[ts]^{ʕ}ak,[4] and the solution to the rhyming contact of 莫 MChi. *mɒk / maek, mâk / mak, muo*^{C} */ muH* 'end' and 除 MChi. *ɖjwo / drjo, ɖjwo*^{C} /

3 Song incorrectly cites this work as published in 2013.

4 An anonymous reviewer protests that I do "not offer any further evidence to prove that the *-s* in the *-ks* would not break the *xiéshēng* connection". Many characters have two readings in different tones (e.g. 王 *jwaŋ / hjwang* < *waŋ / *ɢʷaŋ and *jwaŋ*^{C} */ hjwangH* < *waŋh / *ɢʷaŋ-s) and a great majority of phonetic series contain readings of various tones (e.g. 埌 *lâŋ*^{C} */ langH*, 朗 *lâŋ*^{B} */ langX*, 粮 *lâŋ / lang*, etc.). The reviewer's apparent proposal that phonetic series must include only readings in the same tone would require a rethinking of historical Chinese phonology from the ground up.

drjoH ‘to pass’, as pointed out by Baxter (1992: 327), is that with the Middle Chinese readings 莫 *muo*^{C} / *muH* < OChi. *mâkh / *mˤak-s and 除 *ḍjwo*^{C} / *drjoH* < OChi. *r-lah / *lra-s we have here a perfect rhyme of *-ah / *-as with *-ah / *-as, since this poem dates to after the simplification of *akh / *-aks to *ah / *-as.[5]

Because the 'stop coda problem' was solved in 1954 and lucid descriptions of its solution are available in numerous publications, some of which Song claims to have consulted, in principle there is no need to consider her own proposed solution. However, because many of her views about Tibetan risk spreading from her article to other publications, the arguments for her own solution to the 'stop coda problem' merit detailed refutation.

4 Orthographically voiced Tibetan finals

Concern that Song may lack sufficient familiarity with Tibetan to execute her goals begins at her selection of minimal pairs to exhibit the language's voicing contrast. A pair like ཨ་ *ba* 'cow' and ཕ་ *pha* 'father' is more indicative than ཀྭ་ *gwa* 'white forehead' versus ཁྭ་ *kwa* 'alas'. The word ཀྭ་ *gwa* was unknown to me before reading Song's article. She presumably takes it from the well known dictionary of Zhang, which defines it as ཀཎ་ཕྱུགས་དང་རྟ་སོགས་ཀྱི་དཔལ་བ་ནས་ སྣ་རྩེའི་བར་དཀར་པོ་ *gnag phyugs-daṅ rta sogs-kyi dpral-ba nas sna rtseḥi bar dkar-po* 'the white between the forehead and tip of the nose of yaks, cattle, horses, etc.' (1980: 379), not a prime candidate for core vocabulary. Both ཀྭ་ *gwa* and ཁྭ་ *kwa* contain the medial *-w-*, which is exceedingly rare in Tibetan vocabulary; the word ཁྭ་ *kwa,* aside form being a clear case of onomatopoeia, begins with an unaspirated initial, a telltale sign that it does not belong to Tibetan inherited vocabulary (Hill 2007).

5 The 詩經 *Shījīng* does provide examples of *qùshēng* words rhyming with *rùshēng* words, but these are cases in which *-Vkh / *-Vks rhymes with *-Vk / *-Vk or *-Vts / *-Vts with *-Vt / *-Vt (Baxter 1992: 318-319). The one example of 詩經 *Shījīng* rhyming that Song discusses is not a case of this type.

Despite their exoticness, the pair ཀྭ *gwa* and ཁྭ *kwa* exhibit the fact that Tibetan has a voicing contrast in onset position.

Song's treatment of Tibetan continues with the claim that we “do not have historical records that describe the phonetic value of these sounds” (2014: 112). In fact, Tibetan sports a long and lively indigenous grammatical tradition that includes detailed discussions of phonetics (Miller 1976, 1993, Verhagen 1993, 2001). Untempted by the structuralist view that the underlying representation of a segment in a position without contrasts is itself a meaningless question, Song decides to 'take the position' that the orthographically voiced stops of in coda position were underlyingly voiced (2014: 112). As internal evidence in support of this view she cites the behavior of “a closed set of 'dependent particles', which include the sentence final particle, and the 離合 *lihe* particle” (2014: 112). She continues in a footnote with the remark that the “term 'dependent particles', is used by Tibetan grammarians because these particles are somewhat dependent on the neighboring phonological environment” (2014: 112). With her ignorance of the grammatical tradition's discussion of phonology in mind, it is gratifying to here see an acknowledgement that the Tibetan grammatical tradition indeed exists. Nonetheless, her view that this tradition writes in English and Chinese is baffling. I know of no Tibetan equivalent for the English word 'particle'; the Tibetans are lucky to lack such a vague and unhelpful notion. The '離合 *lihe* particle' (a term that is new to me) is called by the Tibetans འབྱེད་སྡུད་ *ɦbyed-sdud* and when teaching Tibetan in English I call it an 'interrogative converb'. Song notes that this and the རྫོགས་ཚིག་ *rdzogs-tshig* morpheme are written with the same letter than ends the preceding word. Normally this suffixation results in an apparent voiced geminate, e.g. བཅད་དོ་ *bcad-do* 'cut'. Although the basic facts are right, Song misses a few important points. First, the དའ་དྲག་ *da-drag* 'strong *d*' appears as a voiceless consonants in these contexts, e.g. ཕྱིན་ཏོ་ *phyind-to*. If 'd' is underlyingly voiced, one may legitimately ask why it does not voice here. Second, she writes that when

“the preceding syllable has no coda” the need to have some onset “is satisfied by inserting the default onset in WT [ʔ] as the onset” (2014: 113). The letter used in this context is the 23rd of the Tibetan alphabet འ, which Song herself posits as having the value /ɦ/ just two pages earlier (2014: 111).[6] This blatant inconsistency suggests a lack of familiarity with the Tibetan alphabet.

Song suggests that because final stops are geminated as initial voiced stops they are underlyingly voiced as finals (2014: 115). She entertains another possibility, writing that those “who support setting the underlying form of <-g> as /-k/ may argue that there is an intervocalic voicing process in the derivation that changes the voicing of the stop” (2014: 115). One of the criticism she offers to this view, namely that “no other instance of intervocalic voicing is found in WT” is simply false. She has yet to learn of such doubles as ཡིག་ *yig* /jik/, ཡི་གེ་ *yi-ge* /jige/ 'letter', བུག་ *bug* /buk/, བུ་ག་ *bu-ga* /buga/ 'hole', and ཐག་ *thag* /thak/ 'weave', ཐ་ག་པ་ *tha-ga-pa* /thagapa/ 'weaver'.

Song writes that gemination “apparently ceased to be active in a slightly later stage as documents from a later period no longer show signs of gemination” (20014: 116) whereas the “data used in this section comes [sic] from early WT text” (2014: 113 note 20). I am eager to consult the documents Song has access to; my own readings suggest exactly the opposite tendency. Newspapers and novels of our own day slavishly maintain gemination of these morphemes, whereas early literature often omits gemination.

Examining an Old Tibetan document from Dunhuang, Berthold Laufer long ago solved the mystery of apparent geminiation.

> In the Tibetan alphabet is developed the principle of writing separately each syllable of a word and of any composite

6 I have argued that the letter reflects /ɣ/ (cf. Hill 2005, 2009).

> formation; this, however, does not mean at all that what is separated by the use of the syllabic dot in writing presents also an independent part phonetically. … we find *rdzogs-so* written in two syllables, and *rdzogso* written in one graphic syllable; the pronunciation is not *rdzogs so*, but *rdzogs-o*. In other words, this is not a case of phonetic, but merely of graphic reduplication, caused by the principle of writing. Likewise it does not make any difference from a phonetic viewpoint whether the Tibetan spells *gyurd-to* or *gyur-to*; phonetically it is neither the one nor the other, but *gyurt-o*. (Laufer 1914: 58, Tibetan transcription adjusted).

Spellings such as བཅད་ *bcado* 'cut', བཅག་ *bcago* 'broke' with clear intervocalic voicing (in place of བཅད་དོ་ *bcad-do* and བཅག་གོ་ *bcag-go*) are quite common in Old Tibetan texts, as a search of Old Tibetan Documents Online confirms (otdo.aa-ken.jp/ accessed 25 October 2014). The gorgeous architecture of derivations from underlying forms that Song proposes is unnecessary. Voicing is neutralized in coda position, consonants are realized as voiced intervocalically and are otherwise voiceless. The underlying value of Tibetan stop finals in coda position is a meaningless question.

5 Evidence of early Sino-Japanese

Song points to three words in which a Middle Chinese final stop to a voiced stop in a very early Japanese borrowing (2014: 118).[7]

麥 MChi. *mɛk / meak,* Jp. *mugi* 'wheat'

筆 MChi. *pjet / pit* 筆, Jp. *fude* 'writing brush'[8]

7 In this section, I am indebted to the comments of Sasha Vovin (per litteras 17 April 2015), which he later posted in a comment on a blogpost by Guillaume Jacques (http://panchr.hypotheses.org/192#comment-214).

8 SEE Miyake 1997: 187, 192.

物 MChi. *mjwət / mjut*, Jp. *mono* < *modo* 'thing'

Song admits that the interpretation of these Japanese words as loans from Chinese is controversial (2014: 118 note 21). Indeed, in the *opinio communis* two of these three are reconstructible to proto-Japanese: Jp. *Mugi* < OJp. *muNki*$_1$ < Proto-Jp. *munki 'wheat' (Martin 1987: 487), Jp. *mono* < OJp. *mo$_2$no$_2$* < Proto-Jp. *mənə (Martin 1987: 485). Song's reconstruction *modo*, which she omits an asterisks from, appears to be motivated only by a desire to present the word as a Chinese loan. The third word, Jp. *fude* < OJp. *puNte* 'writing brush', although obviously not reconstructible to a period before writing, is built with native morphology or may involve a Korean loan (Martin 1987: 416). Song's brushing aside of these standard explanations, in favor of merely positing her interpretation of these words as Chinese loans without explanation, cannot convince. At a minimum, she should have explained how the vowel correspondences are accounted for in an analysis of these words as loans. Finally, even if these three words were loans, they argue not for Chinese voiced finals, but for pre-nasalized finals, as voiced stops in modern Japanese originate from Old Japanese pre-nasalized stops and proto-Japanese clusters of a nasal with a stop (Martin 1997: 20-26).

6 Sino-Tibetan correspondences and 'the solution'

Building on the mistaken conclusion that Tibetan stop finals are underlyingly voiced, Song turns to Sino-Tibetan comparison. She rosily claims that “scholars have found the correspondences” Tib. *-b* : MChi. *-p*, Tib. *-d* : MChi. *-t*, Tib *-g*, MChi. *-k*, Tib -Ø : MChi. - Ø (2014: 116). We would be lucky indeed if this account were correct. To start, if one states things as she does using Middle Chinese rather than Old Chinese (in the tradition of Haudricourt) a number of widely made comparisons become extremely hard to state, e.g. Chi. 晝 *tjəu^C / trjuwH* < *trukh / *truk-s 'time of daylight', Tib. གདུགས་ *gdugs* 'mid-day, noon', Chi. 夜 *jia^C / yaeH* <

*jakh / *N.rAks 'night', Tib. ཟག་ *źag* < *rʲag 'day, 24hrs', Chi. 護 *ɣuo*^{C} / *huH* < *gwâkh / *[ɢ]^{wʕ}aks 'guard, protect', Tib. འགོག་ *ḫgogs* < *ḫg^{w}ags 'prevent, avert', etc. (cf. Hill 2012).[9] There are also cases where Chinese has a clear stop that corresponds to nothing in Tibetan: Chi. 日 *ńźjet / nyit* < *nit / *C.nik 'sun', Tib. ཉི་མ་ *ñi-ma* 'sun', Chi. 百 *pɒk / paek* < *prâk / *pʕrak 'hundred', Tib. བརྒྱ་ *brgya* 'hundred', etc. (cf. Hill 2012). One wonders how Song explains such examples.

When the reader reaches the section entitled 'the solution', he witnesses the solving of a problem that was solved sixty years ago, fortified with a mistaken understanding of Tibetan phonology and a mistaken statement of Sino-Tibetan correspondences. The success of such an enterprise is doomed. The proposed solution is that Sino-Tibetan had a series of both voiced and voiceless stops that developed as follows: ST *-b > Tib. *-b*, MChi. *-p*, ST *-p > Tib. -Ø, Chi. -Ø. Song appears unaware that this explanation suffers from exactly the same criticism she leveled against the 'voiced stop coda hypothesis', namely that it yields a reconstructed language without open syllables. Other obstacles include the fact that *-p* is limited to 去聲 *qùshēng* syllables for no apparent reason. The suggestion that ST *-p > Tib. *-b*, MChi. *-p*, ST *- Ø > Tib. -Ø, Chi. -Ø would be a more neutral way to solve the same (faulty) correspondence, would solicit the answer we would need both *-p and *-b in early Old Chinese because *-p (equivalent to Li's *-b and Baxter's *-ps) has rhyme contact with *-b (equivalent to Li's *-p and Baxter's *-p) and *-b and *-p at times occur in the same phonetic series. We have come a long way to return to Li Fang-Keui's system in mirror image.

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9 In the five Sino-Tibetan comparisons that Song gives (2014: 117) she uses the Roman letter 'j' for both ཇ /dʒ/ and ཡ /j/, cites the non-existent Tibetan verb form <chi> 'die' (intending either the present འཆི་ *ḫčhi* or the past ཤི་ *śi*), and includes the word རྗག་ *ǰag* /dʒak/ 'robbery', although this word, as an exception to Schiefner's law (*ǰ- > *ź-*, cf. Hill 2014a), is unlikely to be inherited. Three mistakes in five words does not inspire confidence.

7 Lexical diffusion

Song begins the presentation of her own theory with the pronouncement that rhyme contact among words with Middle Chinese open and closed syllable readings "is not explicable under either of the two predominant opposing hypotheses" and "cannot be explained … while firmly obeying the Neogrammarian law of sound change" (Song 2014: 106-107). Thus, she adds her name to the list of scholars who toll the knell of exceptionless sound change without first attempting to follow its principles (cf. Hill 2014b). In fact, as discussed above, both the 'voiced stop coda hypothesis' and the 'open syllable hypothesis' solve the 'stop coda problem' and do so without challenging Neogrammarian principles.

In place of regular sound change, Song puts her faith in 'lexical diffusion'. Without defending lexical diffusion, she writes "one fact is undeniable: lexical diffusion exists in Chinese, and its occurrence is far from rare" (p. 108).[10] Lexical diffusion in Chinese is deniable; Pulleyblank and Egerod deny it. Pulleyblank points out that like the Neogrammarian hypothesis itself lexical diffusion is a research programme rather than a testable hypothesis, as "there is no possibility here of ever finally disproving the theory on empirical grounds" (1978: 184).

Although Wang may have originally formulated lexical diffusion as a refutation of Neogrammarian change, no scholar who supports lexical diffusion now outright denies the possibility of Neogrammarian regular sound change as one mechanism of linguistic change. So, if all linguistics agree that *pluralitas non est ponenda sine neccesitate*, the question becomes whether or not there is a need to add lexical diffusion as a new

10 Song claim that since "Neogrammarians first proposed this universal sound change mechanism, many other sound change types have been discovered, including lexical diffusion, borrowing, and analogy" (p. 107) is misleading. The Neogrammarians endorsed borrowing and analogy as explanations of language change (cf. Brugman 1879: 7-8). Lexical diffusion is the only newcomer.

mechanism of change. Pulleyblank believes the doctrine of diffusion is generally superfluous and that “there are many possibilities for rational explanation in terms of regular sound laws before one need be forced to accept that individual lexemes follow their own rules” (1978: 190). The doctrine is certainly superfluous in solving the 'stop consonant problem' in Old Chinese.

Egerod (1981) firmly rejects the touchstone example of lexical diffusion, namely the description of a Cháozhōu tone split given in Wang 1977. The force of Egerod's comparative discussion of French shows that the traditional Neogrammarian explanations offer more subtle and insightful accounts than lexical diffusion is capable of.

> No linguist would dare to state that because Latin *correctum* becomes French *correct*, but *directum* becomes French *droit*, and because *-ent* and *-oit* both follow *r-* and are followed by zero, the only explanation is a sound change caught midstream, having reached *droit* but not *correct*. The existence of another form, French *direct*, immediately guides us toward a better explanation. Nor would he say that *validus* → *valid* and *calidus* → *chaud* allows us to draw any inferences about lexical diffusion. But this is precisely the logic followed in the Cháozhōu case. (Egerod 1981: 169-170)

Egerod's conclusion is that lexical diffusion is a methodological slight of hand, the dressing up of an aversion for toil as a theoretical insight.

> there is no “massive split” involved, but an error of methodology in accounting for tones. Cháozhōu like other languages in China or outside of China has a complicated history with migration waves, loans and analogical formation. The conscientious historical linguist has to account for these before he resorts to a deus ex machina” (1981: 173).

Pulleyblank concurs with Egerod's explanation of the Cháozhōu tone split and more widely suggests that it “is not difficult to show that the various alleged examples of lexical diffusion in Chinese dialects are vitiated by the failure to take into account this ubiquitous fact of heterogeneity” (1982: 401). Pulleyblank regards the theoretical formulation of lexical diffusion as presented by Hsieh in Wang 1977 as “so manifestly at odds with any realistic picture of how dialects are inter-related and how innovations spread spatially through a language as to make them totally untenable” (1982: 408). Mazaudon & Lowe conclude a robust critique of lexical diffusion in a similar vein, remarking that “a detailed study of the history of the language can disentangle the reflexes from different sources, and it is not necessary to renounce the principle of regular change for the sake of such cases” (1994: 11).

Most textbooks of historical linguistics also reject diffusion as a mechanism of sound change distinct from regular phonetic change, borrowing, and analogy (Hock 1991: 649-652, Campbell 2004: 222-224, Ringe & Eska 2012: 79-83). Even sympathetic authors such as Crowley & Bowern, who write of "lexical diffusion as being a major mechanism in language change" (2010: 216), mollify this commitment with the comment that “there is considerable debate on the extent to which diffusion is a mechanism of language change” (2010: 216 note 4 on p. 351). Bybee (2012), a theorist of *parole*'s affect on *langue*, makes frequent mention of lexical diffusion as a factor in language change, but puts no stress on its distinctiveness from borrowing. If one mechanically substitutes Bybee's 'lexical diffusion' and 'change in progress' respectively with 'inter-dialectal borrowing' and 'synchronic variation' her presentation and her findings would accord with Neogrammarian doctrines.

Song touches on the famous example of Philadelphia accented /æ/ tensing as an example of lexical diffusion *par excellence* (2014: 108-109), yet even this case is consistent with Neo-grammarian principles (Blevins

2004: 270, Hill 2014b: 217). Lexical diffusion “is never an instance of sound change conditioned by phonetic factors alone” (Blevins 2004: 278); it is borrowing by another name. If Song believes that lexical diffusion is a type of sound change contravening Neo-grammarian principles which is distinctively essential to the theoretic arsenal of historical linguistics, she must answer in detail the many authors who disagree. To simply assert that that rhyme contact among words with Middle Chinese open and closed syllable readings cannot be explained except by lexical diffusion, is to abandon *Ausnahmlosigkeit* without giving it a try. Her claim that lexical diffusion in Chinese is 'undeniable' is simply false. Like so many others who would jettison exceptionless sound change in favor of exceptionful sound change, Song will have her cake and eat it too. Lexical diffusion gives her a sound change (-p > Ø), but also let her whisk it away when it proves inconvenient. A magic wand to waive away exceptions, giving us a sound change in this word but not in that one, is not an explanation; it is an admission of failure.

References

Baxter, William H. 1992. *A Handbook of Old Chinese Phonology*. Berlin: Mouton de Gruyter.

Baxter, William H. and Laurent Sagart (2014). *Old Chinese: A New Reconstruction*. Oxford: Oxford University Press.

Bodman, N. (1980). “Proto-Chinese and Proto-Tibetan.” *Contributions to historical linguistics: Issues and materials*. Frans van Boetsem and Wangh, Eds. Leiden: E. J. Brill. 34–199.

Blevins, Juliette (2004). *Evolutionary phonology: The emergence of sound patterns*. Cambridge: Cambridge University Press.

Brugman, Karl (1879). “Zur geschichte der nominalsuffixe -as-, -jas- und -vas.” *Zeitschrift für vergleichende Sprachforschung auf dem Gebiete derIndogermanischen Sprachen* 24.1: 1-99.

Bybee, Joan (2012). “Patterns of lexical diffusion and articulatory

motivation for sound change." Maria-Josep Solé and Daniel Recasens (eds.) *The initiation of sound change: perception, production and social factors*, pp. 211-234. Amsterdam and Philadephia: John Benjamins Publishing Co.

Campbell, Lyle (2004). *Historical Linguistics: An Introduction*. Edinburgh: Edinburgh University Press.

Crowley, Terry and Claire Bowern (2010). *An introduction to historical linguistics*. 4th ed. Oxford: Oxford University Press.

Egerod, Søren (1982). "How not to split tones—the Chaozhou case." *Fangyan* 3. 169-173.

Gong Hwang-cherng (2002[1995]). "The System of Finals in Proto-Sino-Tibetan". *The Ancestry of the Chinese Language*. William S. Y. Wang, ed. (Journal of Chinese linguistics. Monograph series 8) Berkeley: Project on Linguistic Analysis, University of California: 41-92. (reprinted in:) m̃ □ ɻ □ №□ ε ˊ *Collected Papers on Sino-Tibetan Linguistics*. Taipei: ˊ Í □ №i ɻ ₱ ▌ □ №z □ Ä ▪, 79-124.

Haudricourt, André-Georges (1954). "De l'origine des tons en vietnamien." *Journal Asiatique* 242: 69–82.

Hill, Nathan W. (2005). "Once more on the letter □". *Linguistics of the Tibeto-Burman Area* 28.2: 107-137.

Hill, Nathan W. (2007). "Aspirated and Unaspirated Voiceless Consonants in Old Tibetan." 語言暨語言學 *Languages and Linguistics* 8.2: 471-493.

Hill, Nathan W. (2009). "Tibetan <ḥ-> as a plain initial and its place in Old Tibetan Phonology." *Linguistics of the Tibeto-Burman Area* 32.1: 115-140.

Hill, Nathan W. (2012). "The six vowel hypothesis of Old Chinese in comparative context." *Bulletin of Chinese Linguistics* 6.2: 1-69.

Hill, Nathan W. (2014a) 'Tibeto-Burman *dz- > Tibetan z- and Related Proposals.' In: Simmons, Richard VanNess and van Auken, Newell Ann, (eds.), Studies in Chinese and Sino-Tibetan Linguistics: Dialect, Phonology, Transcription and Text. Tapei: Institute of Linguistics,

Academia Sinica, pp. 167-178.
Hill, Nathan W. (2014b). “Grammatically conditioned sound change.” *Language and Linguistics Compass* 8.6: 211-229.
Hock, Hans Heinrich (1991). *Principles of historical linguistics*. Berlin: Mouton de Gruyter.
Jaxontov, Sergej Evgenejvič. 1978-1979. "Old Chinese Phonology." *Early China* 4: 37-40.
Karlgren, Bernhard (1923). *Analytic dictionary of Chinese and Sino-Japanese*. Paris: Paul Geuthner.
Laufer, Berthold (1914). "Bird divination among the Tibetans (notes on document Pelliot no 3530, with a study of Tibetan phonology of the ninth century)." *T’oung Pao* 15: 1-110; Hartmut Walravens & Lokesh Chandra (eds.), *Sino-Tibetan Studies*, vol 2. New Delhi: Rakesh Goel. 354-463.
Li Fang-Kuei 李方桂. 1971. 〈上古音研究〉，《清華學報》新 9: 1-61。
Li, Fang-Kuei û ʁ Ọ̃ . 1974–75. "Studies on Archaic Chinese". *Monumenta Serica* 31: 219-87 (translation of Li 1971 by Gilbert L. Mattos)
Martin, Samuel E. (1987). *The Japanese Language Through Time*. New Haven & London: Yale University Press.
Mazaudon, Martine and John B. Lowe (ms. 1994). “Regularity and Exceptions in Sound Change.” Marc Domenici and Didier Demolin, eds., *Investigations in Sound change*. Oxford: Oxford University Press. (The volume appears to remain unpublished, but the article is on the Internet)
Miller, Roy Andrew (1976). *Studies in the Grammatical Tradition in Tibet*. Amsterdam: John Benjamins.
Miller, Roy Andrew (1993). *Prolegomena to the First Two Tibetan Grammatical Treatises*. (Wiener Studien zur Tibetologie und Buddhismuskunde 30.) Vienna: Arbeitskreis für Tibetische und Buddhistische Studien Universität Wien.
Pulleyblank, Edwin G. (1978). “Abruptness and gradualness in

phonological change." Mohammed A. Jazayery, et. al. Eds. *Linguistic and Literary Studies*. Vol 3. *Historical and Comparative Linguistics*. The Hague: Mouton.

Pulleyblank, Edwin G. (1982). Review of W. Wang (1977). *Journal of Chinese Linguistics* 10: 39-416.

Ringe, Don and Joseph E. Eska (2012). *Historical Linguistics: Toward a Twenty-First Century Reintegration*. Cambridge: Cambridge University Press.

Schuessler, Axel (2007). *ABC Etymological Dictionary of Old Chinese*. Honolulu: University of Hawai'i Press.

Schuessler, Axel (2009). *Minimal Old Chinese and Later Han Chinese*. Honolulu: University of Hawai'i press.

Song, Chenqing (2014). "Stop codas in Old Chinese and Proto Sino-Tibetan: A lexical diffusion analysis." *International Journal of Chinese Linguistics* 1.1: 96–135.

Starostin, Sergei. Старостин, Сергей Анатольевич (1989). *Реконструкция Древнекитайской Фонологической Системы.* Moscow: Наука.

Verhagen, Pieter C. (1993). *A History of Sanskrit Grammatical Literature in Tibet*. Volume 1 Transmission of the Canonical Literature. Leiden: Brill.

Verhagen, Pieter C. (2001), A History of Sanskrit Grammatical Literature in Tibet. Volume 2: Assimilation into Indigenous Scholarship. Leiden: Brill.

Wang, William, ed. (1977). *The Lexicon in phonological change*. The Hague: Mouton.

Zhang Yisun (1985). *Bod rgya tshig mdzod chen mo*. Beijing: Mi rigs dpe skrun khaṅ.

Zhengzhang Shangfang (2000). *The Phonological System of Old Chinese*. Paris: École des Hautes Études en Sciences Sociales, Centre de Recherches Linguistiques sur l'Asie Orientale.