FROM VIETIC PRESYLLABLES TO VIETNAMESE SIMPLEX ONSETS[1]

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ABSTRACT

This study reviews the reduction of disyllabic Proto-Vietic words to monosyllabic Vietnamese words and the development of Vietnamese voiced fricative onsets. Thompson (1976:1131-1133) in reconstructing Proto-Viet-Muong, and later Ferlus (1982 & 1992) based on his Proto-Vietic reconstructions,[2] hypothesized the spirantization of stops *p/t/c/k and *b/d/ɟ/g in previous intervocalic positions and the loss of presyllables, resulting in Vietnamese onsets 'v' [v], 'd' [z] (from hypothesized Middle Vietnamese *ð), 'gi' [z] (from hypothesized Middle Vietnamese *ʒ), and 'g/gh' [ɣ] in monosyllabic words.[3] For this study, relevant Proto-Vietic and Old Chinese lexical reconstructions were compared, and the

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[1] I wish to thank the two readers for their comments and suggestions. I am, of course, responsible for any remaining problems in this article.

[2] The use of the terms "Vietic" and "Viet-Muong" require clarification. Vietic is considered a branch of Austroasiatic, while Viet-Muong is a sub-branch of Vietic (see Sidwell & Alves 2021 for a summary). Thompson (1976), for his Proto-Viet-Muong constructions, used only Vietnamese and Muong data, so his reconstructions are indeed valid only to a stage of Proto-Viet-Muong. On the other hand, Ferlus (e.g., 2007 & 2014) used data from a dozen languages of the Vietic branch. While he used the term "Viet-Muong" in his publications, his reconstructions apply to the stage of Proto-Vietic. Similarly, Nguyễn T. C. (1995), writing in Vietnamese, used the term *Việt-Chứt*. Chứt is the ethnic group including the conservative lects Rục, Mày, and Sách, but he considered Vietic languages outside that group, so his reconstructions must also be considered to encompass Proto-Vietic.

[3] The Romanized Vietnamese *Quốc Ngữ* orthography is used in this article as it represents generalized phonetic ideals of the sounds without the complications of Vietnamese dialectal variety. Dialectal variation is described where needed in the study, but otherwise, northern Vietnamese pronunciations of the orthography are shown.

phonological data partially supports this claim while revealing a more complex picture. First, the changes involve classes of sounds rather than specific consonants (e.g., Vietic labial material (excluding nasals or implosives) in intervocalic position becomes Vietnamese 'v' [v] in onset position). Also, while this tendency is dominant in available data, some exceptions exist: (a) reconstructed disyllabic words for which modern Vietnamese items lack lenited onsets and (b) reconstructed monosyllabic words for which Vietnamese items have voiced fricative onsets, but without apparent conditioning factors. Evidence shows these features in modern Vietnamese developed many centuries later than in Sinitic.

Keywords: Vietnamese, Vietic, Old Chinese, historical phonology

1. KEY ISSUES AND PREVIOUS STUDIES

"Telescoping" from disyllabic to monosyllabic word forms (i.e., compression and loss of presyllables and complex onset material) is a widespread phenomenon in the Sinosphere. In Sinitic (Baxter and Sagart 2014); Vietic (Ferlus 2007); Kradai (Kam-Sui) (Thurgood 1988); Kra (Ostapirat 2000); Hlai (Norquest 2007); Tai (Pittayaporn 2009); and Hmong-Mien (Ratliff 2010), the prosodic word has been reconstructed to include disyllabic forms with unstressed presyllables and stressed main syllables, that is, sesquisyllabic templates.

Vietnamese and the closely related Muong lects (as well as Cuoi lects; see Nguyễn, Bùi, and Hoàng (2022)) have also lost such presyllabic material. In contrast, other Vietic languages—like most modern Austroasiatic languages—are disyllabic with iambic stress patterns, and the presyllables have undergone various types of phonological reduction (e.g., neutral vowels such as [ə] or [a], presyllable onsets restricted to subsets of consonants, syllabified consonants with only nasals or stops, etc.).[4] Like Vietnamese, the modern language groups in southern China noted above have maximally monosyllabic morphemes. However, they vary in onset material, whether including prenasalized stops (e.g., some Hmong-Mien languages), clusters with medial [l] or [r] (e.g., Thai or Ruc in Vietic), or mainly single onsets and minimal clusters having only medial glides such as [w] (e.g., Vietnamese and varieties of Chinese).

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[4] See Pittayaporn 2015 for a typological overview of types of sesquisyllabicity in the region.

Vietnamese is robustly monosyllabic in that Vietnamese syllables are both prosodic words and morphemes, making Vietnamese isolating and analytic.[5] As for syllable structure, in 90 percent of attested Vietnamese syllables (7,383 tokens out of a total of 8,200 phonologically distinct Vietnamese syllables), the shape is CV(C) (e.g., *xa* 'far' [sa:^{33}], *vàng* 'yellow/gold' [va:ŋ^{21}]) (Kirby and Alves 2022). The remaining syllables have the maximal form of CwV(C) with a [-w-] medial (e.g., *luyện* [lwɪn$^{21?}$] 'to train someone' from Chinese 練 *liàn*). Both Vietnamese and Sinitic languages are monosyllabic in this way, and all lack onset clusters with medial [-l-] or [-r-], and instead have at most medial glides, typically [-w-] or other glides. They also have complex tone systems, and their syllables all have phonemically distinctive tones.[6] The long-term language contact between Vietnamese and Sinitic is also shown by how tones of the thousands of Sino-Vietnamese loanmorphs match Chinese tone categories with great consistency, even matching some systematic phonological changes in other varieties of Chinese in the Middle Chinese period.[7]

Table 1: Shared typological phonological traits of Sinitic languages and Vietnamese

• Monosyllabic
• Minimal onset clusters (few, e.g., only with -w-, not -r- or -l-)
• Complex tone systems and tone distinctions on all syllables

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[5] While Vietnamese-style reduplication (i.e., what is called *từ láy* in Vietnamese) sometimes creates bound morphemes otherwise lacking semantic content, they are not phonologically bound in the way that unstressed presyllables are.

[6] Even so-called "neutral tones" create semantic distinctions in opposition with tones of full phonetic strength.

[7] Phan (2013:92-94) noted the historical phonological phenomenon in Middle Chinese of *quanzhuo shang bian qu* 全濁上變去. This involved a change in Middle Chinese tones in words with *quanzhuo* onsets from the *shangsheng*/rising to *qusheng*/departing tone category, which is seen in Vietnamese and, for example, Mandarin, but not neighboring Yue Chinese. This highlights the connection of the Chinese spoken in Vietnam to other varieties of Sinitic. More recently, Phan and de Sousa have noted four phonological features shared specifically by Vietnamese and southern Sinitic lects (Phan and de Sousa 2022:67-75).

This Chinese-like typology can give the impression that Vietnamese syllable structure has this high degree of similarity to Sinitic languages due to intense language contact and subsequent rapid transformation. However, evidence suggests a different picture from the image implied by the modern languages (e.g., Alves 2001). It has been pointed out how, at the time of initial language contact, both Vietic and Sinitic were polysyllabic/sesquisyllabic and nontonal (e.g., Alves 2020:53-54). Vietic had an Austroasiatic template, like modern conservative varieties of Vietic, and Baxter and Sagart's (2014) reconstructions of Sinitic suggest it was typologically similar in a number of ways (see Table 2).

However, Sinitic developed its modern typology much earlier than Vietic did. Sinitic reached that stage in the early centuries of the 1st millennium CE, the Early Middle Chinese period. In contrast, for Vietnamese, textual evidence supports a scenario in which Vietnamese retained presyllabic material for several centuries longer into the early 2nd millennium CE (Shimizu 1996 and 2015; Xun 2019), and Vietnamese had clusters with medial [-l-] until the early 1800s (Vu 2019, 2020). These details require reconsideration of the language contact situation of Sinitic and Vietic, as discussed in the conclusion of this article.

Perhaps the earliest reconstruction of presyllables in Proto-Viet-Muong is in the work of Thompson (1976:1131-1133). Looking at Vietnamese (Northern Vietnamese, Southern Vietnamese, and Middle Vietnamese from de Rhodes' 1651 dictionary) and one variety of Muong, none of which have presyllables, he hypothesized that the voicing of certain onsets in Vietnamese had been developed in an intervocalic position. As support, Thompson (1976:1133) also cited previous notes of a few disyllabic cognates in related languages with presyllables, such as the conservative language Ruc. Based on this, he reconstructed what he posited to be abstract representations of presyllables (i.e., not precise phonological representations), all with schwa vowels and with *h or zero onsets in those presyllables.

Table 2: Phonological features in Proto-Vietic and Old Chinese reconstructions

Feature	Proto-Vietic	Old Chinese (Han Dynasty)[8]
Sesquisyllabic	+	+
Onset clusters with medial *-r-	+	+
Onset clusters with medial *-l-	+	-
Coda clusters	-	+
Laryngeal codas *-h and *-ʔ	+	+
Tone systems	-	-

(<u>Sources for Vietic</u>: Ferlus 1992, 2007; Nguyen T. C. 1995; <u>Sources for Old Chinese</u>: Baxter & Sagart 2014 for Old Chinese; Schuessler 2009)

Thompson was specifically considering the pattern of contrasting voicing of onsets in Vietnamese versus Muong. The patterns of onsets in Muong and Vietnamese were first noted in the earliest major study of Vietnamese historical phonology. Maspero (1912:19-39) described how, in cognate sets, voiceless stop onsets [p, t, c, k] in Muong correspond to voiced fricative onsets in Vietnamese. Ferlus (1982:88) presented this as in Table 3.

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[8] While those Old Chinese reconstructions are not without controversy, the variety of data sources and the connection to Sino-Tibetan, a language family with many languages having complex syllable structure, altogether support claims of a polysyllabic stage of Sinitic. The timing of the loss of presyllabic material is here proposed to be in the later East Han period, during a period of substantial language contact, but the forms had to have lasted long enough to be borrowed into Vietic. What is less clear is the process of phonological changes from polysyllabicity to monosyllabicity, as this paper explores in Vietic.

Table 3: Vietnamese versus Muong onset correspondences in cognate sets[9]

Language	Labial	Alveolar	Palatal	Velar
Vietnamese	ɓ	ɗ	c	k
	v	z	z	ɣ
Muong	p	t	c	k

Ferlus (Ibid.) also presented observations on data he had gathered on the conservative disyllabic Vietic language, Thavung. He noted that many instances of [p, t, c, k] onsets in monosyllabic words in Thavung correspond to voiced stops in Vietnamese, but [p, t, c, k] onsets in intervocalic position in disyllabic words in Thavung correspond to voiced fricative onsets in monosyllabic words in Vietnamese, as in Table 4.

Table 4: Vietnamese onsets versus Thavung onsets in intervocalic position in cognate sets[10]

Language	Labial	Alveolar	Palatal	Velar
Vietnamese	ɓ	ɗ	c	k
	v	z	z	ɣ
Thavung intervocalic onsets	p	t	c	k

(Adapted from Ferlus 1982:88)

A key question is when the changes in the main syllable onsets and subsequent loss of presyllables occurred. The timing of the loss of presyllables is seen in textual evidence of sesquisyllabic words in Archaic Vietnamese, the stage of Vietnamese in the first half of the 2nd millennium CE. Table 5 shows sample disyllabic words in which the onsets of the second syllables were originally unvoiced. Some of the modern Sino-

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[9] The data in Table 3 highlights the seeming typologically uncommon system of Vietnamese onsets. Vietnamese is notable for lacking [p], [b], [d], and [g] onsets and instead has [f] (not in Table 3), [ɓ], [ɗ], and [ɣ] respectively (see details in §3.3 for the latter sound). This contrasts with the typical onsets in Muong lects and highlights the restructuring of the Vietnamese onset inventory.

[10] Trần (2011:324-343), in a Vietnamese-language publication, refers to Ferlus's work and also provides additional comparative evidence for both the question of monosyllabification of Viet-Muong and of the resulting affricates.

Vietnamese pronunciations have voiced onsets, such as 盃 with a 'b' onset [i.e., ɓ], but the Middle Chinese onsets of those consonants were likely unvoiced and were thus potentially unvoiced at the time of those writings. Moreover, a few of these words are Proto-Vietic etyma which are disyllabic with voiced onsets in the second syllables.

Table 5: Early textual evidence of disyllabic characters

Modern Vietnamese	Sino-Nôm Characters	Sino-Vietnamese	Middle Chinese	Vietic
rắn 'snake'	破散	phá - tán	phaH sanX	*p.saŋʔ
vua 'king'	司布	tư - bố	si puH	*t.puə
vui 'happy'	司盃	tư - bôi	si pwoj	*C.puːj
gõ 'knock, strike'	阿枯	a - khô	'a khu	*C.kɔːh
vội 'in a hurry'	阿盃	a - bôi	'a pwoj	NA
ghê 'horrible'	多几	đa - kỷ	ta kijX	NA
ran 'spread widely'	波散	ba - tan	pa sanX	NA

(Character data from Vũ 2020:48-51; Middle Chinese reconstructions of Baxter and Sagart 2014)

Additional evidence comes from Shimizu (2011), who reviewed Ferlus's 1982 hypothesis, especially the question of timing. Ferlus (1982) asserted that the spirantization of those sounds preceded the voicing, and Shimizu (2011:6-8) presented evidence from Nôm data supporting this hypothesis. The textual evidence showed the previous intervocalic onsets went through a stage of spirantization of main syllable voiceless onsets first and then voicing of them before the stage of the loss of presyllables. For example, in the 14th century two-character word 阿普 'to comfort' (Middle Chinese p^huo^B (Schuessler 2009:60), Sino-Vietnamese *phổ*) for which Shimizu reconstructs an original voiceless onset of ɸ. This is the source of the modern word *vỗ*, reconstructed with the voiced labiodental fricative onset β, thus providing potential evidence for this chronology of spirantization and then voicing.

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Ferlus (1992:113) further developed his 1982 model of spirantization, expanding it to include pairs of voiced and voiceless proto-segments, and positing earlier stages of the segments from Proto-Vietic. This is shown in Table 6. In that study, Ferlus also included the rhotic 'r', which has various modern realizations among Vietnamese dialects, but it is also often realized as a voiced fricative, as discussed in §3.5. The voiced and voiceless pairs in the proto-language stage were retained in the stage of spirantization, but later, the voiceless sounds merged into voiced sounds. Ferlus supports this with comparative data from sesquisyllabic words in both Thavung and Ruc. He did not hypothesize a time of this change, but based on textual data from Shimizu's study and of de Rhodes' 1651 Romanized dictionary of Vietnamese, we can hypothesize that it occurred in the centuries approaching the mid-2nd millennium CE.

Table 6: Proto-Vietic onsets and later forms

Proto-Vietic	Spirantized	Quốc Ngữ
*p, *b	ɸ, ß	v
*t, *d	θ, ð	d
*c, *ɟ (monosyllabic)	ç, j	gi
*ʧ, * ʤ		
*k, *g	χ, ɣ	g/gh
*s	ç (see §3.5)	r
*ɕ (monosyllabic)		

(Note: 'Monosyllabic' indicates that those onsets occurred only in monosyllabic words.)

Crucially, the intervocalic position of the lenited onsets was between an unstressed presyllable and a stressed main syllable (i.e., the C_2 in $C_1V.C_2VC_3$). This stress pattern is the typical Austroasiatic iambic stress pattern in words in Austroasiatic languages and is seen as well among conservative Vietic languages (see Alves 2021 for an overview of the typology of Vietic languages). Intervocalic lenition is a cross-linguistic phenomenon, involving changes in voicing, spirantization, and gemination (see cross-linguistic samples in Kirchner 1998:102, 136). Thus, as Thompson posited, this was a suitable phonological environment for the spirantization in Vietnamese.

Over 40 years later, new data can be checked to see how well this hypothesis holds, including Austroasiatic reconstructions of Shorto (2006) and Vietic reconstructions of Ferlus (2007), as provided in Table 7. For the Austroasiatic items, I have selected those with widespread representation among Austroasiatic languages. The sesquisyllabic Vietic reconstructions are attested by sesquisyllabic forms in Vietic languages (e.g., Vietnamese *vả* 'to slap' from Proto-Vietic *t.pa:h, based on May *tampah¹*, Sach *təpah¹*, and Arem *ṃpăh*, etc.). In general, the small sampling in Table 7 supports the hypothesis, though this select set is more consistent than when larger amounts of data are considered.[11]

In addition to Proto-Vietic words, early Chinese loanwords in Vietnamese (i.e., those borrowed before Late Middle Chinese) can be compared with sesquisyllabic Old Chinese reconstructions, as per Baxter and Sagart (2014a:93-94, 98). The remainder of this article proceeds as follows: (a) an overview of data sources and approaches, (b) the phonological sources of the five lenited Vietnamese onsets, and (c) a summary and concluding thoughts on the data and ethnohistorical-linguistic implications. Finally, tables in the Appendix list all the lexical data (Vietic and Old Chinese) used in this study grouped by onset type.

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[11] Vu (2020) provides a substantive overview and lists of comparative data for the topic of Vietic sesquisyllables (Vu 2020:42-55) and of possible previous prefixes (Vu 2020:56-73).

Table 7: Vietnamese onsets vs. presyllables in Proto-Vietic and Proto-Austroasiatic

Gloss	Vietnamese	Proto-Vietic	Proto-Austroasiatic
field crab	dam	*k.taːm	*ktaːm
lie (speaking)	dối	*p.toːjʔ	NA
bear (animal)	gấu	*c.kuːʔ ~ c.guːʔ	*ɟkaw (Vietic, Katuic, and Bahnaric)
break, snap off	gãy	*C.kɛs	*dkas (tentative)
lime (mineral)	vôi	*kn.pur	*knpur
gibbon	vượn	*k.waːɲʔ	*kwaːɲʔ (Vietic, Bahnaric, Katuic, and Aslian)

2. OVERVIEW OF DATA SOURCES

The data used for this study includes 118 Vietic reconstructions and 88 Old Chinese loanwords in Vietnamese. A breakdown of the instances of onsets are provided in Table 8.

Table 8: Numbers of relevant reconstructions in Vietic and Old Chinese

Group	No.	Breakdown
Vietic reconstructions	118 items	'd' x 25: 'g/gh' x 23: 'gi' x 15: 'r' x 16: 'v' x 38
Old Chinese loanwords	88 items	'd' x 13; 'g/gh' x 28; 'gi' x 12; 'r' x 15; 'v' x 20

As noted, the Vietic reconstructions are based on those of Ferlus (2007), who used comparative data from a dozen Vietic lects to reconstruct over 1,000 items. However, of these, only several hundred can be considered viable Proto-Vietic reconstructions since a few hundred reconstructions have attestations in only some sub-branches (e.g., only

Vietnamese and Muong, only Viet-Muong and Cuoi, etc.). To that data, I have added another dozen lects and reconstructed about 150 additional Proto-Vietic etyma and re-assessed and sometimes updated Ferlus's Vietic reconstructions. I have noted about 20 reconstructions attested only in Viet-Muong and Pong and/or Cuoi, not other more conservative sesquisyllabic languages. However, when these words are innovations shared by Viet-Muong and the Pong-Cuoi languages, such words must have still been sesquisyllabic in that period and had voiceless stops in intervocalic position, and like other such words, the intervocalic onsets became lenited later in Vietnamese and are valid instances of the phenomenon.

For Old Chinese reconstructions, the main source is Baxter and Sagart (2014), but Schuessler's 2009 Old Chinese and Han Chinese reconstructions (which do not include disyllabic reconstructions) were also checked and used for forms that Baxter and Sagart have not reconstructed. The timings of the borrowing of early Chinese loanwords were considered: some were borrowed in the stage of Late Old Chinese and thus could have retained presyllabic material, while those borrowed in the Early Middle Chinese period were already monosyllabic. I excluded items that were likely from Early Middle Chinese or later and focused on what phonological evidence suggests is possibly from Late Old Chinese in the first few centuries CE. Even if some of the proposed early Chinese loanwords are shown to belong to a later period, the overall tendencies in this study are well supported by substantial quantities of probable genuine Old Chinese loanwords.[12]

A note on Baxter and Sagart's Old Chinese reconstructions: Baxter and Sagart used data from conservative Vietic languages with early Chinese loanwords to provide support for their Old Chinese reconstructions with disyllabic forms, and they considered the issue of

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[12] In Baxter and Sagart's reconstruction notation, there are distinctions of types of presyllabic material as well as the issue of uvularized onsets. The main concern of these loanwords is the place of articulation of the intervocalic onsets, and not those other details. In the tables with information about complex onset material, I have taken shortcuts with presentation by not noting those differences as they would add excessive complexity to the tables without offering insights. The onset types in the numbered tables are simplified to omit brackets, uvularization marks, and so on.

lenited onsets in early Chinese loanwords in Vietnamese (Baxter and Sagart 2014:94). This creates a potential problem of circularity: I am comparing Old Chinese reconstructions with the same Vietnamese data used in consideration of those Chinese reconstructions.

However, that is not the only support they use in their Old Chinese reconstructions with disyllables. They refer as well to special classes of onsets in Kradai (Lakkia) and Proto-Min (Baxter and Sagart 2014:37). Also, the early Chinese loanwords in this study include at least a dozen Vietnamese items which have not been noted in past publications (e.g., Haudricourt (1954), Wang Li (1958) and Pulleyblank (1981, 1984)) and are likely not part of the data Baxter and Sagart used (though only some of the Vietnamese data they considered is presented in their book). Additional evidence comes from Xun (2019), who has reviewed textual data of several early disyllabic Vietnamese Chinese loanwords.

An additional point to consider is that many early Chinese loanwords in Vietnamese are reconstructed by Baxter and Sagart in Old Chinese with presyllabic material but are not lenited in Vietnamese (e.g., Viet. *bụa* 'widowed' from OC *mə.bəʔ 婦 fù; Viet. *cưỡi/cỡi* 'ride a horse' from OC *C.g(r)aj 騎 jì; Viet. *cũ* 'old' from OC *N-kʷəʔ-s 舊 jiù, etc.). There are more examples with tones that do not distinguish chronology and could have been borrowed in Old Chinese or Early Middle Chinese, but the instances provided here have tones suggesting time depth potentially to the Eastern Han period. Overall, Baxter and Sagart used a range of data sources to reconstruct, and Vietnamese loans were among various factors they considered.

Finally, the evidence of Proto-Vietic forms with presyllabic material is not in question, as modern sesquisyllabic Vietic languages provide ample attestations, among which are sesquisyllabic Austroasiatic etyma. Thus, the regular correspondences between disyllabic forms in conservative Vietic languages and Vietnamese words with lenited onsets do indeed support Baxter and Sagart's reconstructions of Old Chinese, as they have asserted. This loanword data also supports the notion that at least some Old Chinese presyllables lasted into the early period of language contact of Sinitic and Vietic in the Eastern Han (25 to 220 CE).

3. SOURCES OF LENITED VIETNAMESE ONSETS

This section presents the origins and diachronic developments of lenited onsets in Vietnamese: 'd', 'gi', 'g/gh', 'v', and 'r'. In each subsection, previous historical linguistic studies on the sounds are described, and assessments of such claims are made based on assembled data. I consider (a) Thompson's (1976) Proto-Viet-Muong reconstructions, (b) Ferlus's key works on spirantization (1982, 1992) and Proto-Vietic lexical reconstructions (2007), (c) Nguyễn T. C.'s (1995) Proto-Vietic reconstructions and posited origins of Vietnamese onsets, and (d) Gregerson's Master's thesis on Middle Vietnamese, based mainly on de Rhodes's 1651 description of Vietnamese speech sounds. For early Chinese loanwords, reference to data on the Muong lects in Nguyễn V. K. et al. (2002) is made for additional comparative context from that closely related Vietic lectal group. Then, dominant tendencies of source onset material in the data are noted, with tables showing numbers of categories of reconstructed onset material. The term "onset material" is used broadly in this diachronic study to include a range from simplexes, to onset clusters, to presyllabic material.

The tables in following subsections present reconstructions of onset material for sources of lenited Vietnamese onsets. Capital "C" is used to refer to nonspecific consonants in presyllable onsets. Also, the presyllables are reconstructed without vowels as there is no way currently to reconstruct specific vowels, or even to know if a full vowel was part of the sesquisyllable. In the Proto-Vietic form, periods are used to indicate syllable boundaries. Thus, in Table 7, the form *k.ta:m 'crab' has a sesquisyllable with a *k onset, and it could either have had a neutral vowel, or the *k itself had syllable status. Similarly, the notation used by Baxter and Sagart for Old Chinese disyllabic forms (2014:53), a period is used to mark presyllabic material, including what they call "tightly attached preinitials" with just single consonants, and those with schwa which they call "loosely attached preinitials". Regardless, such Sinitic loans would have likely been borrowed as sesquisyllabic forms.

In each table with data, the left column shows onset material of Proto-Vietic and Old Chinese; the next column shows the number of words in the data with such onset material; and the right column contains a

breakdown of specific items when detail is available ("C" there means a specific segment is not reconstructable). Rows of reconstructed words with presyllabic material are highlighted in light grey, visually contrasting them with monosyllabic proto-forms.

The goal of this study is not to answer all questions about the intermediary stages, such as precise reconstructions of intervocalic segments, but rather to establish patterns of the changes from source phonological material to modern voiced fricative onsets in Vietnamese. Many details of the process of that change cannot yet be answered in this study.

3.1 'd'

The Vietnamese Quốc Ngữ symbol 'd' is pronounced in two ways in modern varieties of Vietnamese: [z] in Northern Vietnamese and [j] in Central and Southern Vietnamese, though all are voiced continuants. Thompson (1976:1130) refers to a "hardening" of his reconstructed Proto-Viet-Muong *j (which he indicated with *y) to [dʲ]. However, Nguyễn T. C. (1995:62-64) posits sources of Proto-Vietic (what he calls Viêt-Chứt) *t and *d, as did Ferlus (1992), as in Table 6.[13]

In Ferlus's model (Ferlus 1992:113), the intervocalic segment became corresponding voiced or voiceless interdental fricatives *θ or *ð. Gregerson (1969:156-157) suggests that, at the time of de Rhodes' 1651 dictionary, the sound was a voiced segment, possibly *d, based on an early Vietnamese loanword in Chrau. However, that would depend on the timing of that single loanword, which is too little evidence to make such a claim.

In data from Muong, corresponding onsets are mostly [t], but with some instances of [d] and [j] (e.g., Muong *jǎl* 'to awaken', Viet. *dại*, PV *p.jərʔ). The path of change in Vietnamese from the lenited interdentals to modern [z] or [j] seems uncertain, so I will not hypothesize specific segments in the intervocalic position between the time of the original Vietic reconstruction and the modern segment in Vietnamese.

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[13] Both Nguyễn T. C. (1995) and Ferlus (1992) posit Middle Chinese origins of all the onsets in this study. These are not directly relevant to this study and thus are not described herein.

In the relevant Vietic reconstructions (see Table A in the Appendix), the most common source of 'd' is *t in intervocalic position in sesquisyllabic words in 17 of 24 instances. Of the other instances, three have *d, two have *j, and two are monosyllabic words with *j. Of the Old Chinese data (see Table F in the Appendix), *C.t/d makes up only 4 of 12 instances, while others contain intervocalic liquids *r or *l. For Muong, there are few attestations of these early Chinese loanwords, but of those, [t] is noted in a few cases (e.g., Muong *tao* 'knife', Viet. *dao*, Chinese 刀 dāo, OC *C.tˤaw).

> **Dominant pattern of source of 'd'**
> *C.[alveolar] > 'd'

Table 9: Vietic and OC onset material sources for Vietnamese 'd'

Onset Material	No.	Breakdown
Vietic		
*C.t	17	*C.t x 10; *k.t x 5 (AA x 2); *p.t x 2
*C.d	3	*C.d x 2; *k.d x 1
*C.j	2	*k.j x 1; *p.j x 2
*j	2	*j x 2
Total	24	
Old Chinese		
*C.t/d/tsʰ	5	*C.t x 3; *k.dr x 1; *m-tsʰ x 1
*Cə.l	2	*sə.l; *kə.l
*Cr/C-r	3	*N-r; *gr; *tsr (clusters with medial *r from Schuessler 2009)
*C	3	*l, *r, *j
Total	13	

Thus, the overall tendency is that reconstructed alveolar segments (i.e., mostly *t but also *d, *l, and *r) in intervocalic position in sesquisyllabic words became voiced continuant 'd' in modern Vietnamese. There are five instances of palatals, which should be the source for 'gi' (as discussed in §3.2), a matter for which I have no explanation. Still, this data largely supports the hypothesis of intervocalic lenition, but since some elements

of palatals in Proto-Vietic and of liquids (laterals and rhotics) in Old Chinese, alveolar stops are not the only source segments.

3.2 'gi'

Like Vietnamese 'd', 'gi' is a voiced alveolar fricative among Vietnamese dialects and is similarly realized as [z] in Northern Vietnamese and [j] in Central and Southern Vietnamese. However, in the Vinh dialect of Vietnamese in north-central Vietnam, a palatal feature is retained, with 'gi' realized as palatalized [ʐ], in contrast with 'd' realized as alveolar [z] (Ferlus 1991:1).

For Vietnamese words with 'gi', Ferlus (1992) and Nguyễn T. C. (1995:64-68) posit Proto-Vietic *c and *ɟ as the origins. Among Proto-Viet-Muong lexical reconstructions for words with Vietnamese 'gi', Thompson (1976) reconstructs disyllabic words with either *hə.c- or *ə.gɦj- presyllables plus main syllable onsets.

Gregerson (1969:161) suggests that, based on de Rhodes' 17th-century description, the segment was a palatal affricate *dʑ (he used the symbol dž). Ferlus instead posits a stage with voiced and voiceless palatal glides *ç and *j. In Muong, the related words have variously [j] and [c] palatal onsets. The process of the merger of 'd' and 'gi' is a matter beyond this study, but clearly, the two segments have two origins distinguished by place of articulation.

The early Chinese loanwords considered in this category had to be carefully selected. Some of the words with disyllabic forms also developed palatal fricative onsets in Middle Chinese and so could have been borrowed at that later monosyllabic stage. Also, some of those early Chinese loanwords have features suggesting that they are from the Early Middle Chinese stage, and I have done my best to identify and exclude them. These early Chinese loanwords in Muong commonly have voiceless palatal stop onsets (e.g., Muong *ciəŋ²¹* 'bed', Viet. *giường*, Chin. 床 chuáng, OC *k.dzraŋ).

In the data, the most common source material for 'gi' is palatal stop onsets in intervocalic position, with a scattering of onsets of other places of articulation (see the Appendix, Table B for Vietic and Table G for Old Chinese). The majority of the source word forms are sesquisyllabic

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reconstructions, but several onset clusters and simplex onsets are also source forms. While they tend to support the hypothesis of intervocalic lenition and Baxter and Sagart's Old Chinese forms with presyllabic material, this particular onset category is less consistent in source material.

> **Dominant pattern of source of 'gi'**
> *C.[palatal] > 'gi'

Table 10: Vietic and OC onset material sources for Vietnamese 'gi'

Onset Material	No.	Breakdown
Vietic		
C.c	5	k.c x 3; *ɲ.c x 1; C.c x 1
C.j	2	*k.j, *C.j
*k.ɟ	1	NA
*k.t	1	NA
*C	4	*c, *ɟ, *j, *kʰ
*kr	1	NA
Total	15	
Old Chinese	**No.**	**Breakdown**
*C.t	4	*k.t x 2; *C.1 x 1; *(mə-)t x 1
*C.[palatal]	3	*C.ts; *k.dz; *k.dzr
*C.[retroflex]	2	*k.dr, *C.tr
*sə-l	1	NA
*[d]r	1	NA
*[d]	1	NA
Total	12	

3.3 'g/gh'

The Vietnamese Quốc Ngữ symbol 'g' (or 'gh' before front vowels 'i' and 'ê') is realized as a voiced velar fricative [ɣ] in northern Vietnamese (but commonly [g] in other parts of Vietnam (Brunelle 2015:912)). For Proto-Vietic, Ferlus (1992) and Nguyễn T. C. (1995:69-70) reconstruct *k or *g as the origins of Vietnamese 'g/gh'. For Proto-Viet-Muong, Thompson (1976) reconstructs disyllabic words in which the onsets in the main syllables are either *k or *g. Gregerson (1969:165) accepted Maspero's (1912:23) assumption that it was derived from *k, in comparison with Muong lects. Gregerson posited that it was voiced by the time of de Rhodes' dictionary, though the evidence of frication was less certain based on de Rhodes' description. Ferlus (1992:113) posited a pair of intervocalic velar fricatives distinguished by voicing: *x and *ɣ. In Muong, the early Chinese loanwords also mostly have [k] onsets, but some instances of [g].

For Vietnamese 'g/gh', a solid majority of the source Vietic reconstructions (see Table C in the Appendix) and Old Chinese sources (see Table H in the Appendix) are sesquisyllabic forms with *k in the intervocalic position, but also with intervocalic *g in Vietic and uvular *q in Old Chinese. In several other instances, the onsets are simplexes, all of which are velar stops. It appears that *g onsets in monosyllabic words merged with modern 'g'. The dominant pattern for the source material is one in which there is an intervocalic velar segment, though with a slight expansion to include uvulars (which merged with velars, meaning they were likely *k by that time), but still ultimately, dorsal consonants broadly speaking. This pattern largely supports the hypothesis, and at the same time, supports the Old Chinese reconstructions of Baxter and Sagart.

> **Dominant pattern of source of 'g/gh'**
> C.[velar] > 'g/gh'

Table 11: Vietic and OC onset material sources for Vietnamese 'g/gh'

Onset Material	No.	Breakdown
Vietic		
*C.k	14	*t.k x 7; *C.k x 4; *r.k x 2; *ʔ.k x 1
*C.g	3	*C.g x 3
*g	5	NA
*k	1	NA
Total	23	
Old Chinese	**No.**	**Breakdown**
*C.k	15	*C.k x 8; *m.k x 4; *t.k x 1; *s.k x 1; *N-h x 1
*C.kr	7	*C.kr x 4; *s.kr x 2; *m.kr x 1
*C.q	3	*C.q x 2; *S-N-q x 1
*C.g	2	NA
*gʷ	1	NA
Total	28	

3.4 'v'

The Quốc Ngữ letter 'v' is realized in northern Vietnamese as [v], while to the south, it is typically a palatal glide [j]. Into the 20th century, in central dialects, a cluster [βj] was still a variant (Hoàng 1989:137-146). For 'v', Nguyễn T. C. (1995:58-62) variously reconstructs Proto-Vietic *v, *p, and *b, while Ferlus (1992) notes only *p and *b. Thompson (1976) reconstructs multiple types of onsets for 'v' in Proto-Viet-Muong, including monosyllabic words with *pj and *w onsets and disyllabic words with *p onsets.

In de Rhodes' 17th century dictionary, words that later became spelled with 'v' initially were originally written with the symbol ꞗ. Gregerson (1969:150) posited that de Rhodes' description was of a voiceless bilabial fricative. Similarly, Ferlus (1992:113) posits a stage with a pair of bilabial fricatives: voiceless [β] and voiced [ɸ].

Considering the various reconstructions, and based on current data, the sources of onset material of Vietnamese 'v' are diverse, as shown in Table 12 (see Tables D and I the Appendix for the lexical data). The intervocalic onsets in the data include *p, *b, *v, *w, and Old Chinese *ɢʷ, all having [labial] as a feature. In the three instances of Old Chinese *ɢʷ, the labial feature evidently became the primary feature. Many of these early Chinese loanwords with 'v' onsets in Vietnamese have [w] onsets in Muong (e.g., Muong *wẹ* 'to draw', Viet. *vẽ*, Chinese 畫 huà, OC *C-gʷˤrek-s).

There are interesting exceptions which are seen for 'v' and no other onsets in this study. In two cases, the presyllabic onset (rather than the intervocalic onset) has a labial *p in Vietic reconstructions, which are possible sources of the labial onsets in those words. Second, there are two instances in Old Chinese of *m onsets; there are no other instances of intervocalic nasals among any of the lenited onsets in this study. However, in the transition from Early Middle Chinese *m to Late Middle *w, there was a period of labiodental *ʋ, and thus a viable source of 'v' in these cases, and not the result of intervocalic lenition.[14] Finally, among Vietic reconstructions, while intervocalic onsets are not implosives in any of the disyllabic reconstructions in this data, there are six monosyllabic Vietic reconstructions with implosive *ɓ onsets. Interestingly, three of these six are also Austroasiatic etyma, though whether that is significant in the phonetic change remains uncertain.

There is nevertheless consistent presence of some type of labial onset material in all the source reconstructed words. A majority of the reconstructions are sesquisyllabic, but a notable number of the Vietic reconstructions are not. While retention of earlier *v explains some instances, the question of the cause of onset lenition in other monosyllables is unanswered for now.

Dominant pattern of source of 'v'
*C.[labial] > 'v'
*[labial] > 'v'

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[14] This matter was helpfully pointed out to me by an anonymous reader.

Table 12: Vietic and OC onset material sources for Vietnamese 'v'

Onset Material	No.	Breakdown
Vietic		
*C.p	16	*k.p x 7; *C.p x 5; *t.p x 4
*C.b	2	*C.b x 1; *t.b x 1
*C.v	3	NA
*p.l	1	NA
*p.n	1	NA
*k.w	1	NA
*v	6	NA
*ɓ	6	NA
*p	3	NA
*b	1	NA
Total	40	
Old Chinese	**No.**	**Breakdown**
*C.p	8	NA
*C.ɢʷ	3	NA
*C.m	2	NA
*mə.b	2	NA
*N.k	2	*N.k x 1; *m.k x 1
*ɢʷ	3	NA
Total	20	

3.5 'r'

The Vietnamese symbol 'r' is pronounced as alveolar [z] in the north but as a rhotic in central and southern Vietnam, with variation ranging from a flap to a voiced retroflex fricative. For Vietnamese 'r', Ferlus (1992) reconstructs *s and *ʂ, while Nguyễn T. C. (1995:114-119) posits origins of Proto-Vietic *r or onset clusters with medial *-r-. Similarly, Thompson (1976) reconstructs Proto-Viet-Muong *r and onset clusters with medial *-r-.

Gregerson (1969:160) posits that in de Rhodes' time, it was a flap which could be optionally spirantized, as in modern Southern Vietnamese. Correspondingly, Ferlus included 'r' in the class of onsets which represent

'spirantization'. To indicate the segment of the intermediary stage between Proto-Vietic and modern Vietnamese, Ferlus (1992:113) uses the sigma symbol ς, which should be a voiceless labialized alveolar or dental fricative, but he does not describe this.

In the assembled lexical data (see Tables E and J in the Appendix), the most common intervocalic onset is *r as an onset in both monosyllabic and disyllabic words in both Proto-Vietic and Old Chinese, but *s in intervocalic position is also seen in many instances. The Muong dialect data is complicated: the onsets range from [s] to [tʰ] to [r]. In a dozen monosyllabic words in both Vietic and Old Chinese, *r onsets are retained in modern Vietnamese.

The Vietic reconstructions provide comparative support for sesquisyllabic reconstructions in Old Chinese, as well as for the Old Chinese *r onset. The dominant pattern in Vietic is that of a sesquisyllable with intervocalic *r, but in both Vietic and Old Chinese, a notable number of the reconstructions are sesquisyllables with intervocalic *s. Lastly, again, retention of *r is seen in both Vietic and Old Chinese reconstructions. While the merging of *C.s with 'r' can be considered lenition in the early to mid-1st millennium, for reconstructions with intervocalic *r, the timing of the loss of the presyllables cannot be determined (i.e., whether the 'r' in modern Vietnamese could have occurred before or after lenition). Still, the large number of Vietic presyllabic reconstructions with intervocalic *r allows that at least some could have retained presyllables into the period of intervocalic softening.

Dominant pattern of source of 'r'
  *C.r/s > 'r'
        *r > 'r'

Table 12: Vietic and OC onset material sources for Vietnamese 'r'

Onset Material	No.	Breakdown
Vietic		
*C.r	23	*C.r x 7; *m.r x 4; *k.r x 3; *s.r x 3; *b.r x 2; *p.r x 2; *ʔ.r x 1
*C.s	8	*k.s x 4; *p.s x 2; *m/p.x x 1; C.s x 1
*m.l	1	NA
*r	6	NA
Total	38	
Old Chinese	**No.**	**Breakdown**
*C.s	4	NA
*C.r	3	NA
*C.sr	1	NA
*r	6	NA
*sr	1	NA
Total	15	

4. CONCLUDING THOUGHTS, QUESTIONS, CHRONOLOGY AND ETHNOHISTORICAL IMPLICATIONS

This study has presented data that supports and refines hypotheses of the process of loss of presyllables and modified simplex onsets. Most modern Vietnamese voiced fricative onsets are derived from stop onsets in previous intervocalic position and of the same place of articulation (e.g., *C.[velar] > modern Vietnamese 'g/gh').

However, while the data generally indicates the current updated hypothesis, there are numerous instances of changes that have no apparent conditioning factors. Some are retentions of earlier reconstructed simplexes (e.g., *g > 'g', *v > 'v', etc., as in *về* 'return' from Vietic *ve:r). But occasionally, evidence of presyllabic material is lacking (e.g.,

Vietnamese *vắt* 'press, wring' from Vietic *pat), and whether derivational prefixes existed in such instances remains to be determined. More data is needed, though it is uncertain whether enough additional data can be gathered to account for apparent exceptions.

The telescoping of presyllabic material into simplexes in Vietnamese makes reconstructions of presyllables challenging. However, with new data, including both native Vietic etyma and Old Chinese loanwords, it is increasingly feasible to do so. That the Vietic etyma are most often sesquisyllabic supports reconstructions of Old Chinese with presyllabic material, but other general historical phonological observations can be made.

- **Restructuring of the onset inventory**: The collapsing of complex onset material to simplexes was likely a factor in the restructuring of the onset system of Vietnamese (as summarized in Ferlus 1992 and Nguyễn T. C. 1995), which has a typologically odd distribution (e.g., no /p/ onset, no plain /b/, /d/, or /g/ sounds, etc.).
- **Tonogenesis before monosyllabification**: Comparative and textual data suggest that Vietnamese tonogenesis predates the loss of sesquisyllables by at least a few centuries (see Alves 2018 on hypotheses of the chronology of tonogenesis), but this happened centuries later than in Middle Chinese. In Viet-Muong, in sesquisyllabic words, we can assume they developed only on major syllables, which is the situation in modern Chứt languages (see Nguyễn V. L. 1993 and Tạ 2020 for description of the Ruc language). This supports previously noted studies (e.g., Shimizu 2015, etc.) that Vietnamese retained sesquisyllables into the 2nd millennium CE, possibly even after Phan's (2013) hypothesized shift of Annamese Chinese to Viet-Muong. If not, there would have been no environment to trigger this change. Regardless of the details, by the 1600s, only monosyllables with lenited onsets remained.
- **No lenition of nasal and implosive onsets**: Of the intervocalic segments that became lenited onsets in modern Vietnamese, none are implosive or nasal sounds. Some Proto-Vietic sesquisyllabic words must be reconstructed with those sounds in intervocalic position, but these sounds appear to have prevented lenition (e.g., Vietic *s.naːʔ

'crossbow' to Vietnamese *ná*, or implosives merged with nasals, as in Vietic *p.ɗuŋʔ to Vietnamese *nóng*).[15] This makes it impossible to offer a chronology of the loss of presyllables in these words without textual evidence.

- **Co-occurrence restrictions**: Throughout the data, a recurring feature of the sesquisyllabic words is that the two onsets of the presyllable and main syllable do not match in place of articulation. For example, in Table 9, while there is *k.t and *p.t, there is no instance of *t.t. A similar pattern is seen is seen throughout the reconstructed Vietic data and, if the restriction holds after further exploration of data, it could aid in future reconstructions by restricting the number of possibilities.
- **Vietnamese versus Muong lects**: Muong lects generally do not show this lenition of onsets (with a few exceptions, as per the tables of Muong dialect data in Nguyễn V. T. (2005)) and have typologically typical onset systems (i.e., p/t/c/k instead of implosive onsets or voiced fricative onsets, unlike in Vietnamese). Additional comparative data comes from Vietnamese of the north-central Nghe-Tinh region. The Vinh dialect in that region often has voiceless stop counterparts to the voiced ones, like Muong lects, as shown in Table 13, with exception in the 'ph' [f] initial in 'to wave'. Apparently, Vietnamese in that region followed a different path and chronology, a matter that is beyond the scope of this limited study and that must be saved for future queries.

   For broader historical context, I tentatively propose the chronology of key typological phonological changes from Vietic to Vietnamese as in Table 14, based on previous studies (e.g. Alves 2018) and the data considered in this study. The assumption is that laryngeal codas led to phonation and tone-like features, though at this point, details of the onset voicing changes leading to height distinctions are unclear. The timing of the lenition of intervocalic onsets, as discussed in previous sections,

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[15] Indeed, as one reviewer noted, nasal fricatives are typologically uncommon, making this hypothetical change unlikely. However, another possibility is for the change to be to place of articulation, such as labial *m in intervocalic position becoming 'v'. Another complication is that Proto-Vietic implosive stops merged with nasals (e.g., *ɗ becoming 'n', as in Proto-Vietic *ɗaːk and Vietnamese *nước* 'water').

should have happened at some point between the beginning and middle of the 2nd millennium.

Table 13: North-Central Vietnamese words with voiceless onsets

Gloss	Standard Viet.	North-Central Viet.	Muong	Source reconstructions
chicken	gà	ca	ca	*r.kaː (Proto-Vietic)
knee	gối	cúi	cỗl	*t.kuːlʔ (Proto-Vietic)
to wave	vẫy	phẩy	NA	*k.pəs (Proto-Vietic)
well (for water)	giếng	chiếng	chiểng	*C.tseŋʔ (Old Chinese)
bed	giường	chương/chơng	chiềng	*k.dzraŋ (Old Chinese)

(North-central Vietnamese data from Trinh 2022)

Table 14: Typological changes from Vietic to Vietnamese

Approximate dates	Features
Until late 1st mill. CE	• Presyllables retained • No tones
End of 1st mill. CE	• Presyllables retained • Rephonologization of codas and development of tones
Intermediary period	• Tone height influenced by onset voicing changes • Presyllables retained, but typological pressure towards monosyllabicity • **Lenition of intervocalic onsets** • Fully developed tone system
By mid-2nd mill. CE	• No presyllables • **Restructured onset system** • Tones

Some questions arise from the data, for which only initial hypotheses can be offered. First, why did the intervocalic lenition happen only in Vietnamese? The telescoping from sesquisyllabic to monosyllabic prosodic words has been a regional trend. However, what made Vietnamese prone to intervocalic lenition, not other Viet-Muong languages? The related Muong and Nguon lects/languages mostly did not undergo this lenition and retained voiceless onsets in main syllables.[16] One possibility is that the Muong lects underwent loss of presyllables sooner than in Vietnamese or at least before lenition could develop, as Thompson (1976:1131) speculated. Another possible factor is that this is related to marking of sociocultural status of archaic Vietnamese as the language of the cultural center, the development of the Nôm writing system for vernacular Vietnamese, and/or a sociocultural preference toward preserving the overall accent, delaying the ultimate complete loss of presyllables. Another possibility is that the spread of voicing from surrounding vowels during telescoping in Vietnamese might represent the phonetic impact of trying to retain presyllabic material. These speculations cannot be tested, but they are ideas to consider.

Second, what can explain the gaps in the data? In all the tables in §3, there were instances of Vietnamese words with voiced fricative onsets corresponding to monosyllabic reconstructions with voiceless stop onsets in both Vietic and Old Chinese, with no clear phonological conditioning factors for those changes. Conversely, why did some onset stops in reconstructed disyllabic words not undergo lenition in Vietnamese, as in Table 15? One reason could be that presyllables in some words were lost earlier than in others. It is possible that the dropping of presyllables varied

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[16] The lists of comparative data on 30 Muong lects in Nguyễn Văn Tài's 2005 book on Muong shows some instances in some words in which there was lenition. The number of such instances is small, so it is uncertain whether these are indications of lenition or the result of borrowing and/or influence from Vietnamese in later periods. Many lects may have lost presyllables earlier than Vietnamese did, or perhaps (most) lects did not undergo lenition. Even Cuoi retained voiceless stops (e.g., Viet. *vảy*, Cuoi *pal⁴⁴ʔ*, Vietic *k.pas), while conservative polysyllabic lects show instances of lenition (e.g., May *kaβɛh¹* 'to wave', Tho *βəoːjʹ* 'lime', etc.). This matter is beyond the scope of this study and will require additional study and consideration of Muong data.

among words, more like lexical diffusion than absolute sound change.[17] In those cases, the loss of presyllables in some words may have preceded onset lenition. Researchers must still seek conditioning factors, but telescoping can in many cases leave no traces of past phonological features to explain these, making the phonological history of many words unexplainable.

Table 15: Disyllabic reconstructions with intervocalic *k and [k] in modern Vietnamese

Gloss	Vietnamese	Proto-Vietic
branch	cành	*t.kɛːŋʔ (AA *kaŋ)
grill/grilling sticks (v/n)	cặp 'tongs'	*t.kap
sand	cát	*t.kaːc
cloudy/dim	cáu	*r.kuːʔ

Another area of onset material is clusters. Clusters *ml, *bl, and *tl in Vietnamese are supported by data in both Chinese and Nôm texts, comparative data in Vietic languages, and Romanized texts. The loss of clusters is even more recent than the loss of presyllables, with evidence as late as the early 1800s (Vu 2019). This is also counter to the idea that Vietnamese quickly came to resemble Chinese typology.

Beyond historical phonology, this data also increases understanding or at least raises hypotheses about Sinitic-Vietic language contact and the process of morphophonological restructuring, with ethnohistorical implications. Based on observation of modern language data, it might seem that language contact with Chinese dramatically and rapidly influenced[18] the ultimate trajectory of the telescoping of presyllabic material in Vietnamese. However, monosyllabic Middle Chinese was in contact with the Vietic ancestor of Vietnamese for more than several centuries before Vietnamese reached a stage of complete monosyllabicity,

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[17] See Miyake 2021 on comparable intervocalic lenition and varied loss of presyllables in Kradai.

[18] Contact with Tai languages is undoubtedly another factor, but details of the history of Tai-Vietic language contact is much less developed than for Sinitic-Vietic language contact.

and onset clusters remained even longer. The local bilingual Chinese-speaking community that eventually shifted to Viet-Muong would have spoken this sesquisyllabic tonal language.[19]

While that bilingualism may have contributed to the loss of presyllables, these presyllables appear to have remained even after the shift of the local Chinese-speaking community to Vietnamese. Other features of Vietnamese also suggest this kind of sociocultural status, such as the retention of the complete native numeral system (in contrast with the complete replacement with Sinitic numbers among Tai languages. See Alves 2022 for discussion). Despite the amount of lexical borrowing, the situation considered in this study could be an indication that the Viet-Muong speech community in northern Vietnam had sociocultural prominence in a bilingual Sinitic-Vietic community sufficient to retain native linguistic elements for many centuries despite typological pressure.

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[19] See Phan 2013 on the hypothesis of the shift of what he named "Annamese Chinese" to Viet-Muong in northern Vietnam in the centuries after Vietnam's independence from China.

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FROM VIETIC PRESYLLABLES TO VIETNAMESE SIMPLEX ONSETS

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Appendix: Tables of Comparative Data

(Notes: Austroasiatic reconstructions are those of Shorto (2006). Only those with widespread attestations have been included. When the attestations are geographically restricted, Austroasiatic branches having such forms are listed. As for Chinese, the Old Chinese and Middle Chinese forms are those of Baxter and Sagart 2014, except some instances of Schuessler's (2009) reconstructions; Key: (v) = verb, (n) = noun, AA = Austroasiatic, Sch = Schuessler 2009, OC = Old Chinese, L. Han = Late Han Dynasty Chinese as per Schuessler (2009), SV = Sino-Vietnamese readings, PY = Pinyin, MC = Middle Chinese, OC = Old Chinese).

Table A: Vietic etyma with 'd' onsets in Vietnamese

Gloss	Vietic Reconstructions	Vietnamese
wild (of plants)	*C.da:lʔ	dại
stop (v, intr.)	*C.diŋʔ	dừng
skin	*C.ta:	da
under	*C.ta:lʔ	dưới
lead (with a tether) (v)	*C.tac	dắt
goat	*C.te:	dê
cricket	*C.te:lʔ	dế
bury/cover (v)	*C.təp (AA *təp)	dập
sandal	*C.tɛ:p	dép
chestnut	*C.tɛh	dẻ (cây dẻ)
blackberry	*C.to:	dâu (cây dâu)
bamboo rat (Rhizomis)	*C.tu:jʔ	dúi
long/high	*ja:r	dài
naughty	*jɨh	dữ 'vicious'
thick	*k.daj	dày
gibbon	*k.jo:k	dộc
hard/tough	*k.ta:l	dai
crab	*k.ta:m (AA *ktaam)	dam 'field crab'
bamboo	*k.ta:ŋ	dang / giang
scrotum/testicles	*k.ta:lʔ	dái

Gloss	Vietic Reconstructions	Vietnamese
mark/footprint	*k.tawʔ	dấu
awaken/rise (v)	*p.jərʔ	dậy
awaken/rise (v)	*p.jərʔ	dây / dậy
build (v)	*p.tiŋʔ	dựng
lie/tell an untruth (v)	*p.to:jʔ	dối

Table B: Vietic etyma with 'gi' onsets in Vietnamese

Gloss	Vietic	Vietnamese
grape, Burmese (Baccaurea sapida)	*C.cu:	giâu (cây giâu gia)
kill (v)	*k.ce:t (AA *kcət 'to die')	giết
rag	*k.cɛh	giẻ
watch/look after (v)	*k.cih	giữ 'to keep'
mat (of leaves)	*ɲ.ca:rʔ	giại 'bamboo screen'
flat/flattened	*k.tɛ:p	giẹp
rich	*k.ɹaw	giàu
wind	*k.jɔ:ʔ (see AA *kjaal)	gió
raise (as of hand)/tighten (by hand) (v)	*C.jə:	giơ
old (in age)	*kʰra:	già
maggot/worm	*kʰrɔ:j	giòi 'larva/worm'
middle	*krah	giữa
roach/cockroach	*ca:nʔ	gián
vinegar	*jəmʔ	giấm
angry (v)	*ɹənʔ	giận

Table C: Vietic etyma with 'g/gh' onsets in Vietnamese

Gloss	Vietic	Vietnamese
stick, walking	*C.gi:ʔ	gậy
wash one's hair/shampoo (v)	*C.go:lʔ	gội

Gloss	Vietic	Vietnamese
bear (n)	*c.guːʔ; c.kuːʔ (AA *cguːʔ; ckuːʔ in Vietic, Bahnaric, and Katuic)	gấu
knock/rap (v)	*C.kɔːh ;*gɔːh (*g[uə]h)	gõ
woman, female; principal, main	*C.keːʔ	gái / cái
fold (v)	*C.kəp (AA *ckəp 'to cover')	gấp
break/break off/snap (v)	*C.kɛs (*[d]kah; *lkas)	gãy
span	*c.kaːŋ; *t.kaːŋ	gang
crow (cock) (v)	*t.karʔ	gáy
thorn	*t.keː	gai
hate (v)	*t.kɛːt	ghét
foot of tree/stump/root	*t.koːk	gốc
pillow/cushion and rest one's head	*t.koːlʔ; *t.koːrʔ	gối
knee	*t.kuːlʔ (AA *[ ]kuul)	gối
rice, husked	*r.koːʔ (AA *rk[aw]ʔ)	gạo
scratch (due to itch) (v)	*ʔ.kaːs (*kais)	gãi
chicken	*r.kaː	gà
kapok tree (Bombax)	*gaːwʔ	gạo
gnaw/nibble (v)	*gamʔ	gặm 'nibble/ be gnawed' (Nôm dictionaries)
pick up with chopsticks	*gap (Regional: AA, Chinese, Daic)	gắp
carve/chisel (v)	*gɔːt	gọt 'peel/whittle'
shell (crab, tortoise)	*goːp	gộp
gourd/calabash	*kaːwʔ	gáo

Table D: Vietic etyma with 'v' onsets in Vietnamese

Gloss	Vietic	Vietnamese
sew/repair (v)	*C.paːʔ	vá
hit with hand/slap (v)	*t.pah	vả
fig tree	*CV.vah	vả
slap (v)	*t.paːh (AA *pah 'to slap')	vả
carry (on shoulder) (v)	*ɓaːk (AA *ɓɔʔ or *[d]ɓaak)	vác
shoulder	*ɓaːj	vai
cloth of cotton	*k.paːs	vải
lychee/litchi	*paːjʔ	vải
twist/wring (v)	*vaɲʔ (AA *wiɲ)	vặn
deserted/absent (of people)	*ɓaŋʔ	vắng
trip/bump/stumble against (v)	*t.bəp	vấp
press (fruit)/wring (v)	*pat (AA *pit)	vắt
pluck off (v)	*p.lac	vặt
croquette of rice	*pat	vắt
borrow (v)	*ɓal (AA *pəl/*pul)	vay
skirt	*C.bəːlʔ	váy
fin	*C.piːl	vây
wave (v)	*k.pəs (AA *was (Bahnaric, Katuic, Khmeric, and Vietic))	vẫy
scale (of fish) > operculum	*k.pas	vảy
come back/return (v)	*veːr	về
shake/wag (the tail) (v)	*vas	ve vẩy 'to wag'; vung vẩy 'to swing arms'
pinch (v)	*ɓɛːwʔ	véo
duck	*viːt	vịt
bark/shell (n)	*k.pɔh	vỏ

Gloss	Vietic	Vietnamese
handful/contents of two cupped hands	*k.poːk	vốc
elephant	*C.vɔːj	voi
trunk (of an elephant)	*vɔːj	vòi
lime (mineral)	*k.puːr	vôi
round/circle	*ɓɔŋ	vòng
breast	*p.nuːʔ (AA *ʔbuuʔ)	vú
king/lord/ruler	*t.puə	vua
fit/be just right (v)	*C.pɯə	vừa
happy/joyful	*C.puːj	vui
bury/put in the ground	*buːl	vùi
heap up (v)	*C.pun (AA *ɓun/*ɓuun)	vun
lid/cover of pot	*k.puəŋ	vung
sesame	*C.viŋ	vừng, (mè)
gibbon	*k.waɲʔ; *k.waɲ (AA *kwaaɲʔ (Aslian, Bahnaric, Vietic)	vượn
throw (v)	*vət (AA *wat (Khmeric, Khmuic, Palaungic)	vứt 'to throw away'
thigh	*t.peːl	vế 'thigh'

Table E: Vietic etyma with 'r' onsets in Vietnamese

Gloss	Vietic	Vietnamese
mountain	*b.ruːʔ	rú, (núi)
forest	*b.ruːʔ (AA *briiʔ)	rú (rừng rú)
roast/fry (without oil) (v)	*C.raːŋ (cf. Bahnaric *-riəŋ)	rang
fry (v)	*C.ranʔ	rán
vegetables	*C.raw	rau
fill up (v)	*C.rɔːc	rót 'pour out'
sieve/sift (v)	*C.reː	rây, (sàng)

Gloss	Vietic	Vietnamese
galangal (Alpinia galanga)	*C.riɛŋ (cf. Katuic *-riɨŋ)	riềng
shiver, shake, rock (v)	*C.ruːn (#kruun (Bahnaric, Khmeric, Monic))	run
cry/call (of animal) (v)	*k.roːŋʔ	rống
bleat/cry/shout (v)	*k.ruː	rú
forest	*k-rəŋ (cf. Katuic *kruuŋ 'forest'; *kriŋ, *criŋ 'virgin forest')	rừng
whip (n)	*p.rɔːj	roi
knife/bush-knife	*m.raːʔ (from Tai *vraC 'sword' (Li), Several AA branches)	rạ / rựa
louse on the body	*m.rəŋʔ (AA *[d]mrəŋʔ)	rận
axe	*m.riːw	rìu
fly (n)	*m/p.rɔːj (AA *ruj)	ruồi
go out (v)	*s.raː	ra
beard/moustache	*s.roː	râu / (ria)
basket (flat, round, for fuits and vegetables)	*s.roh	rổ
tortoise/turtle	*ʔ.rɔː (cf. Several Munda languages (e.g. Mundari hɔrɔ, dura))	rùa
gather/pull out w. hands (v)	*p.ruːc	rút
field, dry	*s.reʔ (AA *sreʔ)	rẫy
fart/pass gas (v)	*k.samʔ	rắm
hard/firm	*k.sanʔ	rắn
tooth	*k.saŋ (AA *sraŋ)	răng
centipede	*kr.siːp (AA *kʔip)	rệp 'bedbug'
navel/umbilicous	*m/p.suːɲʔ	rốn
centipede	*C.seːt	rết / rít
snake	*p.saɲʔ (AA *[b]saɲʔ)	rắn

Gloss	Vietic	Vietnamese
otter	*p.seːʔ (AA *bheʔ)	rái
fly, bluebottle	*m.laŋ	ruồi lằng
stubble	*raːʔ	rạ
intestines	*rɔːc (AA *ruuc)	ruột
root	*riɛs (AA *ris)	rễ
wide	*roːŋʔ	rộng
fall (v)	*ruh	rũ
leak/drip (v)	*ruŋʔ	rụng

Table F: 'd' in Possible Old Chinese Loanwords

Viet.	Gloss	SV	Chin.	PY	MC	OC
dạo	stroll, to	đạo	道	dào	dawX	*[kə.l]ˤuʔ
dải	band, range	đái, đới	帶	dài	tajH	*C.tˤa[t]-s
dao	knife	đao	刀	dāo	taw	*C.tˤaw
dùi	awl	chùy	椎 (槌); cf. 錐	chuí	drwij	*k.druj
dễ	easy	dị	易	yì	yeH	*lek-s
dạ	stomach	đỗ	肚	dù	duX	*m-tˤaʔ
dậu	10th year in the cycle	dậu	酉	yǒu	yuwX	*N-ruʔ
diềm	fringe	liêm	簾	lián	ljem	*rem
dần	gradual	tuần	馴	xùn	zwin	*sə.lu[n]
dền, rền	amaranth	hiện	莧	xiàn	*ɣănC (Sch)	L. Han *gɛnC OC *grêns (Sch)
dua	flatter, toady	du	諛	yú	*jiu (Sch)	L. Han *jo OC *jo (Sch)
dưa	salted vegetables	trư, thư	菹	jū, zū, jù	*tsjwo (Sch)	L. Han *tsɑ OC *tsra (Sch)

Viet.	Gloss	SV	Chin.	PY	MC	OC
dùa	gather, collect	tụ	聚	jù	dzjuH	*m-tsʰoʔ-s

Table G: 'gi' in Possible Old Chinese Loanwords

Viet.	Gloss	SV	Chin.	PY	MC	OC
giêng	first month	chinh	正	zhēng	tsyeng	*C.teŋ
giếng	well	tỉnh	井	jǐng	tsjengX	*C.tseŋʔ
giống	type	chủng, chúng	種	zhǒng	tsyowngX	*k.toŋʔ
giấy	paper	chỉ	紙	zhǐ	tsyeX	*k.teʔ
giặc	bandit	tặc	賊	zéi	dzok	*k.dzˤək
giường	bed	sàng	床	chuáng	dzrjang	*k.dzraŋ
giùi	awl	chùy	椎 (槌); cf. 錐	chuí	drwij	*k.druj
giương/giăng/chăng	stretch/extend, to	trương	張	zhāng	trjang	*C.traŋ
giồng/trồng	plant, to	chúng	種	zhǒng	tsyowngH	*(mə-)toŋʔ-s
giã	thank; take leave	tạ	謝	xié	zjaeH	*sə-lAk-s
giượng	husband of aunt	trượng	丈	zháng	drjangX	*[d]raŋʔ
giờ	hour, time	thì	時	shí	dzyi	*[d]ə

Table H: 'g/gh' in Possible Old Chinese Loanwords

Viet.	Gloss	SV	Chin.	PY	MC	OC
góa	widowed	quả	寡	guǎ	kwaeX	*[C.k]ʷˤraʔ
gửi/gởi	send, to	ký	寄	jì	kjeH	*C.[k](r)aj-s
gỏi	dish of chopped	khoái	膾	kuài	kwajH	*C.[k]ˤ[o][p]-s

Viet.	Gloss	SV	Chin.	PY	MC	OC
	vegetables and meat					
gân	sinew/tendon	cân	筋	jīn	kj+n	*C.[k]ə[n]
góc	corner	giác	角	jiǎo/jué	kaewk	*C.[k]ˁrok
ghi	record (written), to	ký	記	jì	kiH	*C.k(r)ə(ʔ)-s
gác	pavilion	các	閣	gé	kak	*C.kˁak
gang	steel	cương	鋼	gāng	kang	*C.kˁaŋ
ghẻ	itch (n.); scabs	giới	疥	jiè	keajH	*C.kˁr[e][p]-s
ghế	chair	kỷ	几/機	jī	kijX	*C.kr[ə]jʔ
gừng	ginger	khương	姜	jiāng	kjang	*C.qaŋ
gương	mirror	kính	鏡	jìng	kjaengH	*C.qraŋ-s
guốc	wooden clogs	kịch	屐	jī	gjaek	*Cə.[g]rek
gấm	brocade/embroidered silk	cẩm	錦	jǐn	kimX	*Cə.k(r)[ə]mʔ
gồm	include, to	hàm	含	hán	hom	*Cə-m-kˁ[ə]m
gào	shout, to	hào, hiệu	號	háo, hào	haw	*[C.g]ˁaw
gạch	draw a line	hoạch	畫	huà	hweak	*gʷˁrek
gượng	make effort, to	cưỡng, cường	強	jiàng, qiáng	gjang	*m-kaŋʔ

Viet.	Gloss	SV	Chin.	PY	MC	OC
gắp	take with chopsticks, to	giáp	挾/夾	jiā, xié	hep	*m-kˤep
góp	contribute; join (in), take part (in);	hợp; hiệp	合	gě, hé	hop	*m-kˤop; *kˤop
gộp	combine	hợp; hiệp	合	gě, hé	hop	*m-kˤop; *kˤop
ganh	compete	cạnh	競	jìng	gjaengH	*m-kraŋʔ-s
gần	near	cận	近	jìn	gj+nH	*N-kərʔ
gan	liver	can	肝	gān	kan	*s.kˤa[r]
gươm	sword	kiếm	劍	jiàn	kjaemH	*s.kr[a]m-s
gả	marry, to	giá	嫁	jià	kaeH	*s.kˤra-s
ghen	be jealous	tiện, di	羨	xiàn	zjenH	*s-N-qa[r]-s
ghim	pin/needle	châm	針/鍼	zhēn	tsyim	*t.[k]əm

Table I: 'v' in Possible Old Chinese Loanwords

Viet.	Gloss	SV	Chin.	PY	MC	OC
vá	mend, to	bổ	補	bǔ	puX	*[Cə]-pˤaʔ
vã	go on foot, walk	bộ	步	bù	buH	*mə-bˤa-s
vách	wall/partition	bích	壁	bì	pek	*C.pˤek
vạch	draw a stroke, to	hoạch	畫/劃	huà	hweaH	*C-gʷˤrek-s
vái	pray, beseech (compounds)	bái	拜	bài	peajH	*C.pˤro[t]-s
ván	board/plank	bản	板, 版	bǎn	paenX	*C.pˤranʔ
vàn	ten thousand	vạn	萬	wàn	mjonH	*C.ma[n]-s

Viet.	Gloss	SV	Chin.	PY	MC	OC
vàn vàn	crowded, numerous	vạn	萬	wàn	mjonH	*C.ma[n]-s
vàng	yellow/gold	hoàng	黃	huáng	hwang	*N-kʷˤaŋ
vẽ	draw/paint, to	họa	畫/劃	huà	hweaH	*C-gʷˤrek-s
ví	compare, to	tỷ	比	bǐ	pjijX	*C.pijʔ
việc	work	dịch	役	yì	ywek	*ɢʷek
vò	jar	vu	盂	yú	hju	*[ɢ]ʷ(r)a
vợ	wife	phụ	婦	fù	bjuwX	*mə.bəʔ
vốn	capital/funds	bổn, bản	本	běn	pwonX	*C.pˤə[n]ʔ
vòng	rainbow (in cầu vòng)	hồng	虹	hóng	huwng	*m-kˤoŋ
vùa	assist (in vùa giúp)	phò, phù	扶	fú	bju	*m-[p](r)a
vườn	garden	viên	園	yuán	hjwon	*C.ɢʷa[n]
vuông	square	phương	方	fāng	pjang	*C-paŋ
vượt	cross over, to	việt	越	yuè	hjwot	*[ɢ]ʷat

Table J: 'r' in Possible Old Chinese Loanwords

Viet.	Gloss	SV	Chin.	PY	MC	OC
rò	leak, to	lậu	漏	lòu	luwH	*[Nə-r]ˤok-s
ràn	stall, pen, enclosure	lan	闌	lán	lan	*[r]ˤan
rèn	forge, to	luyện	鍊; 煉	liàn	lenH	*[r]ˤen-s
rương	box; trunk	tương	箱	xiāng	sjang	*C.[s]aŋ
rao	announce/advertise/cry out	táo	譟	zào	sawH	*C.sˤaw-s
ráo	dry	táo	燥	zào	sawX	*C.sˤawʔ
rảy	sprinkle	sái	灑	să	sreaX	*Cə.s<r>ərʔ

Viet.	Gloss	SV	Chin.	PY	MC	OC
rây	strain/sift	si	釃	shāi	srje	*Cə.sre
rồng	dragon	long	龍	lóng	ljowng	*mˤroŋ
râm	shade	âm	陰	yīn	im	*q(r)um
rường	kingpost	lương	梁	liáng	ljang	*raŋ
rèm	bamboo curtain/blinds	liêm	簾	lián	ljem	*rem
rọc	pulley (in ròng rọc)	lộc	轆	lù	*liek-luk (Sch)	L. Han *lek -lok OC NONE (but see rhyme *rôk) (Sch)
rui	rafter	suy	榱	cuī	*ṣwi (Sch)	L. Han *ṣui OC *srui (Sch)
ruộng	field	lũng	壟	lǒng	*ljwoŋB (Sch)	L. Han *lioŋB OC *roŋ? (Sch)

從原始越語支的前音節到越南語的聲母

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本文回顧原始越語支（Vietic）的雙音節單詞到越南語單音節單詞的弱化現象(reduction)以及越南語濁輔音的發展。Thompson (1976:1131-1133) 重建的越芒語支(Viet-Muong)以及後來 Ferlus (1982 & 1992)重建的原始越語支都假設塞音*p/t/c/k 和 *b/d/ɟ/g 的擦音化發生在雙音節之間的位置和前音節丟失時，也因此產生越南語聲母'v' [v]、'd' [z]（來自假設的中古越南語*ð）、'gi'[z]（來自假設的中古越南語*ʒ)，以及單音節詞中的 'g/gh' [ɣ]。本文比較相關的原始越語支和上古漢語詞彙的重建，語音資料支持Thompson 和 Ferlus 的假設，但同時也揭示了更複雜的情況。

關鍵字：越南語, 原始越語支, 上古漢語, 音韻史