THE INTERPRETATION OF THE HUQIN AS RECORDED IN THE LAUFER COLLECTION

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Abstract
As a musical instrument, the long-necked stringed *erhu*/*huqin* has an extensive history and a wide international audience. However, as a musical form, many scholars consider *erhu*/*huqin* to be foundationally Chinese, its history beginning at the start of China's modern period. Scholars of Chinese music history widely credit Liu Tianhua as the founder of Chinese *erhu*/*huqin* music. His 1915 masterpiece, *The Chant of the Disease*, is touted as China's first *erhu*/*huqin* solo. But, the 1901 recording *Shanghai Huqin* in the Berthold Laufer Collection disproves this popular notion. This newly discovered musicwork is not only the earliest recording of Chinese instrumental music, but also the first *erhu*/*huqin* solo currently known. It represents considerable technical and artistic levels in many respects, especially left/right-hand skills, tonality, and performative styles. This piece of music will change many of our inherent understandings of traditional *erhu*/*huqin* music, usually considered to be simple in structure, featuring rough performance technique, and evidencing a narrow range of voicing. Historical and performance research of this work will aid re-examination of traditional Chinese music's development during and after the 20th century.

Keywords
Shanghai, Huqin, Liu Tianhua, Hua Yanjun, Edison, Wax phonograph, Berthold Laufer,

A TRIP HOME

On 25 April, 2019, Shanghai is sunny after the rain. A rare historical recording from the other side of the Pacific Ocean, caused strong ripples on its journey home, 118 years after it left its homeland.

10 o'clock in the morning, "The Hundred-Year Old Laufer China Recordings and Music Records under Reconstruction"—Round Table was held on time at Shanghai Conservatory of Music. Musicologists from Indiana University's Audiovisual Archive and the Shanghai Conservatory of Music, and many senior Shanghai music experts gathered in the conference room of the Conservatory's Linhuai Building. Under the auspices of Xiao Mei, Director of the Asia-Europe Music Research Center, Alan Burdette, Director of the Audio Archives of Indiana University, and Wei Xiaoshi, the project leader of the Berthold Laufer Archives, gave a detailed account of the many stations this file experienced and inspired the scholars attending the round table.

Berthold Laufer (1874-1934) was a German-American anthropologist and historical geographer. He was known as one of the most prominent sinologists of his time for his knowledge of Chinese and another number of East Asian languages. In 1897, he was awarded his doctor philosophiae (PhD) in “Oriental Language” at Leipzig University. After he immigrated to the United States of America, he participated in the "Jacob Schiff Exploration Project of China" (1901 ~ 1904), starting with Beijing and Shanghai in 1901. He used a cylinder phonograph that was invented not long ago to collected about 400 cylinders with recordings. These historical recordings of the beginning of the last century, were widely recognized as the earliest recordings in China by the academic community. Laufer returned to China in 1908 and 1923, and his research achievements were included in a large collection of archaeological, historical, and ethnographic objects, most of which were collected in the Field Museum of Natural History in Chicago, where he later worked. The museum has become the center for Chinese collections of American museums. As one of the few western scholars, who could speak and write Chinese fluently, he has made the study of the Chinese language and culture becoming his life work.

In 2018, the Archives of Traditional Music at Indiana University officially launched The “first recordings in China” project, which aimed to digitally transfer and publish Laufer's wax cylinder recordings made between 1901 and 1902.The traditional music collection, which was transferred from the American Museum of Natural History to Indiana university in 1961, is now officially known as the Laufer Collection, where 104 photographs and 7,500 physical and field notes are assessed and detailed as part of it.

FIGURE 1: The mysterious dance of the five lamas. Source: Historical images from the Laufer collection.

Compared with the sporadic audio materials recorded in China at the same time, the Laufer Collection is a systematic record archive, which not only includes various types of music, but also has relatively complete supporting materials such as descriptive texts and graphics. In an integrated way, this special collection has preserved the oral art forms of more than ten kinds of music and many dialects existing in China at the beginning of the twentieth century. Among

them, the cylinders recorded in Shanghai in 1901 contain the music and drama of *Wu* folk songs, *Tanhuang* opera, *Qinqiang* opera, and other traditional genres, reminding people of the wonderful atmosphere of the Shanghai beach 100 years ago. However, one recording of *huqin* playing in these special collections, with its incredible "realistic" sound effect and unexpected performance, triggered the author's thoughts on this magical wax cylinder and the many historical, scientific, and cultural phenomena it can reveal.

INTERPRETATION OF THE SOUND

The historical music recordings of *huqin* in the first half of the 20th century left only a handful of compositions and their performances to listen to at later times. That included the *nanhu* solo music *The Chant of the Disease* recorded by the Odeon Company for Liu Tianhua in 1931, and the *erhu* solo music such as *The Moon Over a Fountain* played by Hua Yanjun, recorded by Yang Yiliu & Cao Anhe in 1950. The publication of this recording in the Laufer Collection not only pushes the recording history of the *huqin* as a musical instrument forward for several decades, but also may be the earliest recording of Chinese instrumental music in the history of human-made audio recordings.

On 18 July, 1877, Thomas Alva Edison (1847-1931) invented the phonograph, the "speaking machine" and a series of other great inventions that revolutionized the way people performed, recorded, and listened to music in the 20th century. In 1888, the ‘perfect phonograph’, which could record and replay sound, was launched on a four-inch long wax cylinder with a diameter of 2.125 inches. The phonograph could record sound for about two minutes. With the improvement of the recording technology and the increase of the diameter of the wax drum, the recording time was extended to 3 and 4 minutes by the end of the nineteenth century. The modified wax cylinder used by Laufer in Beijing and Shanghai from 1901 to 1902 is supposed to be this kind of wax cylinder.

The *huqin* performance in the ‘Laufer collection’ is recorded in Shanghai in 1901, and the recording time after digitalization is 3 minutes and 26 seconds. There is no other written record that can be referred to except the number scy2931, so the tentative title of the song is *Shanghai huqin*. When listening for the first time, the sound quality of this recording is amazing. The sound is clear, the frequency response is relatively wide, and the echo components and distortions are low. However, the pitch of the *huqin* is about two cents higher than that of the modern *erhu*. Comparing the similar works such as the recordings of Liu Tianhua and Hua Yanjun in 1931 and 1950, the sound quality of this recording is unexpectedly good. It is likely that a combination of the following factors contributed to this impressive performance.

First of all, although the phonograph is the first recording device for mass production of audio items in human history, the principles and the structure are very simple, but the sound quality is not weak. Around 1900, the sound quality of wax cylinder phonograph recordings was in fact better than recordings on discs or ‘records’ in the same period because the stylus used for the acoustically dimensioned groove hold a relatively constant speed. The wax cylinder quality and the fidelity of the performance is superior comparing to early records on disk using a similar principle. The flat record might change in sound quality when reading the inner circles, while the cylinder phonograph is more convenient and accurate to record the highest harmonics.

Secondly, as the engineer, Laufer was very professional in the operation of this talking machine. Regarding the physical recording in 1901, The volume level recorded by the phonograph depends on the distance of the sound pick-up. According to the results of the replay, Laufer did chose the right position, angle and distance when making this recording.

Crucially, researchers at the Indiana University sound archive showed professionalism in preserving this historically valuable collection of recordings. They used a professional Endpoint Audio Labs device to read and digitally transfer wax cylinders. The device has a laser-assisted adjustable shaft, which minimizes the vibration and noise of the wax cylinder through high-precision mechanical rotation, which can freely adjust to the rotation speed in order to adjust the pitch. Compared with traditional methods, such an audio digitization process does not damage the wax cylinder and can obtain good sound quality. In the process of digitalization, researchers did not completely filter the frictional noise present in the recording, but retained the precious 'raw state', realistically restored the live sound of this historical recording.

FIGURE 2: Wax cylinder replay and digitization equipment in the "endpoint audio lab" (photo by the author).

Regarding the pitch of the *huqin* recording can be said that because the speed of the phonograph at that time was between 120 and 160 rpm, and the driven machinery rotation accuracy was not very high, the possibility that the rotational speed at the time of recording was different from the rotational speed at the time of transmission can be quite large.

In addition to the amazing sound quality of the recording itself, the performance techniques and musical language of this music piece also changed many parts of our inherent understanding of the instrument.

THE LEGEND OF TWO-STRINGS

Huqin, which is also called *erxian* and *nahu*, *huhu*, *wengzi*, *erhu* (modern), might have been established on the basis of the Tang dynasty classification as a bowed string instrument type like the *gazheng* or *xiqin*. (Li Mingxiong, 1997: 18) In the early days, the so-called *huqin* was even included as one of the "instruments introduced into the central plains in northwest and northern minority regions, such as *Pipa*, *Five-string*, *Konghou"* (Chinese Music Dictionary, 1984: 159). In the long process of evolution after that, as a member of the family of bowed string instruments, the *huqin* has been widely used in many parts of China since the Song dynasty. Since the Ming and Qing dynasties, with the vigorous rise of local operas and *quyi*, the

huqin has been further subdivided into a variety of similar musical instruments, becoming an important accompaniment and ensemble instrument. But it is really appropriate to name the instrument *erhu*, which only happened later in modern times. During the late Qing dynasty, the Liu Jinzao compilation of literature of the Qing dynasty continued to mention it from the 51st year of *Qianlong* (1786) up to three years of *Xuantong* (1911) in "Ministry of All the Instruments". There, it was included around the time of the Ming and Qing dynasties. It was used for diverse instrumental music played for musical dramas in denominations such as "*banhu*, *three strings*, *banghu*, *erhu*, *four-stringed instrument played with a bow*..." (Liu Jinzao, 1912, vol. 194).

In the local people's eyes, the *erhu* was basically used as an accompanying instrument or ensemble instrument for the opera up to the time of the late Qing dynasty. Chen Zhenduo[1] had explicitly pointed out:

"Erhu is a kind of accompaniment instrument popular among the folk. Because Liu Tianhua saw this instrument playing an important role in folk music, therefore, he has carried on some bold innovation with creativity to it. That increased the *erhu's* status as a solo musical instrument." (Chen, 1997: 9).

Chen and Chen (2006) also called the instrument as being widely used in opera accompaniment such as huju opera, xiju, yueju opera, huai opera, yangju opera, huangmei opera, huandeng opera, flower drum opera, pingju, Peking opera, or kunqu opera.

In the twentieth century China and in the process of the development of *erhu* music, Zhou Shaomei, Liu Tianhua, Hua Yanjun, Sun Wenming and others, were considered as the representative figures of different stages, and they inherited the features of the open-minded *huqin* culture. They integrated different elements such as court and popular culture from east and west, which greatly enriched the treasured repertoire of *erhu* music. *Erhu* in the status of Chinese national instrumental music families, not only had already become a part of professional music education, but also had become one of the most important national orchestra melody instruments. Up to now, most Chinese seem to leave such a fixed "impression" on this instrument: the *erhu* music before Liu Tianhua was basically used as an accompanying instrument for folk opera, the playing skills were rather simple. The lack of technique of changing positions led to a narrow range of tones, and even the fixed tune was not very reliable. For this reason, some authors in the Chinese music history textbooks call Liu Tianhua "the founder of *erhu* music".

Then in Shanghai, 118 years before today: who was that player who left this legendary recording for Laufer? What was the level of instrument performance before *erhu* music as independent type was established? Was the *huqin* only used for ensemble and accompaniment as previously recorded? What is the connection between the creation of "folk artists" and *erhu* artists such as Liu Tianhua and Hua Yanjun, and even the new music in China in the 20th century? With such doubt, the author listened to this historical recording again in its entirety, taking d^1-a^1 as the reference pitch, to notate the recording. Through comprehensive analysis of acoustics and the music score, the author made the following basic observations on "the earliest recording of *huqin* music currently available in China".

1. The performer's use of the instrument *huqin* has reached a very high level, with a wide range of tones, excellent intonation, rich timbre and proficient techniques. The maturity of the *erhu* instrument playing is surprising, both in terms of its composition and performance (the two features were probably one and the same at that time). The range of the whole piece reaches 12

[1] Chinese erhu performer. He was a student of Liu Tianhua.

tone steps, which is a considerable width for the local stringed instruments of that time. No doubt, this can only be achieved through the "changing positions" of the *huqin* players.[2] The rich timbre reflected in the music is attributed to the soloists' diversified playing skills, including the sliding, trilling of the left hand, the splitting, joining and tremolo of the right hand, and other skills. All these string performance techniques with a rich expressive strength are well used in this piece. In addition, there are quite a few large jumps in the work, especially the 12-tone jump across the two ends of the sound range, which creates a sense of open space and leaves a deep impression on listeners. The performer's control of intonation is also quite accurate, which is particularly valuable for a stringed instrument like *huqin*, on which it is quite difficult to control the intonation. To sum up, this piece of music has reached a high level in performance and helps refresh the inherent understanding of *erhu* music.

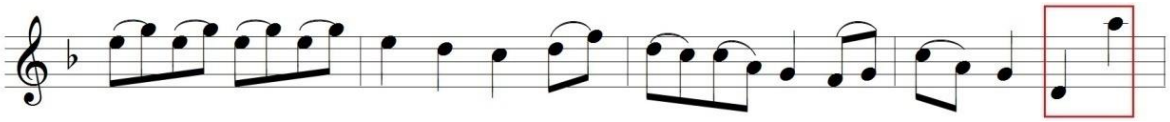

FIGURE 3: 12-tone jump interval (notation by the author).

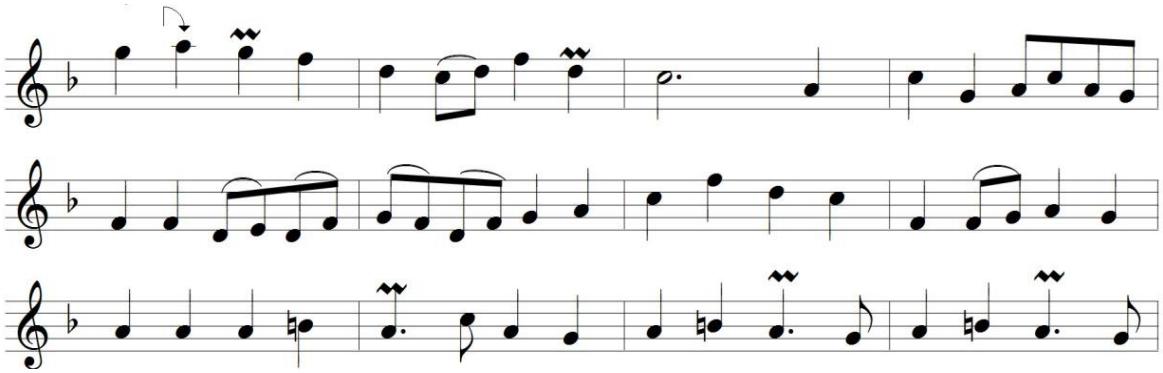

FIGURE 4: Changeable left hand fingering and the right hand bowing (notation by the author).

2. This recording is neither an improvisational performance nor an opera accompaniment. It could be recognizing as an exquisitely conceived *huqin* solo. The basis for this judgment is that the theme of music is prominent, and the *huqin* plays melodic lines with obvious undulating lines and expressive features throughout. The whole melodic line is quite complete, and the paragraphs and phrases of the music have a distinct structure, with strong instrumental characteristics. The wide range of the work, the large intervals that often appear, is far from the instrumental use of accompaniment or ensemble playing. In traditional Chinese folk instrumental music, there is no lack of improvisation, but this *Shanghai huqin* is clearly not improvisation. From the recording, it can be heard that the performer of this music is very confident and leisurely in the whole continuous process of the music. There is no hesitation in the performance process, but it appears to be 'perfect in mind' after a long time of practice. Also, through analyzing the recording, the music conception is quite delicate, both for the conversion between the different modes of the ancient Chinese music system, which also has a variety of skilled melodic development techniques. The musician plays in different tempi, slow and fast. The observed speed can be divided into three sections. Obviously, this is a deliberate solo work of a popular instrumental music.

[2] Traditionally *huqin* players use only one position when playing as the accompaniment of opera and popular songs. If they encounter one tone above or below this range, the performer may play the notes in a way that turns up or down within the octave in order to keep the range within this octave.

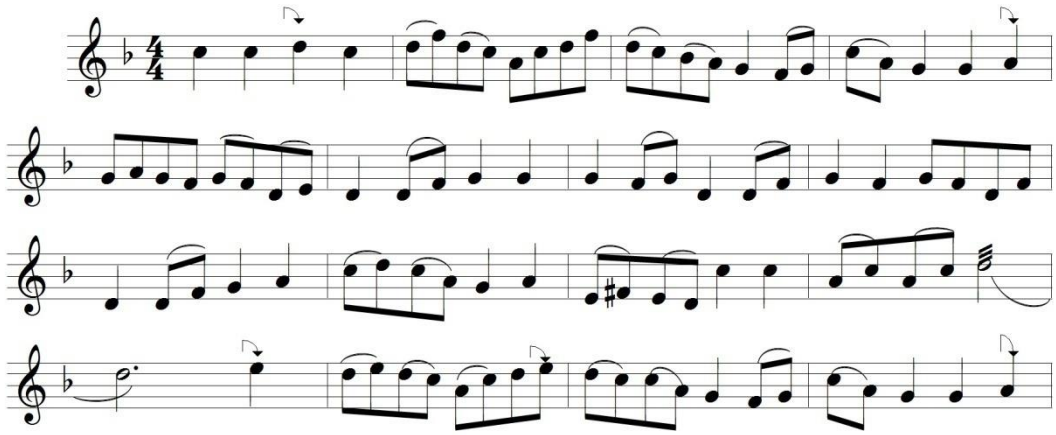

FIGURE 5: The four lines of the music piece (notation by the author).

3. The creative conception of the work follows the various development modes of a normative traditional music in China. It was basically not affected by Western music theory. In the development of traditional Chinese instrumental music, there are many common principles, such as repetition, serialization, circulation, variation and development, which have been widely spread among the people for a long time.[3]

One of the distinctive features of the melodic development of this piece is the continuous support of the main melody. The basic method of 'overlapping head and tail' between musical phrases is called *fish biting tail* among folk musicians. Although the way of melodic progressions is mainly driving forward, it often uses big jumps of six, seven and even twelve tones in important parts. This combination of progression and jump is very impressive. In the first section of the music, the melodic development principle of repetition and variation is mostly adopted. In the three basically similar sections of 12+12+16 bars, the melody development techniques of 'adding flowers', 'changing the head', 'fish biting the tail' are also comprehensively used, so as to maintain the unified style of the whole music without blurring color changes.

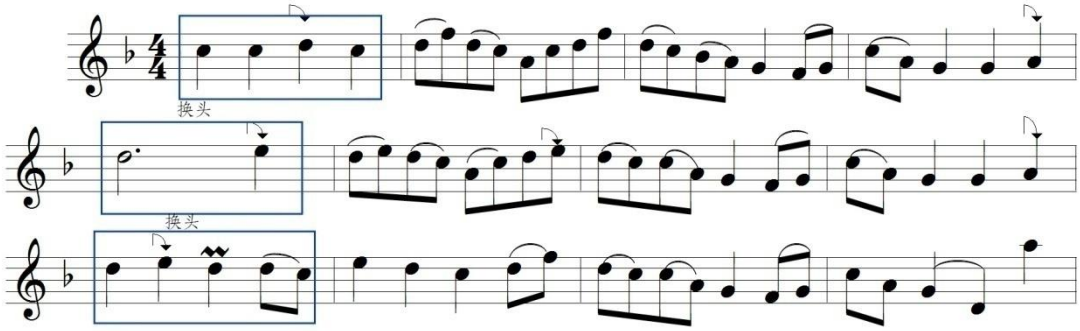

FIGURE 6: Music section 'change head' (notation by the author).

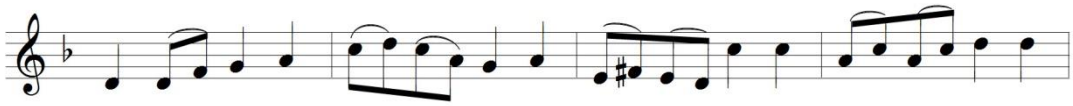

FIGURE 7: Tonal changes in the music (notation by the author).

The varied use of mode and tonality in the music is also impressive. Although the whole music takes on the *Yu* mode as the main key, there are various tonal scales in succession, such as *Zhi*

[3] 李民雄著《民族器乐概论》，上海音乐出版社 1997 年 12 月出版，第 88 页。

mode, *Qing music scale* and *elegant music scale*, which makes the tone and color of the whole music varied. In particular, the skill to 'change *gong* for *jue*', which is often used in the music, takes the *Biangong* sound of the original key (F gong) as the *jue* tones in the new key (C gong of the elegant music scale). This 'soft shift' approach, brings fresh and elegant colors to the music.

The overall structure of the music reflects the layout principle of normative Chinese instrumental music. The whole piece is composed of three sections whose speed is slow but then faster, and whose emotions are constantly exhibited. There are no obvious pauses between the sections, and the rhythmic and metric patterns marking a prominent personality becomes the main basis for dividing sections. In the first section, the rhythm is relatively balanced and symmetrical, which gives people the sense of 'even and steady'. The second paragraph not only speeds up gradually, but also has new elements in the use of rhythm. The frequent syncopation of rhythm and dotted tones make the music atmosphere of this section more turbulent. In the last section, the solo *huqin* reached a climax in *Ji Ji Feng*. So, the whole piece ends with a stirring melody and a sonorous rhythm. The special use of tones and rhythms in this section, seem to be a reminiscent of the last section of Hua Yanjun's *Listen to Pine Trees*.

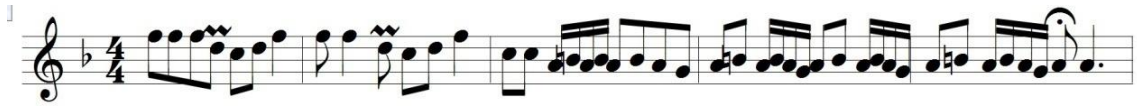

FIGURE 8: 'Urgent Board' in the last section.

FIGURE 9: The end phrase of the end section of *Shanghai huqin.*

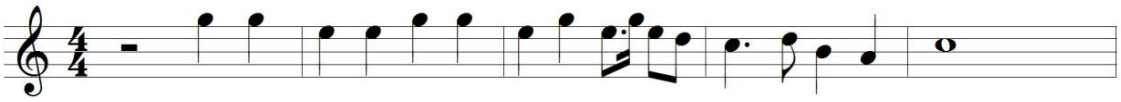

FIGURE 10: the penultimate phrase in the end of *Listen to Pine Trees* (all notations by the author).

CONCLUSION AND SOME THOUGHTS

Through the above interpretation and analysis, we can basically draw the following conclusions.

At this time, the *Shanghai huqin* is not only likely to be the earliest historical recording of a Chinese musical instrument, but also a very important recording of Chinese *huqin* music in the first half of the 20th century. Because the time of the work came out 30 to 50 years earlier than the corresponding recordings of Liu Tianhua and Hua Yanjun, the historical value of the recording for scientific and cultural research is particularly prominent.

As the first *huqin* solo piece that can be heard right now, the recording *Shanghai huqin* updated many of the inherent perceptions about this instrument and its history. In the last years of the Qing Dynasty, additionally to being used as an accompaniment and ensemble instruments, *huqin* has indeed been used as a solo instrument. This piece of music has reached a high standard in terms of creativity and performance, and has an extraordinary artistic expression.

As the first audio recording device that was invented and mass-produced by humans, the cylinder phonograph was used for field work of Chinese music collections shortly after its launching. So, it played an important role with its excellent mechanical and acoustic features.

Because of its systemic originality and uniqueness, the Laufer Collection has an immeasurable value in the study of traditional Chinese music.

As an important promoter of *erhu* music in the 20th century, Liu Tianhua and Hua Yanjun's position in the history of modern Chinese music is beyond doubt. But their outstanding creations did not come out of thin air. Both absorbed rich nutrients from the past music traditions. In the structure of music, the development of melody, the playing techniques and others, the recording *Shanghai huqin* has become a pioneering practice exploration.

Born 118 years ago, the recording *Shanghai huqin* has reached an amazing level in terms of creativity, performance, and expression. The sound of time' prompts us to rethink the Chinese tradition before the 'new cultural movement'. It may have not been an uncultivated and desolate land in people's impression. For thousands of years, the folk music created by Chinese people with their own inherent music methods has gradually evolved into various unique forms of expressions. In the aspect of solo instrumental music, it includes not only literati music such as *guqin*, *dongxiao* and *pipa* music, but also folk instrumental music such as *dizi*, *sona* and *huqin*. Hua Yanjun's *Two Springs Reflect the Moon* And *The Great Wave Tongs the Sand* are just the representatives of his many excellent creations. Among the folk, "there are more than ten thousand folk artists like HuaYanjun who possess unique skills and have excellent creations in modern China" (Chen & Chen, 2006: 223).

For the music of 21st century China, the return of the Laufer Collection may be the beginning of a new cycle. Over the past 100 years, Chinese learners have been constantly watching the West. However, in the process of pursuing the world trend and modernization, how many genres of local culture have been forgotten, erased, ignored or even abandoned intentionally or unintentionally? It is necessary to learn the advanced techniques and theories of western music, but the traditional music, which has evolved for thousands of years, is an indispensable foundation for the development of new music in China.

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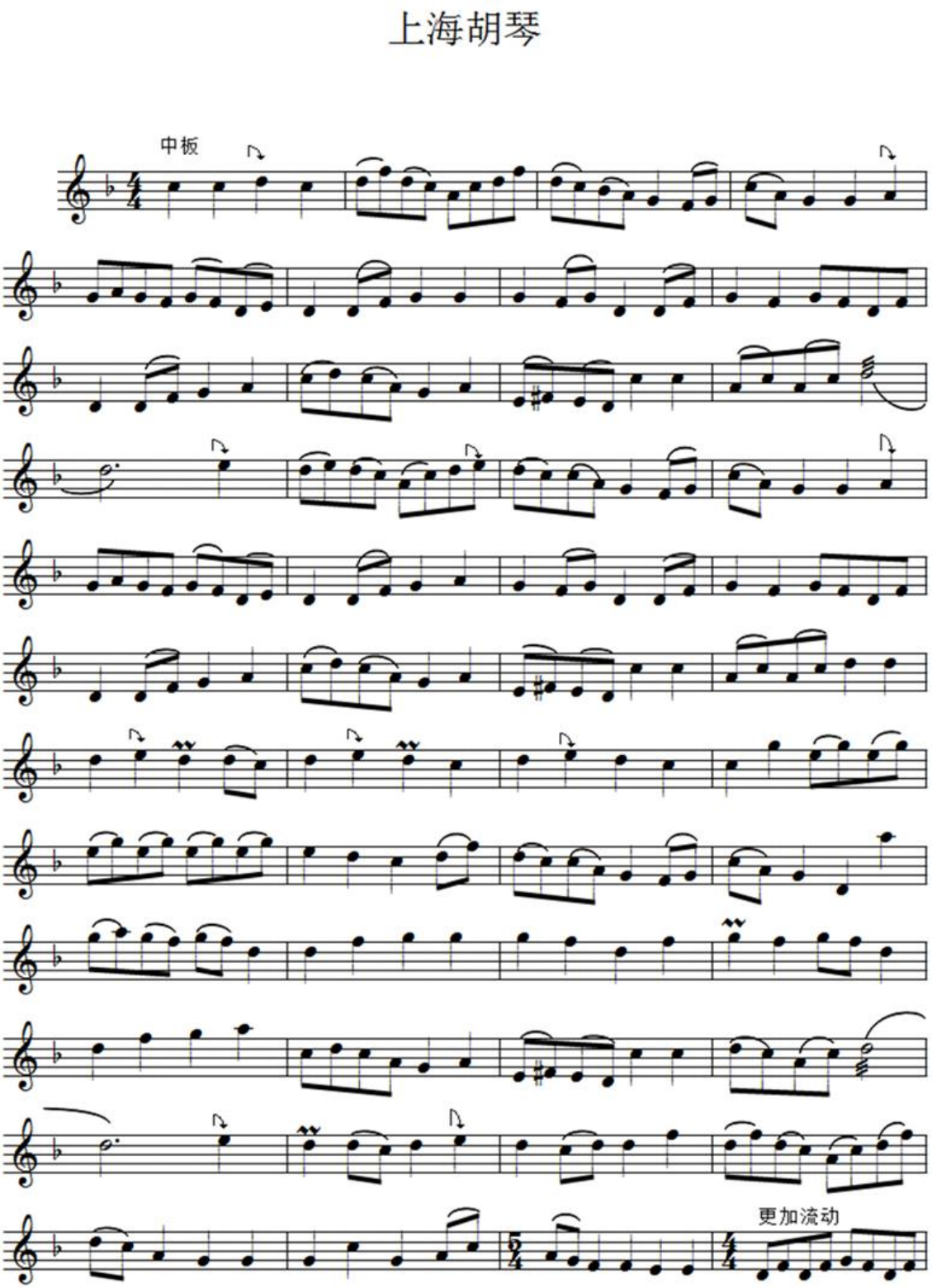
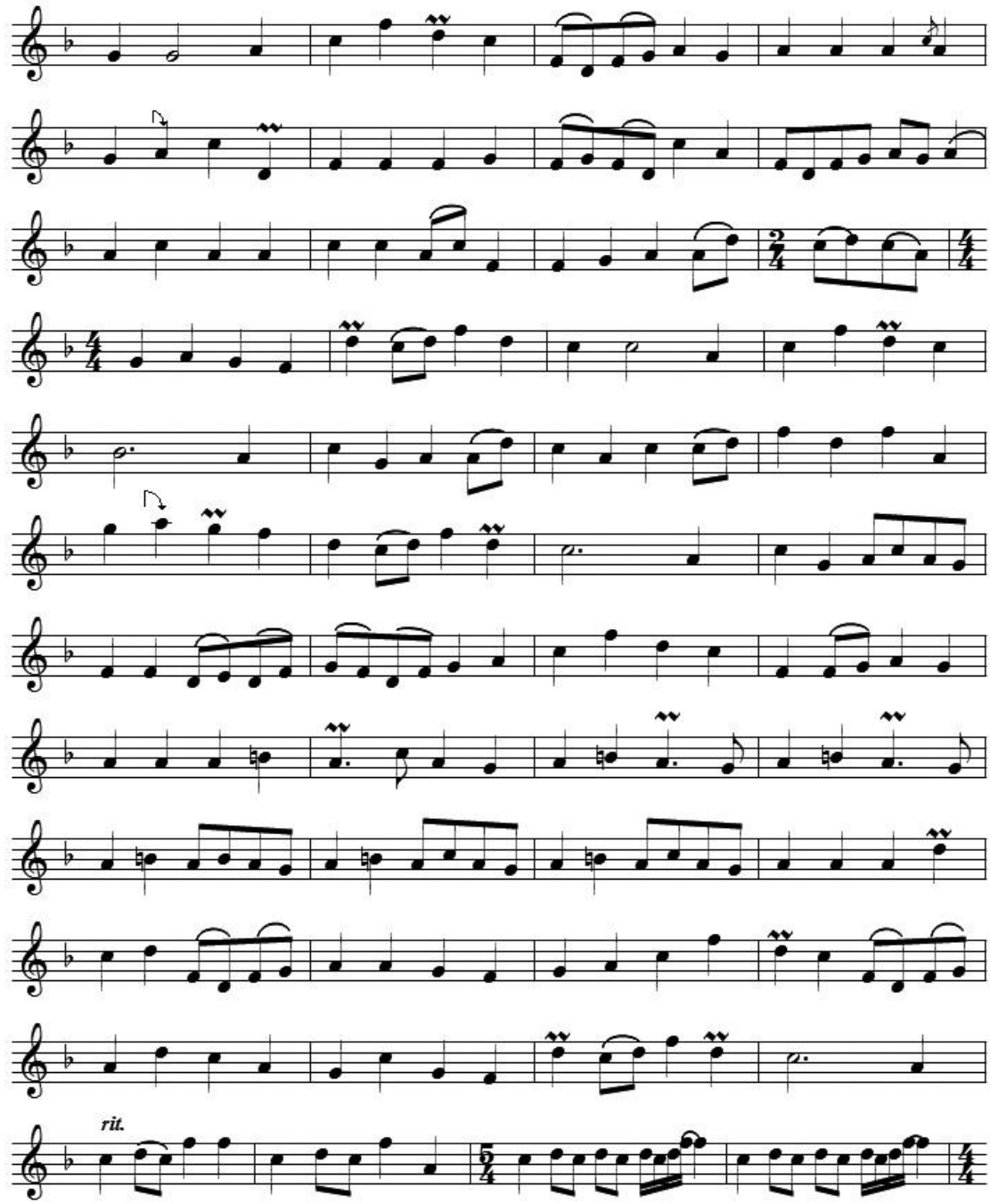
APPENDIX: Full score of *Shanghai huqin* (notation by the author).

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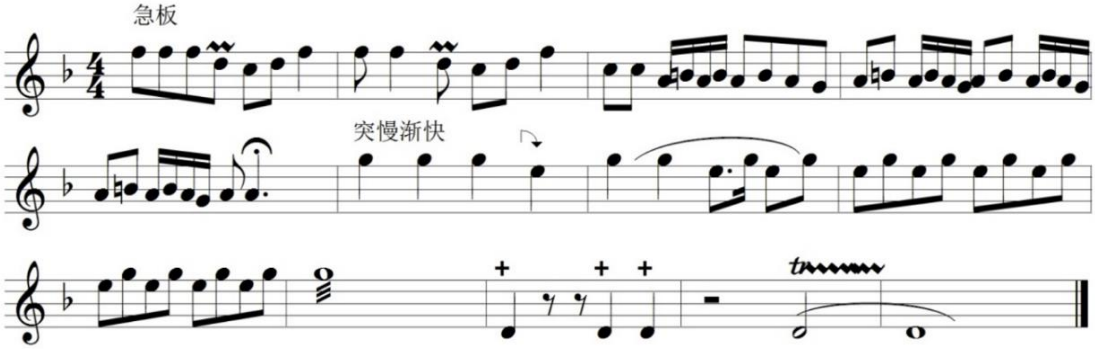
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突慢渐快

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