A Comparative Study of Morin Khuur and Cello Performance Techniques

in the Background of Modern Chinese History

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Abstract

This study explores the performance techniques of the morin khuur, a traditional Mongolian

string instrument, and the Western traditional instrument cello, examining them within the

context of modern Chinese culture and history. Through a combination of Documentary

Research and performance experiments, the research explores how the cello can imitate the

expressive qualities and performance techniques of the morin khuur. The study's results

emphasize the cello's remarkable adaptability and its potential to absorb and translate non-

Western musical techniques. This study contributes to the growing discussion on intercultural

performance and provides valuable insights for cellists interested in exploring traditional

Chinese and ethnic minority musical forms. The results have significant practical value for

performance, pedagogy, and composition, especially in efforts to bridge Western and Chinese

musical traditions.

Keywords: Morin Khuur, Cello, Performance Technique, Chinese Ethnic Music, Intercultural

Music, Musical Imitation

Introduction

Within the broader scope of modern Chinese history, the combination of Western classical

music and traditional ethnic instruments has created a rich environment for cross-cultural

artistic exploration (Shuwen; SIWEN & Jamnongsarn, 2024; Wang et al., 2021). Among these,

the cello — a symbol of Western Classical music — has increasingly engaged with the musical

aesthetics of China's ethnic minorities (Lao, 2025; Melvin & Cai, 2004; Pan, 2023). This study



1110

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Vol. 65. No. 2, 2025

compares performance techniques between the morin khuur, a Mongolian bowed string

instrument, and the cello. The aim is to explore the cello's ability to imitate the timbral and

performative capabilities of the morin khuur.

This study examines how the cello can adapt to embody characteristics associated with morin

khuur performance through a combination of historical-literary analysis and practical

performance experimentation. Through the context of modern China, where the integration of

ethnic and national identities through musical fusions has gained popularity, this paper explores

how performance practice can become a platform for cultural communication.

Literature Review

Historical Background of Cross-Cultural Music Integration

The introduction of Western music into China dates back to early missionary activities and was

enhanced during the May 4 New Culture Movement (1919), which promoted Western classical

training in Chinese conservatories (Gong, 2018; Ho, 2003).

The historical evolution of cross-cultural musical integration provides the necessary

background to understand how Chinese music has absorbed elements of Western music at

different stages of history while maintaining its uniqueness (Chingchih, 2010; Lindenfeld,

2005). This study is based on this stage, exploring how instrumental music has become an

important tool for this cultural exchange and analyzing its adaptation in terms of performance

techniques.

Instrumental Performance Adaptation in Cross-Cultural Music

The adaptation of Chinese instrumental techniques to Western instruments plays a crucial role

in cross-cultural performance. Fung (1994) argues that musical adaptation is not merely

technical but deeply rooted in cultural philosophy, influencing how performers approach

articulation, ornamentation, and phrasing (Shuwen; Wang et al., 2021; Zhang & Wang, 2024).

In the field of stringed instruments, Mendoza (2015) and Jiang (1991) highlight the difficulties

1111

of transferring techniques such as glissando, vibrato, and bowing styles from traditional

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Vol. 65. No. 2, 2025

Chinese instruments to Western instruments (Zhao, 2024). This is particularly relevant for the

cello, which has been studied as a tool for imitating traditional Chinese stringed instruments,

including the erhu and morin khuur (Bogen, 2019; Han, 2009; Koh, 2024).

These studies have revealed the challenges of adapting Western instruments to performance

techniques and how cross-cultural musical expression can be realized through adaptation and

innovation (Howng, 2020; Jiao, 2014; YIZHEN & Jamnongsarn, 2024). Within this framework,

this study will analyze the unique expressiveness of stringed instruments in cross-cultural

musical performances and explore how the instrument's performance potential can be realized

while maintaining the originality of the musical style (D'Evelyn, 2013; Piza, 2023; Wong,

2016).

Despite technical challenges, cross-cultural adaptation continues to evolve, pushed by

experimentation in both composition and performance (Anderson, 1994; Yamazaki & Kayes,

2004). Scholars emphasize the need for cultural sensitivity and technical innovation in

combining different musical traditions to ensure both artistic integrity and authenticity (Chang

et al., 2011; Perleth & Heller, 2007).

The Adaptation of the Cello in Chinese Traditional Music: Imitation of the Morin Khuur

and Other Ethnic Instruments

As a Western instrument, the cello has continued to adapt to local musical styles since its arrival

in China and has made remarkable developments in imitating traditional ethnic instruments

such as the morin khuur and erhu (Liu, 2011; Shuwen). By adapting timbre, playing techniques,

and performance styles, composers and performers have explored the cello's adaptability to

ethnic music, making it an important member of the Chinese musical system (Li, 2017; Wu,

2017).

In order to better adapt to the performance style of Chinese music, the Cello borrowed

techniques from Morin Khuur and Erhu, including glissando, vibrato, and special bowing

techniques (Chong, 2016; Koh, 2024; SIWEN & Jamnongsarn, 2024). Zhang Baojun (2020)

1112

studied Sheng Zongliang's work Seven Tunes Heard In China, noting that the work imitates the

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Vol. 65. No. 2, 2025

timbre of the erhu through the Cello and employs a glissando technique similar to that of the

huqin (Howng, 2020; Shi, 2024).

In addition to the left-hand technique, bowing adjustments are also important; Zhang (2020)

notes that to mimic the Morin Khuur, Cello players need to use the "poco tasto" to obtain a

softer tone similar to the Morin Khuur, while the "poco ponticello" can create a more

articulation, close to the thick resonance of the Mongolian music (Bogen, 2019; Jiao, 2014).

Tan Dun's "Feng-Ya-Song" (1982) and Sheng Zongliang's work "Seven Tunes Heard In China"

(2001) use pizzicato to mimic the playing technique of the guqin, giving the Cello new

possibilities in Chinese musical representation. In addition, Yo-Yo Ma's Silk Road Ensemble

demonstrates the Cello's ability to adapt to cross-cultural music, especially when playing with

traditional instruments such as the erhu and pipa, where its sound can be fused into the overall

sound while retaining its own identity (Wei, 2023; Wong, 2016).

The adaptability of these techniques to performance practice proves that the Cello can

effectively mimic the expressiveness of Chinese folk instruments by adjusting techniques such

as glissando, bowing, and timbre control. On this basis, this study will further analyze the

Cello's expression in contemporary ethnic music works and explore how the Cello can achieve

true cross-cultural fusion between different musical styles through the combination of

compositional and performance techniques.

Reproduction of Morin Khuur Performance Techniques on the Cello: Technical Analysis

and Challenges

The transplantation of Morin Khuur's playing techniques on the Cello has provided an

important practical approach to the nationalization of the Western instrument. Its vibrato

technique, bowing control, and ornamentation significantly expand the Cello's expressive

scope (Turner, 2014).

Adapting Morin Khuur's performance techniques to the cello involves many aspects of left-

hand technique, bowing techniques, and timbre modifications. Scholars such as Li Tong, Zhang

1113

Bo, Ao Zheng, Yan Le, Hua Lei, and Bischoff have all provided guidance on how the cello can

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Vol. 65. No. 2, 2025

effectively imitate the unique expressive qualities of the Morin Khuur. Their approaches and

emphases, however, are quite different (Weiss, 2022).

Li Tong's research on Mongolian-style cello music emphasizes the importance of ornamental

techniques, especially glissando, vibrato, and double stops, in catching the richness of

Mongolian folk melodies. She argues that these elements are key to achieving the expressive

depth of the morin khuur, especially in its characteristic sliding sounds and ornamentation

(Kalra, 2014).

Regarding the bowing technique, several scholars have discussed how the Cello imitates the

rhythmic and dynamic qualities of the Morin Khuur. Yan Yue (2010), Bischoff(1969), Ao

Zheng (2013), and Hua Lei (2012) all mention the typical Mongolian rhythmic pattern

common in Mongolian music (Rancier, 2009). However, Yan's study uniquely

emphasizes how long bow technique and bow pressure control enable the Cello to maintain a

dynamically flowing single note that effectively mimics the rich, clear timbre of the Morin

Khuur. Additionally, Li suggests another method of altering the timbre by suggesting a mute

on the Cello, which softens the timbre of the cello to more closely match that of the Morin

Khuur.

These studies have shown that adopting Morin Kul techniques on the Cello requires a multiple

approach, including left-hand flexibility, bowing strategies, and timbral processing. This study

will build on these research findings and explore further the practical use of these techniques

in performance practice, leading to a more comprehensive understanding of how the Cello can

effectively bridge Western and Mongolian musical traditions.

Cultural Considerations and the Challenges of Interpretation

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In addition to performing techniques, applying Morin Kul's techniques to the Cello requires a

deeper cultural and interpretive understanding. Technical imitation is not enough; the performer

must move beyond the boundaries of Western classical phrasing and use a more fluid, language-

like articulation that reflects the narrative nature of Mongolian folk music (Moran, 2022). Yan

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1114

Le said that to achieve the goal that the audience knows Mongolian music when they hear the melody played by the performer, the performer must study and learn the style and characteristics of Mongolian music in depth to achieve both spirit and body (Jablonska, 2024).

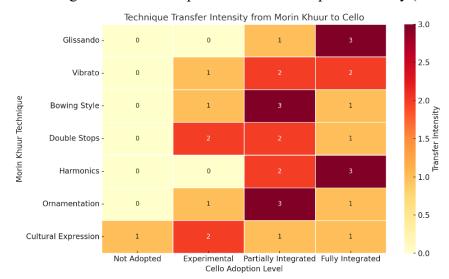


Figure 1. Heat map illustrating the intensity of technique transfer from the Morin Khuur to the Cello.

Rows represent core Morin Khuur techniques; columns represent the level of adoption in cello performance. Warmer colors (red/orange) indicate higher transfer intensity, while cooler shades represent minimal or no adoption. Techniques such as glissando and harmonics show full integration, whereas cultural expression and ornamentation remain partially explored.

Table 1: Key Challenges in Cello Imitation of Morin Khuur Techniques

Challenge Area	Description	Suggested Solutions /	
		Techniques	
Timbre Matching	Cello is more resonant and smooth;	Use sul tasto, mute, or bow	
	Morin Khuur is airy and nasal	near fingerboard	
Bow Grip Differences	Opposite orientations in bow hold	Practice grip transitions, use	
	and string contact	hybrid techniques	
Sliding/Ornamentation	Morin Khuur uses more expressive,	Train left-hand flexibility	
	melodic glissandi	and portamento phrasing	



ISSN: 0009-7039 Vol. 65. No. 2, 2025

Rhythmic	Mongolian phrasing differs from	Learn idiomatic rhythms
Interpretation	Western metrical rigidity	through listening and
		analysis
Cultural Embodiment	Technical imitation ≠ stylistic	Study cultural roots, folk
	authenticity	song language, historical
		context
Resonance Sensitivity	Cello has overtones suited for	Adjust bow pressure and
	harmonic clarity, not always	vibrato width to mimic
	idiomatic to folk	intent

History of the Cello in China

When and How the Cello Came to China (Before 1911)

Since the Wanli period of the Ming Dynasty, missionaries from various countries have been introducing Western musical cultures and instruments to China, such as Italian Jesuit priest Matteo Ricci (6 October 1552 - 11 May 1610), Flemish Jesuit missionary Ferdinand Verbiest (6 October 1552 - 11 May 1610), Portuguese Jesuit Tomé Pereira (1 November 1645 - 1708). They served as music teachers and court musicians for Kangxi and Qianlong in the Forbidden City and organized rehearsals and performances of Western bands. During the Qing dynasty, the French missionary John Walter examined a small violin (violin), two long violins (cello), and other Western instruments, such as the European flute, mottled bamboo percussions for Qianlong during his sixth and seventh years. The earliest documented cellist in China was a eunuch, and the teacher who taught the eunuch was a Western missionary who played the violin (Bogen, 2019). However, Western musical cultures and instruments have been active in the Forbidden City and have not been widely circulated among the people (Meng).

In 1863, Sir Robert Hart was appointed Inspector General of Customs. He was also passionate about music, practicing the violin and cello for a long time. In 1885, Sir Robert Hart purchased several instruments at his own cost and recruited a group of Chinese students. In the late 1880s,



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Vol. 65. No. 2, 2025

he established a brass band and selected some students to study the cello and violin to join the

ensemble. By 1890, two Chinese cellists had been added to the ensemble as well (Hart, 1975).

When Czarist Russia encroached on the northeast of China, the first stationed its garrison in

the city of Harbin, and this was the beginning of the spread of Western musical culture and

instruments to all of China. The Russian expatriates gradually developed string quartets,

chamber music ensembles, and full orchestras to enrich Harbin's musical entertainment life.

From then on, the Russian cello school began growing and developing in China (Yang et al.,

2020). With the spread of the cello to the provinces of China, although there are differences in

the development from one province to another, the cello has gradually appeared from Beijing

and Harbin in the north of China to Shanghai and Taiwan in the south of China (Jesselson,

1985).

Development of Cello Performance and Education in China

The Performance and Education from 1911 to 1949 in China

Following the entry of Czarist Russia into Harbin, particularly following the outbreak of the

October Revolution, Harbin gradually became one of the cultural centers of the Far East. A

significant number of Russian diasporas chose to settle in Harbin, bringing with them a rich

European cultural and artistic atmosphere. As the Russian diaspora increased, Harbin became

an important center for Western art and music (Long). Russian cellists, as an important part of

Western music culture, have gradually become active on Harbin's music stage. For example,

cellist Aleksandr Valerianovich, a professor of cello at the Saint Petersburg Conservatory, and

Russian diaspora cellist Igor Shevtzoff both engage in performances and teaching activities in

Harbin. Concurrently, several Russian diaspora cellists moved to Shanghai to seek employment

and opportunities to perform in local symphony orchestras such as the Shanghai Municipal

Orchestra and Band (Shanghai Symphony Orchestra). This also contributed to the spread and

popularization of the cello in China (Chen, 1997).

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With the outbreak of the Russo-Japanese War in 1904-1905 and the First World War in 1914,

social unrest and war forced more Russian cellists from Harbin to migrate to other cities in

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1117

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Vol. 65. No. 2, 2025

China, including Dalian, Shenyang, Beijing, Shanghai, and Hong Kong, where they continued

their performing careers and gradually settled down. These Russian cellists from Harbin not

only gained a place in the music scene of China's major cities but also made important

contributions to the development of cello education and teaching cello techniques, directly

influencing and cultivating the first generation of Chinese cellists and music educators, such

as Situ Youwen, Chongzhi Zhu, and Delun Li (Provine et al., 2017).

Following the year 1931, an increasing number of Chinese cellists began to join various types

of Chinese orchestras and Chinese music bands. In 1940, the Zhonghua Symphony Orchestra

was founded, which was the first symphony orchestra made up of completely local musicians

in China. From then on, Chinese bands and orchestras began to have their own Chinese cellists,

and Chinese cellists gradually participated and performed in Chinese movie soundtracks and

recordings, which opened a new chapter in the development of the cello in China (Chingchih,

2010).

The Russian diaspora not only played a significant role in the spread and development of cello

art in China but also established a strong foundation for the long-term development of cello

education in China. Starting in 1925, several conservatories in various provinces of China

established cello majors as part of their curriculum. These included the Glazunov School of

Music in Harbin (July 1925), the Conservatory of Music of the Peking National University in

Beijing (1922), the Shanghai National Conservatory of Music (Shanghai Conservatory of

Music) in Shanghai (1927), and the Hangzhou National Academy of Fine Arts in Hangzhou

(1929). A significant number of foreign cellists, including those of Russian diaspora cellists,

have taught cello at these conservatories and have trained a considerable number of highly

proficient Chinese cellists such as Igor Shevtzoff (Gerber, 2008; LIWEN, 2024).

In 1919, Igor Shevtzoff arrived in Harbin and started teaching at the Glazunov School of Music

in 1925. His students, including Deren Li, Xiaolin Lan, Hanwen Ji, Jinglu Xia, and Yishan

Qian, were Chinese cellists who made significant contributions to the advancement of cello art

and education in China after 1949 (Yang, 2016). In 1928, Igor Shevtzoff joined the faculty of

1118

the Shanghai National Conservatory of Music, where he continued to engage in teaching and

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Vol. 65. No. 2, 2025

performing activities for many years. Moreover, in 1935, he undertook the rearrangement of

two cello repertoires: "METHOD FOR VIOLONCELLO" and "DAVID POPPER

VIOLONCELLE ET PIANO." These two cello repertoires have become essential learning

resources for Chinese cello students at that time and have provided crucial support for the

further development of cello education in China.

2.2.2 The Performance and Education from 1949 to Now in China

Following the establishment of New China, Chinese cello students have been offered a greater

number of opportunities to study abroad. For example, not only Chinese cello students trained

by Russian cellists have been able to travel to Moscow and Hungary for further study on

government-sponsored overseas education, but also some of the cellists who are members of

the China Youth Art Troupe have traveled with the troupe to many countries, spending a year

engaged in performances and attending many well-known operas (Bingbing & Pattananon,

2024; Gackle & Fung, 2009).

With the successive establishment of music conservatories across China and the gradual

departure of foreign cellists who had been teaching in China, some Chinese cellists who had

studied abroad and outstanding local cellists who had received coaching from foreign cellists

began to teach at music conservatories across China (Ho, 2021). Notable examples include Lin

Yingrong, Wang Liansan, and Song Tao. These cellists not only excelled professionally but

also edited and composed a significant number of cello practice scores while cultivating

numerous notable cellists and educators (Ho & Law, 2012).

Their contributions have had a significant and far-reaching influence on the development of

the cello in China since the founding of the People's Republic of China. They have established

a strong foundation for the continuation and evolution of Chinese cello art.

Nowadays, the cello, as an imported Western instrument, is developing rapidly in China. There

are many cellists who are famous all over the world, such as Wang Jian, Qin Liwei, Ma Wen,

and so on (Ming, 2017; Wu, 2017). More and more cello competitions, practical grade exams,

cello summer camps, and international master classes are also popular in China.

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1119

Vol. 65. No. 2, 2025

In addition, contemporary Chinese cellists are also researching the combination of traditional Chinese instruments with the cello, such as playing the same notes on different strings and adding slow glissandos in the shifts to imitate the sound of the Erhu, or using the vibrato and glissandos of the left hand and the pizzicato of the right hand to imitate the sound of the Guqin, or the cello imitates the sound of the Morin Khuur by playing different ornamentation and glissando (Lao, 2025). This combination of East and West breaks the cello's traditional performance method, which not only gives the cello more potential for playing styles but also makes the cello sound more expressive (Zhou, 2018).

Table 2: Timeline of Cello Development and Integration in China (1610–2025)

Year /	Milestone Event	Key Figures / Institutions	
Period			
~1610	Western missionaries introduce string	Matteo Ricci, Ferdinand	
	instruments to Chinese court	Verbiest	
1885	Sir Robert Hart establishes formal cello	Sir Robert Hart	
	training for Chinese students		
1925	Cello becomes part of music conservatories'	Glazunov School (Harbin),	
	formal curriculum	Peking National Univ.	
1930s-	Russian diaspora brings cello to Harbin and	Igor Shevtzoff, Aleksandr	
1940s	Shanghai stages	Valerianovich	
1949	Chinese cellists begin gaining independence	Situ Youwen, Chongzhi Zhu	
	in ensembles		
1950s-	Conservatories expand; local cellists rise	Song Tao, Wang Liansan	
1980s			
1990s-	Cross-cultural compositions and	Tan Dun, Yo-Yo Ma, Wang Jian	
Present	experimental cello use increase		
2020s	Integration with traditional Chinese styles	National orchestras and fusion	
	like Guqin, Erhu, Morin Khuur	projects	



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Vol. 65. No. 2, 2025

The Morin Khuur: Origins and Evolution

The Morin Khuur, known as Mo-rin hoor or horse-head fiddle, is Mongolia's most significant

and symbolic musical instrument. The origins of the Morin Khuur can be traced back to the

twelfth century before the birth of Genghis Khan (1162-1227). Some scholars believe that the

Morin Khuur evolved from the Igil (also known as the Igil Khuur, Xi Qin, or Haegeum), a

bowed string instrument popular among the Mongolian Tatars.

According to the Secret History of the Mongols, written in 1240, the Morin Khuur played an

important role in the daily life of the Mongols and all kinds of ceremonies, and its music style

was ancient and simple; after 1260, the Morin Khuur, and other traditional instruments of the

Mongols, gradually matured into a period of booming development. From the Secret History

of the Mongols of 1240, the LvlvZhengyi of 1741, to the Draft History of Qing, which was

roughly finalized in 1927, there are records of the Morin Khuur, reflecting its long history of

circulation in Mongolia and China.

In 1947, with the establishment of the Inner Mongolia Autonomous Region, the Morin Khuur

began a new period of development and transformation. After the establishment of New China,

especially since the reform and Opening-up in the 1970s to 1990s, the Morin Khuur began to

undergo globalization and gradually entered the vision of Western music communication.

Entering the 21st century, the Morin Khuur, an instrument that was initially performed mainly

as a solo instrument, gradually evolved into new forms of performance such as the Morin

Khuur Orchestra to adapt to the development trend of global music, opening up a more

diversified path of internationalization and spreading.

In contrast to other Mongolian musical instruments, the Morin Khuur has achieved a unique

position in the hearts and minds of the Mongolian people. It is a fundamental element of

traditional Mongolian festivals, celebrations, weddings, and other special events. If no Morin

Khuur was involved, the festival or celebration would not be considered complete. The Morin

Khuur, as well as Genghis Khan, has become an iconic symbol of Mongolia.

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1121

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Vol. 65. No. 2, 2025

Historical Background of the Morin Khuur

A long time ago, a young shepherd named Su He lived with his grandmother on the Chahar

grasslands, making a living by herding animals. One day, Su He found an abandoned white

horse and brought it home to care for. Under his careful attention, the white horse became

strong and beautiful, and a deep bond developed between them.

News of a horse race spread across the grasslands, with the prize being the marriage to the

king's daughter. Encouraged by his friends, Su took his beloved white horse to the race and

won. However, the king, unwilling to honor his promise due to Su He's poverty, tried to take

the horse. Su He fought hard but was beaten, and left for death, and the king took the horse.

At a banquet, the white horse escaped and returned to Su He, only to be shot and killed by an

arrow. The white horse died in Su He's arms, and Su He was devastated. In a dream, the white

horse told Su He to make a fiddle from its bones, tendons, and tail so that it would accompany

him forever. After waking up from the dream, Su He crafted the first horsehead fiddle.

When the horsehead fiddle was played, Su He and the herders felt the presence of the white

horse and the vastness of the grasslands. They found solace in the sound of the fiddle, forgetting

their fatigue. This marks the origin of the horse-head fiddle, a precious symbol of the grasslands.

How the Morin Khuur is Made and Its Sound Characteristics in Inner Mongolian Music

This bowed instrument, which has two strings and is played between the legs, is identified as

a "square cello," even though its shape is better described as a trapezoid rather than a square.

The bow hair and strings of the Morin Khuur are created from the tail or thick mane of a

Mongolian horse.

The scroll of the Morin Khuur is shaped like a horse's head in various forms, and there are two

ways of making it: one is to carve it out directly on the upper end of the neck, and the other is

to stick it on the neck after carving it out. The pegs are generally made of boxwood or wood

from the Morin Khuur's neck. The neck is semi-cylindrical with a flat front and a rounded back,

and the front side is the fingerboard for pressing the strings.

The traditional Morin Khuur is shaped by the specificities of the grassland environment, with

1122

material choices limited to birch and maple, which are commonly found in the grassland. There

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Vol. 65. No. 2, 2025

is no fixed requirement for the materials used.

The two sides of the Morin Khuur are typically made with horses, cows, or sheepskin, and the

paintings on the skin are usually ethnic patterns. An alternative method to make the case by

cover the front side with leather and the back side with thin wooden boards. The center of the

leather is placed within the wooden bridge. In contrast to the strings of Western instruments,

the two strings of the Morin Khuur are made from horse tails. The inner strings are composed

of approximately 40 long horse tails, while the outer strings are made of about 60 long horse

tails. Both ends are fastened with thread and bound between pegs and endpin.

The Physical Development of the Morin Khuur in Modern Times

The Evolution of the Morin Khuur's Materials

Duan Tingjun serves as the vice president of the Chinese Morin Khuur Society. In September

2022, he was awarded the designation of "Top Ten Innovators in Chinese National Musical

Instrument Reform" for the preceding year. He divides the development and reform of the

morin khuur into three stages. The initial period was from the Yuan Dynasty to the early stages

of the founding of the People's Republic of China. During this time, the instruments were

designed and produced by individual folk artists, with no official manufacturers or products in

existence. The second stage began with the founding of the People's Republic of China and

continued until 1983. During this period, some musical instrument factories in northern China

and the innovators of the Morin Khuur, such as Zhang Chunhua and Sangdureng, were engaged

in efforts to modernize the instrument. The third stage was the period following 1983, during

which innovators such as Qi Bulag and Duan Tingjun himself contributed to the evolution of

the Morin Khuur.

Following the establishment of New China, the production of the Morin Khuur experienced a

period of further development. The earliest innovation of the Morin Khuur was developed in

1953 by Sangdureng, the Morin Khuur performer of Inner Mongolia Performing Art's Troupe

Morin Khuur, and the Instrument Factory owner, Zhang Chunhua, under the support of the

Beijing Institute of the Arts. Following a performance by Chi Bulag with the Beijing Symphony

1123

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Vol. 65. No. 2, 2025

Orchestra in 1983, he identified several shortcomings of the traditional Morin Khuur in his

performance. Therefore, he collaborated with instrument maker and factory director Duan

Tingjun to complete the unfinished Morin Khuur innovation work of Sangdureng and Zhang

Chunhua.

The modified Morin Khuur is made of hardwoods, including rosewood and mahogany, which

are used for the Morin Khuur's body, scroll, and neck. The top surface of the Morin Khuur's

body is made of wood and covered with a python skin layer. This not only enhances the volume

of the Morin Khuur but also extends the pitch range from two to three octaves. Additionally, it

retains the Morin Khuur's characteristic thick and clear timbre. Some Morin Khuur retained the

horsetail strings, while others adopted the use of nylon strings, which were inspired by Western

instruments.

Development of the Grand Morin Khuur and Bass Morin Khuur

At the end of 1955, the wood-fronted Bass Horsehead Instrument designed by Zhang Zirui and

produced by the Beijing National Instrument Factory was produced. This first generation of

bass Morin Khuur had a trapezoidal case, with the front and back sides covered with Paulownia

boards, and the bow was played outside the strings and was put into use by the China

Broadcasting Traditional Orchestra in 1956.

In 1962, the music innovation group of the China Broadcasting Traditional Orchestra further

improved the four-stringed Morin Khuur based on the four-stringed Morin Khuur. However,

due to the lack of consideration for the design and making of the traditional Morin Khuur, the

design of the decoration was too close to the cello and double bass, which led to the failure of

the revolution of this musical instrument.

In 1980, the China Broadcasting Traditional Orchestra's music innovation team started the

innovation of the bass Morin Khuur Chen once again. The final design of the Morin Khuur's

body basically follows the shape of the traditional Morin Khuur, with the string-playing point

slightly curved to the inside, and the corners of the Morin Khuur modified into small rounded

1124

corners, which not only keeps the shape of the Morin Khuur but also solves the inconvenient

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problem of transporting the bow. The surface of the Morin Khuur is decorated with ethnic patterns, with a bright and clear timbre and more resonance. After that, Beijing National Musical Instrument Factory selected experienced instrument makers to participate in the production and finally made four grand Morin Khuurs and two bass Morin Khuurs.

The length of the Grand Morin Khuur is 125 centimeters, the strings are C, G, d, and a, and the range is C-c2, with a three-octave range, which is similar to the cello; the length of the Bass Morin Khuur is 182 centimeters, and the strings are E1, A1, D, and G, and the range is E1-a, with a two-and-a-half octave range, which is similar to the double bass. The sound effect of the Bass Morin Khuur is better than that of the Grand Morin Khuur, with clear and pure articulation, strong penetrating power, soft and broad timbre, balanced sound of the four strings, and a large range of changing strengths.

Table 3: Materials and Structural Evolution of the Morin Khuur

Historical Phase Key Innovations and Materials		Representative	
		Innovators	
Pre-1949	Folk-crafted, wood frame, horsetail	Traditional herdsmen	
	strings, leather-covered body		
1953–1983	Factory models, trapezoid body, paulownia	Sangdureng, Zhang	
	face, glued scroll	Chunhua	
Post-1983	Mahogany/rosewood body, python-skin	Duan Tingjun, Qi Bulag	
Modernization	top, nylon strings introduced		
2000s-Present	Symphonic-grade Morin Khuurs, Morin	Inner Mongolia National	
	Khuur orchestras	Ensemble	
Bass & Grand	Bass tuned E1-G; Grand tuned C-a;	Beijing National	
Variants extended range		Instrument Factory	



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Vol. 65. No. 2, 2025

The Playing Techniques of the Morin Khuur in Modern Times

Sangduren and Chi Bulag advanced the material and sound of the Morin Khuur while also

maintaining an open mind about the Morin Khuur's compositions in terms of performance

methods and pedagogy. Additionally, they incorporated Western instrumental performance and

compositional techniques in Morin Khuur practice and performance.

As early as the 1950s, Sangduren had started to adopt certain performance and compositional

techniques from Western instruments and compositions. In the composition of Morin Khuur's

scores, he incorporated elements such as sixteenth-note rhythmic sections, dynamic

terminology, emotional musical descriptions, and variations in speed and tempo. In terms of

structure, Sangduren applied the Western composition technique of the ABA form (a long-

short-long structure) to Morin Khuur compositions, incorporating scales, arpeggios, and double

stops in the third, as well as cadences in the end. For example, "Ordos Spring," a piece of Morin

Khuur that is distinctly Mongolian in style, was composed by Sangduren and is one of the most

representative pieces that includes all the techniques above.

Chi Bulag proceeded with the continuation of Sangduren's innovations in the performance of

the Morin Khuur. His goal was to make the morin khuur as flexible in its use of bowing and

soloing instruments as the violin. In the 1970s, Chi Bulag began to develop a new approach to

the pedagogy of the Morin Khuur. Chi Bulag said, "I incorporated elements from the violin,

erhu, sihu, cello, and whatever else I needed. As a result, the Morin Khuur ended up the way it

did. If it hadn't taken this shape, it would still resemble the older form of the Morin Khuur, and

it would never have survived on the concert stage.

Chi Bulag emulated Liu Tianhua's improvements in erhu pedagogy, utilizing violin techniques,

and also developed further innovations in the Morin Khuur. Chi Bulag wrote a series of

fingerings and bowings in different keys, as well as large-scale solo pieces marked with unique

Chinese musical notation. His Morin Khuur method was published in 1974, and he established

the "Conservatory-style Morin Khuur" system.

Chi Bulag has also improved the playing position of the Morin Khuur by imitating the cello;

1126

the "Ricochet" and "Martelé" (Hammered) bow techniques from the violin, combined with

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Vol. 65. No. 2, 2025

some simple, rhythmic combinations, make Morin Khuur's repertoire even more creative and distinctive. Chi Bulag's innovative approaches to Morin Khuur's performance methods and pedagogy have given Morin Khuur's solo works an important place in China and have given Morin Khuur's soloists attributes.

Table 4: Key Compositional Techniques Adopted in Morin Khuur Modernization

Technique/Element	Traditional Usage	Modern Integration	Notable Works /
		(Western Influence)	Examples
Form	Improvised,	ABA form, thematic	Ordos Spring
	episodic folk	development	(Sangduren)
	structures		
Rhythm	Pulse-based,	Written tempo	Pedagogical solo
	flexible	markings, subdivided	studies
		rhythms	
Ornamentation	Vibrato, glissandi,	Double stops,	Gada Meilin cello
	drone intervals	harmonics, Western	adaptation
		phrasing	
Notation	Oral, limited	Western staff notation	Chi Bulag's Morin
	tablature	with dynamics and	Khuur Method
		tempo	
Harmonics &	Traditional	Expanded harmonic	Conservatory
Timbre	overtones, tonal	registers via Western	practice scores
	coloring	tools	
Instrumentation	Solo, ritual, folk	Soloist, chamber player,	Morin Khuur
Role	ensemble	orchestral seat	Orchestra repertoire



Comparative Analysis of the Morin Khuur and the Cello

Tuning and Posture

On the cello, the four strings are C2, G2, D3, and A3, and the intervals between each string are five degrees; but on the Morin Khuur, the inner and outer strings are c^1 and g. The intervals between the two strings are four degrees (with artificial harmonic), from c^1 to c^3 , and occasionally to g^3 .

Except for the posture of the performer's feet and the angle at which the instrument is held, the holding posture of the cello is similar to that of the Morin Khuur(Example 1). The cello is placed between the knees with the legs naturally apart and the cello tilted slightly to the left, leaning against the chest. The Morin Khuur is held with the lower right corner of the Morin Khuur's body against the inside of the knee of the right leg, and the lower left corner of the Morin Khuur's body against the inside of the left calf. The Morin Khuur is slightly away from the body and more towards the left than the Cello, and the feet are placed in a T-shaped position.

Example 1: Posture of Morin Khuur



Left-Hand Technique

In the cello, the fundamental shape of the left hand is relatively simple, with the fingertips of the left hand pressing the strings down toward the fingerboard. On the Morin Khuur, however,





the fundamental shape of the left hand is more complex.

When playing the Morin Khuur, the strings should be pushed to the right by the roots of the nails of the index and middle fingers, the ring and little fingers should be pushed to the right by the tips of the fingers, and the tip of the little finger also frequently passes under the outer string and pushes the inner string to the right. Both the cello and the Morin Khuur use the fingertips to press the strings for higher notes (Example 2).

Example 2: Left-Hand Technique of Morin Khuur



Right Hand

On the cello, the right hand is held with the palm facing down, the palm and fingers naturally curved in a C-shape, the thumb resting in the corner of the bow under the stick and against the frog of the bow, and the other four fingers resting on the stick.

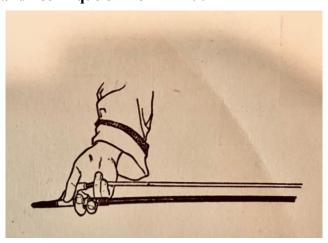
When playing the Morin Khuur, the bow-holding position of the right hand is entirely different from that of the cello. The palm of the right-hand faces up, with the ring and little fingers passing under the stick and resting on the bow hair to control how much of the bow hair touches the strings. The middle and index fingers naturally fall onto the stick, while the thumb and the





area between the thumb and index finger naturally clamp the frog of the bow. It is important to note that the bow pressure and finger pressure on the strings should be the same (Example 3).

Example 3: Right-Hand Technique of Morin Khuur



Shifting

The cello and the Morin Khuur have very similar shifting and playing styles, with only slight differences. The cello can play both fast virtuoso repertoire and slow lyrical repertoire. However, regardless of the style or tempo of the piece, the cello's shifting is usually as clean and precise as possible, avoiding excessive glissando or noise unless indicated by the composer in the score.

The Morin Khuur demonstrates slightly different characteristics in this aspect. With the development of Morin Khuur's pedagogy and the improvement of its manufacturing process, it has gradually become capable of playing virtuosic and fast-tempo repertoire. However, since the Morin Khuur has a slower sound delivery than the cello, it is more suitable for lyrical music. In the performance of the Morin Khuur, shifting is usually as clean and precise as the cello, but often combined with varying speeds of glissando or trill with the subjective emotion of the performer, it also incorporates the distinctive Mongolian musical style to show the unique charm of the Morin Khuur at the same time.

Vibrato

The Morin Khuur and cello vibrato are basically the same in technical principle; both require the performer to keep the arm relaxed and to vibrate the strings with relaxed rolling fingers





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Vol. 65. No. 2, 2025

under the guarantee of intonation. The main difference between them is the way the strings are

pressed: on the Morin Khuur, the fingers mainly press the strings with the roots of the

fingernails, while on the Cello, they press the strings directly with the fingertips. In addition,

the amplitude and speed of the vibrato should be adjusted according to the style of the repertoire

and the performer's emotional expression to achieve the best aural and artistic effect.

Double stop

On the cello, the most basic double-stop intervals are thirds (including both major and minor

thirds), sixths (including both major and minor sixths), and pure octaves. In contemporary cello

repertoire, intervals such as seconds (including both major and minor seconds), perfect fourths,

perfect fifths, augmented intervals, and diminished intervals also appear.

In the Morin Khuur, the intervals commonly used for double-stops are perfect fourths. The

major third, minor third, and pure fifth are common but are used less frequently than the pure

fourth². The Morin Khuur can also play octave double stops, but this technique is less common.

Harmonics

Harmonics are widely used in Cello playing. The principle of sound production is relatively

simple: the player simply touches the strings with the fingers of the left hand, without applying

pressure, to produce harmonics.

In Morin Khuur, the classification of harmonics is much more complex and is generally divided

into four categories: natural harmonics, major and minor third, fourth and fifth harmonics,

artificial harmonics, and traditional harmonics.

Natural harmonics are produced by the friction of the bow hairs against the string at specific

points (e.g., 1/2, 1/3, 1/4, and 1/5 of the string length). The sound mechanism is basically the

same as that of cello harmonics.

The major and minor third, perfect fourth, and perfect fifth harmonics involve pressing down

on the string with one finger while the other finger gently touches but does not press down,

thus producing both the fundamental note and the harmonics at the same time.

OPEN ACCESS

1131

Artificial harmonics are produced by coordinating both hands: the bow-playing hand (right hand) applies less pressure, while the fingers of the left hand apply more pressure to the strings.

This technique produces a pitch that is one octave higher than the actual stopped pitch and requires precise control of the pressure by both hands.

Traditional overtones combine natural harmonics, artificial harmonics, and a mixture of double and single notes. This overtone technique is usually played in the second position and uses mainly the index and middle fingers.

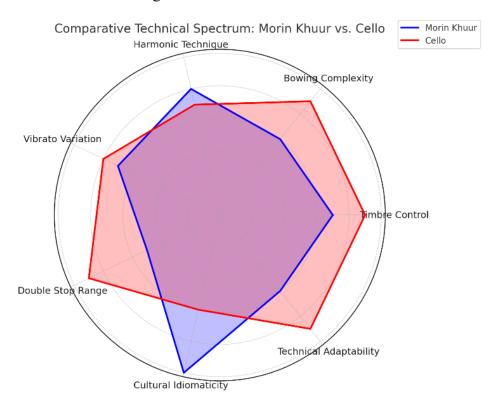


Figure 2. Comparative Technical Spectrum of Morin Khuur and Cello.

This radar chart visualizes the comparative performance capabilities of the Morin Khuur and the Cello across seven key technical dimensions: timbre control, bowing complexity, harmonic technique, vibrato variation, double stop range, cultural idiomaticity, and technical adaptability. The cello (red) demonstrates high versatility in bowing and harmonic range, while the Morin Khuur (blue) excels in cultural idiomaticity and specialized timbre control. Overlapping areas highlight shared technical potentials, while distinct peaks reveal unique strengths of each instrument.



Table 5: Comparative Overview of Morin Khuur and Cello Playing Techniques

Technique	Morin Khuur	Cello	Key Differences
Aspect			
Instrument	Two strings: c1-g,	Four strings: C2–G2–	Number and tuning
Tuning	tuned a 4th apart	D3–A3, tuned in 5ths	interval of strings
Left-Hand	Nail root pressure,	Fingertips press directly	Pressure style and
Technique	varied finger roles	on fingerboard	direction
Right-Hand	Palm up, ring/little	Palm down, thumb at	Reverse grip with
Bow Grip	fingers under bow	frog, curved hand shape	different tension
	hair		control
Vibrato	With nail root, subtle	With fingertips, deeper	Contact method and
	wave	oscillation	vibrato shape
Shifting	Often expressive with	Usually clean and	Aesthetic intent
	glissandi	minimal unless	behind movement
		stylistically used	
Double Stops	Emphasizes perfect	Wide interval use: 3rds,	Preference for modal
	4ths and 5ths	6ths, octaves	resonance
Harmonics	Natural, artificial,	Mostly natural and	Cultural layering of
	traditional overtones	artificial harmonics	harmonic types
Bow Pressure	Controlled by finger	Controlled via arm	Contact vector and
Technique	hair contact from	weight and hand	leverage system
	below	flexibility	
Timbre	Horsehair, skin, open-	Wood body, metallic	Instrumental material
Modification	body vibration	strings, pressure-	variation
		dependent tone	



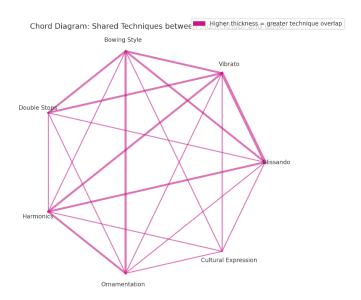


Figure 3. Chord diagram mapping the interconnection and degree of overlap among performance techniques between the Morin Khuur and the Cello.

Each node represents a core technique (e.g., glissando, vibrato, ornamentation), while the arc thickness between nodes reflects the intensity of cross-instrumental borrowing or adaptation. Strong links—such as between glissando and vibrato—indicate high technical interrelation in intercultural performance.

Discussion

This comparative study offers a critical insight into how the expressive potential of the Western cello can be expanded through the adoption of techniques traditionally associated with the Mongolian morin khuur. The results reveal not only the technical feasibility of such a transposition but also its broader implications for cross-cultural performance practice, pedagogy, and musical identity within the framework of modern Chinese music history (Fulin & Panyanan, 2024).

One of the study's central findings is the cello's remarkable adaptability across key performance dimensions, including glissando, vibrato, and bowing style. These techniques, when adapted from the morin khuur, do not merely augment the cello's technical vocabulary but reconfigure its expressive palette in ways that resonate with Chinese ethnic musical aesthetics (Chudy, 2016). The radar chart and heat map provided in this study visually



corroborate that while the cello excels in harmonic complexity and structural range, it can be effectively calibrated to emulate the nuanced tonal gestures of the morin khuur, especially when interpreted with cultural sensitivity.

At the core of this technical exchange lies a deeper philosophical and artistic inquiry: Can one instrument authentically embody the sonic ethos of another without compromising either tradition? This study suggests that while perfect emulation is neither the goal nor the standard, meaningful cultural translation is achievable. The Sankey and chord diagrams show that glissando and vibrato have successfully traversed the idiomatic boundaries of their origins, while ornamentation and cultural expressivity remain areas where more interpretive work is required. In this sense, the cello acts not as a substitute for the morin khuur but as a mediator in the evolving dialogue between Western and Eastern musical systems.

Historically, the cello's trajectory in China—from its introduction by missionaries and Russian émigrés to its institutionalization in conservatories—has laid the groundwork for its current role in ethnic musical fusion. This historical layering is not merely contextual but constitutive of the cello's modern Chinese identity. As illustrated in the timeline and stream graph, the cello has undergone a transformation not only in repertoire but in symbolic meaning—shifting from foreign import to a flexible participant in Chinese musical storytelling (Xu, 2024).

Nonetheless, this cultural permeability is not without its tensions. The replication of morin khuur's timbral identity through cello requires not just technical substitution but an embodied understanding of Mongolian musical narrative, phrasing, and spiritual intent. The distinction between mere technical adoption and true stylistic assimilation underscores the performer's responsibility as an intercultural interpreter. This aligns with recent scholarship emphasizing that performance techniques should not be divorced from their cultural and philosophical roots. Furthermore, this study raises pedagogical questions: How might cello instruction evolve to include non-Western expressive paradigms? What training methods can better prepare performers for the aesthetic demands of intercultural repertoire? These are critical inquiries for conservatories and composers seeking to bridge Western instrumental training with non-Western musical traditions.



The cello's capacity to absorb and recontextualize the morin khuur's techniques demonstrates not only technical innovation but a profound opportunity for musical diplomacy (Zhou, 2018). By engaging in such trans-cultural performance practices, musicians challenge monolithic narratives of cultural purity and instead foster a dynamic, pluralistic vision of musical modernity—one in which identity is not preserved by isolation but enriched through interaction.

Conclusion

This study has demonstrated that the cello, with its broad expressive range and technical flexibility, possesses considerable potential to simulate the nuanced sonorities of the morin khuur. By analyzing historical records, performance techniques, and experimental practice, the research confirms the cello's plasticity as a medium for intercultural musical expression, especially in the context of the development of traditional ethnic music in China.

This study goes beyond performance techniques. It explores how Western instruments, such as the cello, can be used to perform traditional music from Chinese minority cultures. Rather than replacing traditional instruments, the cello can reflect its sound and spirit in new musical forms. These findings offer valuable insights for both performers and composers, demonstrating how Western string instruments can be used to interpret traditional Chinese music and support creative exchange in modern musical practice.

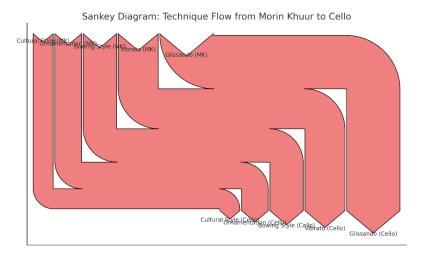


Figure 4. Sankey diagram representing the transfer of core performance techniques from Morin Khuur (left side) to Cello (right side).





The width of each flow line corresponds to the intensity of adaptation, with glissando and vibrato being the most strongly transferred techniques. This diagram visualizes how traditional Mongolian playing styles influence modern cello interpretation in cross-cultural contexts.

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