

# The Comparative Study of Traditional Chinese and Thai Music wind Instruments

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## Abstracts

This study focuses on the wind instruments of China and Thailand, classifying and comparing them, and delving into the similarities and differences in their structural features, principles of sound generation, and tonal characteristics. It forms the conclusion that the "Chinese and Thai wind instruments shape each other", further activating the ethnic color hidden in the culture of Chinese and Thai wind instruments.

**Keywords:** Traditional Music history; Chinese wind instruments; Thai wind instruments

## Introduction

As the most representative wind instruments in world music culture, with the longest history and widest distribution, many countries have wind instruments with a similar but distinct structure and sound. For instance, the Chinese Guanzi and Suona and the Thai Pi Chawa and Pi Nai produce sound through the vibration of reeds; the Bawu and Paisheng from southwestern China and the Pi Jum and Kaen from northeastern Thailand; and the Pi Jum and Kaen from southern China and northern Thailand. In addition to the Chinese bamboo flute, Thai Khlui, Turk Ney, Korean Daegum, and Japanese Ryuteki, the "flute" is a wind instrument that produces sound through the vibration of its edge. The "flute" of each country has unique characteristics, but its social function and artistic value are universal. This study examines the wind instruments of China and Thailand, classifying and comparing them and examining their structural features, sound generation principles, and tonal characteristics for similarities and differences. It leads to the conclusion that "Chinese and Thai wind instruments influence one another," thereby activating the latent ethnic colour in the cultures of Chinese and Thai wind instruments.

## Research objectives

1. To clarify the historical background and the classification of the Chinese and Thai wind instruments
2. To compare of the wind instruments between "Zhudi" (a Chinese bamboo flute) and "Khlui Piang O" (a Thai flute) in organology and musical aspect
3. To study the Chinese and Thai socio - cultural interaction contexts through the dimension of the wind instrument song

## Research Methodology

The research methods include a review of the relevant literature, field research, in-depth interviews, and practical experiments. The procedure utilized all available materials from the libraries of Chulalongkorn University in Thailand, Srinakharnwirot University, Chiang Mai History Centre, and Gannan Normal University in China, in addition to electronic resources such as "Scirus" and "CNKI." For data collection, organization, and analysis, exhaustive research was conducted on the manufacturing process of the Chinese bamboo flute, Xiao, and the Thai Khlui, Pi Chawa, as well as interviews with Chinese and Thai wind instrument players and manufacturers.

## Research Scope

Using the wind instruments of China and Thailand as the primary research subjects and focusing primarily on the history, categories, tones, and structures of wind instruments, as well as representative pieces from the Chinese bamboo flute and Thai Khlui Piang O, this study investigates the common features of wind instruments in cultural context: value function, structural association, and iterative changes. It examines the cultural characteristics and significance of Chinese and Thai wind instruments from different vantage points.

## Research Findings

### 1. Comparative Analysis of Chinese and Thai Wind Instruments Categories

According to the Hornbostel-Sachs classification system, Chinese and Thai wind instruments are divided into edge-blown aerophones, reed vibration aerophones, and cavity vibration aerophones. Edge-blown aerophones include the Chinese Bamboo flute and Xiao, and the Thai Khlui and Whode. Reed vibration aerophones include the Chinese Suona, Guanzi, Hulusi, and Bawu, and the Thai Pi Nai, Pi Chawa, Pi Jum, and Kaen. Cavity vibration aerophones include the horns and conch shells of China and Thailand.

Based on the material used for production, these can be classified into categories such as wood, bamboo, clay, and shell. For example, the Khlui, Pi Nai, Pi Nae, Pi Chawa, Suona, and Guanzi are made of wood. The Kaen, Whode, Bamboo flute, Xiao, and Lusheng are made of bamboo. The Xun is made of clay, and the conch shell is an example of a shell instrument. In the course of their development, some wind instruments underwent a transition from bamboo to wood.

In terms of sound production, they can be divided into directly blown aerophones and indirectly blown aerophones, such as the directly blown Bamboo flute, Xiao, Khlui, etc. Indirectly blown aerophones are divided into reed instruments and whistle instruments. Reed instruments use a copper material as the exciter, including the Sheng, Hulusi, Bawu, Kaen, Pijum, etc. Whistle instruments use reeds or palm leaves as the exciter, including the Guanzi, Suona, Pinai, Pichawa, Pinae, etc.

From a structural point of view, they can be divided into single tube (body) instruments and multiple tube (body) instruments, for example, single tube instruments like the Bamboo flute, Xiao, Suona, Khlui, Pinai, Pinae, etc.; single body instruments like the Xun, shell, conch, etc.; multiple tube instruments like the Sheng, Paixiao, Whode, Kaen, etc.



**Figure 1** Thai Pi Nai



**Figure 2** Chinese Guanzi



**Figure 3** Thai Pi Chawa



**Figure 4** Thai Pi Nae



**Figure 5** Chinese Suona



**Figure 6** Thai Pi Jum



**Figure 7** Chinese Bawu

## 2. Comparative Analysis of Artistic Features of Chinese and Thai Wind Instruments

2.1 Sound Production Principle. Chinese and Thai wind instruments differ in their sound-producing bodies and power sources, resulting in different sound production principles. The so-called aerophones function on the principle of edge vibration or reed vibration. This is mainly demonstrated when the human body applies force to blow air into a tube, causing the air to strike the column or exciter, producing sound. Although these are aerophones, differences exist between instruments. For example: the Chinese Bamboo flute and the Thai Khlui. The Chinese Bamboo flute is a transverse flute with an open tube, one end of which is plugged with a cork, while the other end is open. The Thai Khlui is a straight tube, played vertically, with a cork at the top and a mouthpiece, and a cut at the cork's location on the tube. Airflow strikes the tube through this cut, causing vibration and sound production. There are also instruments that produce sound via reed and whistle. For instance, instruments that produce sound by the vibration of a copper reed include the Chinese wind instruments Hulusi, Bawu, Paisheng, Sheng, and the Thai Kaen, Pi Jum, etc. Instruments that produce sound through the vibration of a double reed made of reed or palm leaf include the Chinese Suona, Guanzi and the Thai Pi Nai, Pi Nae, etc. Although they produce sound through the vibration of a double reed (a type of exciter), different materials result in different sounds. The exciter material for the Chinese Guanzi and Suona is reed, while for the Thai Pi Nai and Pi Nae, it's palm leaf. When comparing the shapes of the reeds, they all display a characteristic of being wider at the top and narrower at the bottom, mainly due to the relationship between the airflow trigger and the vibrating surface. The wider the contact surface between the airflow and the material, the larger the vibration surface, making sound production more sensitive. Also, the volume of the top pin connecting the tube is not large, and the reed forms a small envelope, creating a closed loop when the input airflow enters the top pin tube, which also forms the narrower-bottom, wider-top shape.



**Figure 8** Whistle of Thai Pi Nai



**Figure 9** Whistle of Chinese Suona



**Figure 10** Whistle of Chinese Guanzi



**Figure 11** Reed of Chinese Hulusi



**Figure 12** Reed of Thai Pi Jum

2.2 Breath Control. The use of breath has the most direct relationship with sound production. Wind instruments produce sound through air vibration, but different tube bodies, sound-producing bodies, and power sources produce different effects. In terms of breath use and regulation, the intensity of the airflow has the most direct impact on the sound effect. For Guanzi, Suona, Pi Nai, and Pi Nae, which produce sound through reed-whistle vibration, the size of the airflow affects the specific pitch and volume. This pitch control requires the modulation of airflow intensity and results in a sliding up or down pitch. Using different intensity of breath while playing a single tone hole can produce multiple pitches. For single-tube multi-tone instruments like the Bamboo flute, Xiao, and Khlui, controlling the pitch with airflow is more difficult compared to other wind instruments. This mainly depends on the intensity of the breath to adjust the pitch. Moreover, the regulation of volume size with breath intensity also exists among instruments, such as the Chinese Bamboo flute and Thai Khlui. The Chinese Bamboo flute produces sound when airflow directly strikes the edge of the blowhole, and the intensity of the airflow can effectively regulate the volume and pitch. The Thai Khlui produces sound when airflow strikes the edge of the cut near the narrow cork gap, reducing the airflow's strength and control during the process, thereby decreasing the regulation space for volume control with airflow intensity.

2.3 Playing Techniques. In terms of playing techniques for the Chinese Bamboo flute and the Khlui, the Chinese Bamboo flute's techniques are used based on the music theme and style, following a relatively fixed form and system. Songting Zhao, a representative figure of the southern school of the Chinese bamboo flute, mentioned in his work "Spring and Autumn of Flute Art": "The northern tunes are good at articulation, glides, staccato, and trills; the southern tunes are proficient in tremolos, repeats, grace notes, and percussive sounds" (Zhao Songting;1985). vividly expressing the playing techniques of the northern and southern schools of the Chinese bamboo flute. From the technique application of the Chinese bamboo flute, the Thai Khlui's technique performance has both similarities and differences. Similarities lie in the application of similar techniques, such as tremolo, repeated notes, and cyclic breathing. Differences arise from different music cultures, which create different effects in technique usage. The Thai Khlui's music style is primarily rustic, rich, and expressive, which poses specific requirements for its technique performance. At the same time, influenced by language culture, Thai pronunciation and charm are characterized by their subtlety, softness, and delicacy, which make Thai music very gentle. Therefore, the Thai Khlui has very flexible playing techniques. Compared to the Chinese Bamboo flute, techniques like cyclic breathing, repeated notes, and changing fingers for the same note are more common on the Thai Khlui. Meanwhile, Thai wind instrument performers can flexibly add techniques based on playing habits or their understanding of the emotion in the music. This has resulted in various different versions of traditional music performances and traditions.

2.4 Rhythmic Features. The rhythm, beat, and pitch of Chinese and Thai wind instrument music possess unique characteristics. The rhythm, tempo, and speed of Chinese wind instrument music are highly diverse. The music structure often follows a pattern of prelude + theme + allegro + finale, with the tempo mainly varying between free rhythm, slow, moderate, and fast. Thai wind instruments utilize rhythmically divided notes and dotted notes, a fixed 2/4 time signature, seven-tone equal temperament, and progressive tempo characteristics, which all contribute to the unique attributes of Thai music.

Comparing melodic segments from representative pieces for the Chinese Bamboo flute, "Gusu Journey Song", and the Thai Khlui, "Lao Duang Deun", clear rhythmic, beat, and technique characteristics of Chinese and Thai wind instruments can be observed. (Figures 13/14)

Gusu Journey Song

Composer: Jiang Xianwei  
 Transcriber: Hai Bo

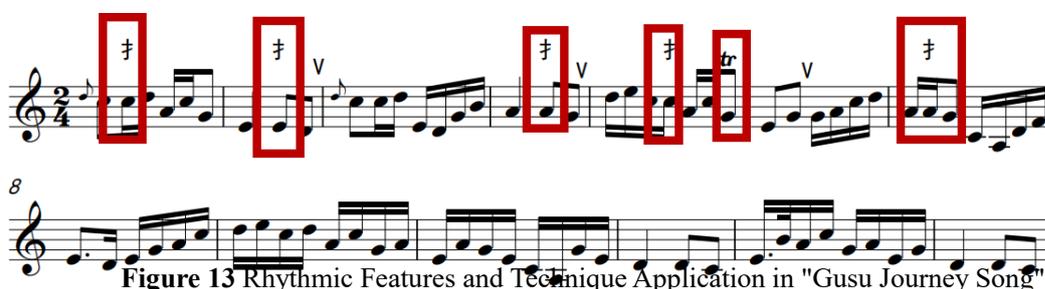


Figure 13 Rhythmic Features and Technique Application in "Gusu Journey Song"

Lao Duang Deun Song

Benbadhanabongse  
 Composer: Prince  
 Transcriber: Hai Bo



Figure 14 Rhythmic Features and Technique Application in "Lao Duang Deun"

Explanation: Khuang refers to a technique of changing fingering for the same note; Proy refers to a vibrato technique; Tinio refers to a tonguing technique; Phom refers to a circular breathing technique.

## Discussion

1. The development of musical instruments and their symbolic representations in Chinese and Thai cultures are diverse, integrating theories from ethnology, anthropology, sociology, and others, forming distinctive yet interconnected musical paradigms. The path from singularity to variation, from systematization to plurality, has enabled the transformation and unification of cultural and musical objects. The structure, tonality, and sound production principles of wind instruments in China and Thailand reflect the integration of foreign and native cultures. This process, marked by social migration, the evolution of objects, cultural synergy, and symbolic representation, has shaped the distinctive cultural symbols of each ethnicity. These symbols are abstract, while the instruments themselves are concrete. In the transformation from object to subject, changes have occurred in the form and tonality of the instruments, aligning with the culture, spirit, aesthetics, and ideas of the host country, thus constructing the ultimate image of the instrument.

2. Discussing the structure of the sound space of the musical instrument from the perspective of the object phenomenon. From an acoustic perspective, Chinese and Thai wind instruments have similarities and differences in their spatial structures. Both the Chinese Bamboo flute and Thai Khlui are edge-tone instruments. In terms of excitation devices, Chinese Bamboo flute, Xiao, and Thai Khlui; Chinese Suona, Guanzi, and Thai Pi Nai, Pi Nae, Pi Chawa; Chinese Paisheng, Hulusi, Chinese Bawu and Thai Kaen, Pijum have similar reed, vibrating body, and pipe structures. However, differences in edge tone, reed, whistle, and pipe structures result in different tonalities and manufacturing processes. Variations in the diameter, radius, and inner diameter of the mouthpiece, as well as the length of the pipe, contribute to the unique characteristics of the Chinese Bamboo flute and Thai Khlui. The development of wind instruments is also a process of subject transformation, reflecting the human need for expression in the object of the instrument. The human-centered needs are reflected in the transformation of the instrument, leading to even greater diversity in its origins and changes.

## Recommendations

### 1. Theoretical Recommendations

The Reconstruction and Review of the Cultural Core of Chinese and Thai Wind Instruments. The British mathematician and philosopher Whitehead's view proposed by the social scientist Whitehead, "seek complexity and make it orderly," is an effective method to deal with multiculturalism in social activities. In the cultural attributes of China and Thailand, each carries its own "aura," possessing unique cultural features. Comparing and analyzing these in depth, there are commonalities in the cultural supports of China and Thailand. This commonality lies in the cultural core, cultural concepts, and cultural atmosphere under cultural opposition.

### 2. Policy Recommendations

The Specific Path to Breaking the Cultural Barriers between China and Thailand. Franz Boas, the "Father of American Anthropology", proposed cultural relativism, which holds that different cultures have different ethical practices. The views advocated by Franz Boas and Mel Herskovits provide a theoretical basis for breaking down the cultural barriers between China and Thailand. China and Thailand have extremely similar cultural concepts, forming the most fundamental cultural commonality and unity. From the rational interpretation of

ethnicization to the cultural reconciliation that breaks through cultural barriers, it is the easing of conceptual conflicts and the creation of a cultural commonality and unity atmosphere. The solution to cultural problems under cultural conflict is considered the most direct and effective way.

### 3. Practical Recommendations

The synchronic and diachronic research approaches proposed by the British social anthropologist Radcliffe-Brown in the specific methods of "comparative sociology", when applied to the study of Chinese and Thai music culture, is comprehensive and multi-dimensional. This includes the study of the music history, music theory, instrument performance, and the social activities and ethnic culture reflected by China and Thailand. The establishment of the cultural concept of "harmony in difference", "harmony in similarity", and "harmony in all" between China and Thailand is not only synchronic but also diachronic. For example: the integration of Chinese and Thai traditional music into school curriculum construction; the hosting of Chinese and Thai cultural exchanges, traditional music annual meetings, etc., in order to maximize the value of the cultural core and construct the value system of Chinese and Thai traditional music culture.

### References

- David R. M. Irving. (2012). *Lully in Siam: music and diplomacy in French-Siamese cultural exchanges 1680-1690*. EARLY MUSIC
- Eiichi Hizen & Akria Nozaki. (2015). *In the light of History*. Bangkok: Chatthip Nartsupha and Chris Baker Japanese-Thai Seminar and Sangsan Publishing House
- Songting Zhao, (1985). *Flute Art Spring and Autumn*. Zhejiang People's Press
- Supinda Rattanatangkoon (2018). " *Research on the folk traditional "Naka" arts in Northeast Thailand*". Northeast Normal University Doctoral Dissertation