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## **Tone Correlation between Chinese Words and Sino-Vietnamese Words**

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### **Abstract**

Due to a long history of language contact under Chinese domination, Vietnamese has borrowed many words from Literary Chinese during the Middle Chinese period. The tonal systems of the two languages have been extensively studied and described; however, there has been no previous research that looks into how these two tonal systems interact in borrowed words, or Sino-Vietnamese words. Since both Vietnamese and Chinese are tonal languages, I expect there to be some parallel between the tones of the two languages in Sino-Vietnamese words and my research aims to fill this gap. I survey the most common 100 Sino-Vietnamese words according to Alves (2017) to see if there are any parallels among the tones of these words and their corresponding modern Chinese words. <sup>1</sup> As Standard Modern Chinese has four tones and Vietnamese has six tones, there cannot be a one-to-one parallel. However, my survey has shown that there are certain corresponding trends between the tones of Chinese words and Sino-Vietnamese borrowed words, even if these parallels are not strict. My research finds that tones in Modern Standard Chinese words tend to correspond to one or two tones in the corresponding Sino-Vietnamese words. To explain

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<sup>1</sup> Mark Alves. "High Frequency Sino-Vietnamese Vocabulary: Top 100 Characters." Montgomery College, 2017.

why the tone parallels are not strict, I also argue that both Vietnamese and Chinese have undergone language change since the period of extensive contact. As a part of sound change, the tones of both languages have developed, and this process makes them more different in the present than they were.

### **Introduction**

Chinese and Vietnamese are two remarkably similar languages, so similar that some scholars in the past (such as Jean-Louis Taberd) have mistakenly classified them in the same language family. The similarities between these two languages run deep: both are isolating, tonal languages, with SVO word order and sentence-ending particles. The vocabularies of the two languages also have a lot in common; however, the similar vocabularies consist not of cognates but of borrowed words. For about 1000 years (111 BC – 939 AD), Vietnam was under Chinese rule and during this time, Vietnamese borrowed many lexical items from Chinese. Since Vietnamese and Chinese are languages that have undergone tonogenesis, it would be interesting to compare the tones of these two languages, especially in borrowed words, also known as Sino-Vietnamese words.

### **Previous Literature**

To compare the two tonal systems, one can simply compare the quality and number of tones alone. In her article, “Đối chiếu Thanh điệu Tiếng Hán và Tiếng Việt [Comparing Chinese and Vietnamese Tones,” Vi Thị Hoa describes the tonal systems of both languages and offers a comparison based on their tonal qualities. Vietnamese has six tones while Chinese has four main tones (and a neutral tone), so Vietnamese has more tones than Chinese. Vi also remarks that in general, Chinese tones are higher than Vietnamese tones, and Vietnamese tones are more complex.<sup>2</sup> Tables 1 and 2 show the relative pitch of Chinese and Vietnamese tones, respectively. All tables in this paper are taken from Vi’s 2019 article. It is important to note that Vi’s numbering system for

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<sup>2</sup> Thị Hoa Vi. “Đối chiếu Thanh điệu Tiếng Hán và Tiếng Việt [Comparing Chinese and Vietnamese Tones].” *Khoa học Ngoại ngữ Quân sự* 7 (2019), 57.

Vietnamese tones are different from the one I will use: while Vi calls “thanh nặng” in Vietnamese the 5th tone, and “thanh sắc” the 6th, I call “thanh nặng” the 6th and “thanh sắc” the 5th tone. In this paper, whenever I mention tone 5 and 6, it refers to the numbering system that I use.

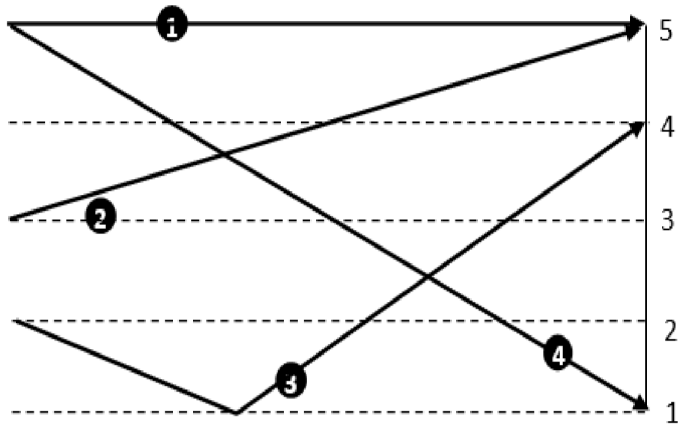


Figure 1: Chinese Tones Relative Pitch.

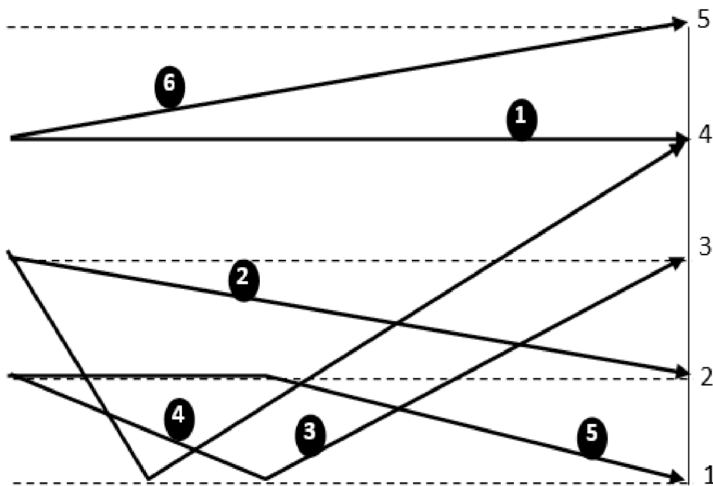


Figure 2: Vietnamese Tones Relative Pitch.

After describing the tonal systems of Chinese and Vietnamese in separation, Vi goes into analyzing similar tones across the two languages. The first comparable pair is Chinese tone 1 and Vietnamese tone 1, which are both high/mid-tones whose pitch has to be maintained even; however, Chinese tone 1 is higher than Vietnamese tone 1 (Figure 1; Figure 2). The second comparable pair is Chinese tone 2 and Vietnamese tone 5 (or tone 6, as Vi numbers it). They are both rising tones, and Vi claims that they are “basically the same,” but that Chinese tone 2 starts higher and lasts longer than Vietnamese tone 5.<sup>3</sup> Third, Chinese tone 3 and Vietnamese tone 3 & 4, because they are all dipping tones (as in they fall and then rise). Despite this, Chinese tone 3 rises to a higher pitch than Vietnamese tone 3.<sup>4</sup> Lastly, Vi compares Chinese tone 4 and Vietnamese tone 6 (Vi calls this tone 5). They are both low tones, however, Chinese tone 4 starts much higher than Vietnamese tone 6, and Vietnamese tone 6 maintains its pitch for a bit before falling.<sup>5</sup>

Vi’s work in comparing the two tonal languages is a great basis for my own research. While the tonal qualities have been compared, there has been no previous research that compares the tones in borrowed, or Sino-Vietnamese, words. Since both languages are tonal, this question should be natural. I pose questions such as: When a word with Chinese a particular tone is borrowed into Vietnamese, what tone would that borrowed word usually have? I will attempt to fulfill this gap in research of Chinese and Vietnamese tones with my own comparison, building on the research done by Vi Thị Hoa.

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<sup>3</sup> Thị Hoa Vi. “Đối chiếu Thanh điệu Tiếng Hán và Tiếng Việt [Comparing Chinese and Vietnamese Tones].” *Khoa học Ngoại ngữ Quân sự* 7 (2019), 58.

<sup>4</sup> Thị Hoa Vi. “Đối chiếu Thanh điệu Tiếng Hán và Tiếng Việt [Comparing Chinese and Vietnamese Tones].” *Khoa học Ngoại ngữ Quân sự* 7 (2019), 59.

<sup>5</sup> Thị Hoa Vi. “Đối chiếu Thanh điệu Tiếng Hán và Tiếng Việt [Comparing Chinese and Vietnamese Tones].” *Khoa học Ngoại ngữ Quân sự* 7 (2019), 59; Figure 1, Figure 2.

## Methodology

I use the list of the 100 most common Sino-Vietnamese words provided by Alves (2017) as the basis for my analysis.<sup>6</sup> I list the tones of the Chinese words and their corresponding Vietnamese tone in Sino-Vietnamese words. Afterward, I will tally the number of times that each Chinese tone occurs. Within each Chinese tone, I will tally how many times they correlate with each Vietnamese tone and see which one has the most correlations.

## Research Hypothesis

Based on the previous research done by Vi, I propose four hypotheses regarding the correlation between Chinese and Vietnamese tones in borrowed words, based on the similarity of their tonal qualities. First, I propose that words with Chinese tone 1 will mostly have Vietnamese tone 1 when borrowed into Vietnamese. Second, Chinese tone 2 mostly will correlate with Vietnamese tone 5. Third, Chinese tone 3 will mostly correlate with Vietnamese tone 3 and 4. Fourth, Chinese tone 4 will mostly correlate with Vietnamese tone 2 and 6.

## Findings

The word list provided by Alves has more than 100 words, and after excluding words that are repeated, I compare the remaining 111 words.<sup>7</sup> The comparison can be seen in the table below.

Sino-Vietnamese word	Chinese word	Sino-Vietnamese Tone	Chinese Tone
Bà	婆	2	2
An	安	1	1
Kinh	京	1	1
Thể	体	4	3
Bản	本	4	3

<sup>6</sup> Mark Alves. "High Frequency Sino-Vietnamese Vocabulary: Top 100 Characters." Montgomery College, 2017.

<sup>7</sup> Mark Alves. "High Frequency Sino-Vietnamese Vocabulary: Top 100 Characters." Montgomery College, 2017.

Báo	报	5	4
Bị	被	6	4
Bộ	部	6	4
Các	各	5	4
Cao	高	1	1
Độ	度	6	4
Chế	制	5	4
Chỉ	只	4	1
Chiến	战	5	4
Tranh	争	1	1
Đảng	党	4	3
Chính	正	5	4,
Chủ	主	4	3
Trọng	重	6	4
Chức	职	5	2
Cơ	机	1	1
Cộng	共	6	4
Công	公	1	1
Tư	司	1	1
Cấp	给	5	3
Đại	大	6	4
Đạo	道	6	4
Cầu	球	2	2
Điều	条	2	2
Do	由	1	2
Đối	对	5	4
Đồng	同	2	2
Từ	词	2	2
Vật	物	6	4

Dự	预	6	4
Đức	德	5	2
Đường	唐	2	2
Gia	家	1	1
Giá	价	5	4
Trị	治	6	4
Giải	解	4	3
Giáo	教	5	4
Hà	河	2	2
Hàng	航	2	2
Tại	在	6	4
Hiện	现	6	4
Hóa	化	4	4
Sinh	生	1	1
Hợp	合	6	2
Kết	结	5	2
Học	学	6	2
Tế	济	5	4
Kỳ	奇	2	2
Liên	联	1	2
Tiếp	继	5	4
Luật	律	6	4
Lực	力	6	4
Mỹ	美	3	3
Nguyễn	阮	3	3
Dân	民	1	2
Nhân	人	1	2
Sự	事	6	4
Viên	员	1	2

Nhất	一	5	1
Định	定	6	4
Như	如	1	2
Nhưng	仍	1	2
Nội	内	6	4
Ông	翁	1	1
Pháp	法	5	3
Phát	发	5	1
Nhận	认	6	4
Quá	过	5	4
Đội	队	6	4
Quan	关	1	1
Quân	军	1	1
Quốc	国	5	2
Hội	会	6	4
Quyền	权	2	2
Quyết	决	5	2
Sản	产	4	3
Số	数	5	4
Thực	实	6	2
Tài	财	2	2
Giới	界	5	4
Thi	诗	1	1
Thời	时	1	2
Thông	通	1	1
Thủ	手	4	3
Thường	常	2	2
Tiền	前	2	2
Toàn	全	2	2



Tổng	总	4	3
Thống	统	5	3
Trung	中	1	1
Tâm	心	1	1
Trường	长	2	2
Thành	城	2	2
Tự	字	6	4
Nhiên	然	1	2
Đề	题	2	2
Động	动	6	4
Văn	文	1	2
Vị	位	6	4
Nam	南	1	2
Việt	越	6	4
Xuất	出	5	1
Không	空	1	1
Anh	英	1	2
Hành	行	2	3
Tổ	祖	4	3

*Table 1: Findings*

### Analysis

After comparing the tones of each word, I tally the number of times each Chinese tone occurs. Chinese Tone 1 occurs 21 times, Chinese Tone 2 occurs 37 times, Chinese Tone 3 occurs 15 times, and Chinese Tone 4 occurs 38 times.

Chinese Tones	Vietnamese Tone 1	Vietnamese Tone 2	Vietnamese Tone 3	Vietnamese Tone 4	Vietnamese Tone 5	Vietnamese Tone 6	Total
Chinese Tone 1	<b>17</b>	0	0	1	3	0	21
	<b>81%</b>	0%	0%	4.8%	14.3%	0%	100%
	<b>12</b>	<b>17</b>	0	0	5	3	37

Chinese Tone 2	<b>32.4%</b>	<b>45.9%</b>	0%	0%	13.5%	8.1%	100%
Chinese Tone 3	0	1	2	<b>9</b>	3	0	15
	0%	6.7%	13.3%	<b>60%</b>	20%	0%	100%
Chinese Tone 4	0	0	0	1	<b>13</b>	<b>24</b>	38
	0%	0%	0%	2.6%	<b>34.2%</b>	<b>63.2%</b>	100%

*Table 2: Each Chinese tone's occurrence and their corresponding Sino-Vietnamese tone*

From the analysis, it can be seen that my research hypotheses were not entirely wrong. Chinese tone 1 has a very strong correlation with Vietnamese tone 1 (81%), as I hypothesize (Table 2). Chinese Tone 2 correlates more with Vietnamese tone 1 and 2, which is completely different from my previous hypothesis. For my two remaining hypotheses, they were half correct. I hypothesize that Chinese tone 3 will correlate with Vietnamese tone 3 and 4, however, the comparison only finds a strong correlation with Vietnamese tone 4. Chinese tone 4 correlates with Vietnamese tone 5 and 6, not 2 and 6 (Table 2). This is especially peculiar since Chinese tone 4 is a falling tone while Vietnamese tone 5 is a rising tone.

My hypotheses are based on comparing the tonal quality of the two languages: I hypothesize that similar tones in these two languages will correlate with each other in borrowed words. Because this is not the case, as my analysis has shown, then it is important to explain why the correlation is neither strict (with one-on-one correlation) nor as expected.

To begin with, the Chinese Rule period in Vietnamese history lasted from 111 BC – 939 AD, which is from the late Old Chinese period to Middle Chinese period.<sup>8</sup> This means that Vietnamese mostly came under the influence of Middle Chinese. Middle Chinese had four tones, but these four tones are not the same as the four Modern Standard Chinese Tones. The tones that were similar during the time of borrowing

<sup>8</sup> Hongyuan Dong. *A History of the Chinese Language*. London and New York: Routledge, 2017, 7.

might have changed to become different, or different tones at the time of borrowing might have changed to be similar.

Another possible explanation is that the word pool that I surveyed was too small: I only surveyed 111 words, and among them, only 15 had the Chinese tone 3. This sample size is very small to draw a decisive conclusion, and a larger word pool might yield different results.

### **Direction for Future Research**

My research is only a beginning attempt at comparing Chinese and Vietnamese tones in Sino-Vietnamese words. As stated above, my sample size is too narrow, and the correlation found during my analysis is only preliminary. Future research could follow this direction in expanding to utilizing a larger word pool to arrive at a more decisive conclusion. Moreover, it remains to be answered why the tonal correlations are not clear-cut, and why seemingly similar tones do not always correlate with each other in Sino-Vietnamese words.

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