Traditional Lusheng (Six-pipe Lusheng) Musical Instrument in Guizhou Province, China

Chang Xu

A Thesis Submitted in Partial Fulfillment of Requirements for
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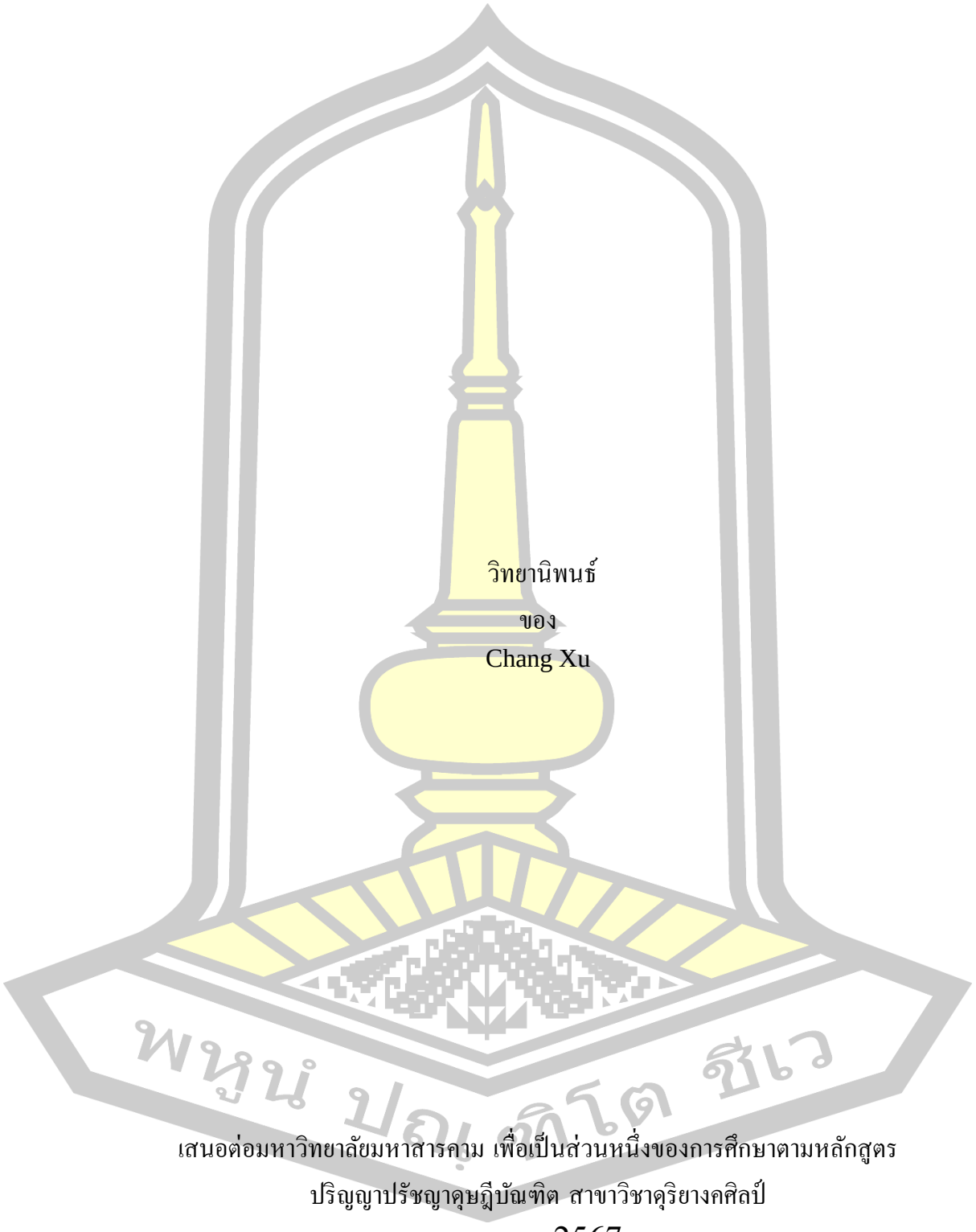

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ABSTRACT

This dissertation focus on the traditional Lusheng (six-pipe Lusheng) musical instrument in Guizhou Province,China. The research objectives were 1) To investigate the process of making musical instrument of traditional Lusheng instrument in Guizhou province, China. 2) To analyze the playing techniques of Lusheng instrument in Guizhou province, China. 3) To investigate the music cultural change of Lusheng instrument in Guizhou province, China. Researcher use fieldwork and other methods to use questionnaires and interviews and other tools. 2 key informants, 1 casual informant were selected. The study results are as follows:

First of all, the production process of Lusheng is divided into three major processes: preparing materials, making Lusheng and adjusting pitch. The production process requires about 23 steps. The quality of each process will ultimately affect the quality and timbre of the Lusheng instrument.

Secondly,analyze and research the playing techniques of Lusheng instrument. Among them, there are 16 kinds of playing techniques. The researchers selected 6 works of Lusheng, including basic, intermediate and advanced playing techniques, and put forward objective views.

Third, to investigate the music cultural change of Lusheng instrument in Guizhou province, China is a very complicated process. The change of Lusheng music culture is mainly manifested in the following three aspects: 1) the change of Lusheng social function, 2) the change of Lusheng communication and protection. 3) The change from six-pipe Lusheng to multi-pipe Lusheng. This is a complex thing. The changes are not necessarily carried out stage by stage, they may be carried out simultaneously, and they may also retain the functions of Lusheng instruments until today.

Keyword : Lusheng, Music Characteristic, Making Process, Playing techniques, Music Cultural Change

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CHAPTER I

Introduction

1. Statement of the Problem

Lusheng is a reed instrument popular among ethnic minorities in southwest China, mainly among Miao, Dong and Yao. The most traditional lusheng is a lusheng with six sound pipes. The research scope is determined in Guizhou Province, which is the most representative of the Lusheng instrument in southwest China, and the researcher visits the inheritors of the Lusheng, a national intangible cultural heritage, and conducts research on the traditional six-pipe Lusheng.

Miao nationality is one of the ethnic minorities in China, mainly distributed in southwest and south-central China, and most of them are in Guizhou Province. Its internal branch system is complicated, different branches, different appellation, mostly according to clothing, headdress, region, etc., maintain the Miao common but different culture among the branches. (Sun Fuju, Yang Xiangmei 2022)

In the hearts of Miao people in Guizhou, Lusheng is a symbol of holiness, innocence, joy and friendship. It is the Miao people's favorite and most commonly used unique musical instrument. In the historical war, the Miao people used the Lusheng as the battle horn to encourage the Miao people to go to war and fight hard. In victory and festival, Lusheng will bring joy, joy, happiness and happiness to the Miao people. Therefore, the Miao people cannot do without it. (Yang Changshu 2005)

Lusheng, known as one of the cultural symbols of the Miao people, is used in music performance in many areas of the Miao people, reflecting strong ethnic and regional characteristics. Mr. Guo Moruo once made the following comments on Lusheng: "As far as I am concerned, it originated from the Miao nationality, and every Miao folk family has Lusheng." In 2008, The State Council officially approved Lusheng music to be included in the second batch of national Intangible Cultural Heritage list, which shows the important position of Lusheng in the Miao nationality area. Lusheng music is an important part of the Miao musical culture in Guizhou province. It has been used in many occasions in the Miao area. It has become an

important carrier for the Miao people to convey their feelings and has typical semiotic symbolic significance in the Miao area. (Li Tianyu 2022)

The lusheng pipe body is composed of four parts: sheng main body, sheng spring, reed and resonance tube, among which sheng bucket is also called air box. The main materials used in making Lusheng include hammer, bellows, copper, ax, chisel, saw, bamboo, wood, tung oil and lime (or replace with latex), etc. The whole material is first divided in the middle, the inner chamber is hollowed out, and then the material is put into the back of the pipe and then glued. The production process of lusheng is very complicated. With the passage of time, fewer and fewer people are making lusheng instruments. (Yuan Weiqi 2021)

In ancient China, there are few records on the craft of ethnic minorities. In addition, the Miao people have no written language, so there is no record on the craft of Lusheng making. Although there have been some research achievements on Lusheng production, most of them are based on text science popularization and are not detailed, so there is a lot of academic space worth studying. We can interview the inheritors of Lusheng production through field work and interview, record the Lusheng production process in detail and objectively, and illustrate with deductive drawings. This will be of great practical significance to the rescue of national cultural heritage and the future research on the inheritance of Lusheng craft. (Yu Qian 2013)

Therefore, my research may better supplement the research on the production process of traditional six-pipe Lusheng, and accumulate a lot of original materials on the production of lusheng, which have important academic value for the dissemination and preservation of traditional Lusheng instruments, because they have a long history and splendid culture, but they also need someone to protect and develop them. This is not only for the protection of Chinese minority Musical Instruments, but also for the preservation and inheritance of human culture. Because in recent years, with the popularity of Western pop music culture, fewer and fewer people are interested in traditional Chinese folk music or Musical Instruments, which has been greatly affected, and some folk music instruments even almost become extinct, which is a situation that we music researchers do not want to see.

After a long time of development, Miao Lusheng has injected new elements into the performing arts. The melody of Lusheng develops from the original simple

and deep to light and high, the singing and melody are freer and more changeable on the strict basis, and the playing techniques tend to be diversified. For example, the traditional playing techniques only include vibrato and extol, which are relatively simple and cannot meet the needs of playing in large-scale ceremonies. Nowadays, the Lusheng of the Miao nationality has varied techniques, which can play harmonic effects and reflect the contrast between strong and weak rhythm. Techniques such as flower-tongue also add some interest to the performance. In this way, the players can better express their emotions and activate the atmosphere. (Yuan Weiqi 2021)

It is very difficult to play the Lusheng, so players must have the basic knowledge of music theory as well as the hobby of Lusheng music. There are also some difficult and thrilling actions in playing the Lusheng, such as "hanging the golden hook upside down", "Golden rooster standing alone", "tumbling" and "handstand", etc. It is impossible to learn the Lusheng without perseverance and understanding of music. At present, the succession work is difficult to progress. (Yang Chaoxing 2022)

The historical origin of Lusheng can be traced back to the Tang Dynasty (640 AD) court music playing more than 1,000 years ago, when it was called "Piao Sheng". Later, in the Southern Song Dynasty (1126 AD), Fan Chengda recorded in his Yu Heng Records of the Guihai: "Lu Shayao people's music was shaped like xiao, with eight vertical pipes and one horizontal pipe running through it. "In the Qing Dynasty (1636 AD), Lusheng culture developed more mature. According to Lu Ciyun's "Dongxi Xianzhi": At first the dance came far and near, and then it was a lively, swift dance" It is the best portrayal of Lusheng music at that time. (Li Tianyu 2022)

With the progress of The Times and the development of science and technology, the living standard of the Miao people has been improved, and the types of recreational activities have become more and more. Lusheng is no longer one of the few recreational activities of the Miao people, and its frequency of use has gradually decreased. The Lusheng is no longer a necessary item in the daily life of the Miao people, but gradually becomes an important prop in large-scale sacrificial activities and festivals, and its symbolic value exceeds its use value. The inheritance of traditional Lusheng strictly follows the inheritance mode of "passing it from male to female, but from mouth to mouth". However, with the impact of other cultures, the

rapid development of The Times and the decreasing practical value of Lusheng, fewer and fewer young people are willing to learn Lusheng, so it has been relaxed in modern times. (Xia Xinyue 2021)

From the above information, in addition, for the long history with the production process has evolved. From a beautiful voice, the researcher is therefore interested in studying the making process of musical instrument, analyzing playing techniques and studying music cultural diffusion of Lusheng instrument. In order to conserve musical instruments and provides insights for those interested in furthering their studies in this musical instrument. For researchers, Lusheng musical instruments are precious Guizhou musical instruments, and with the development of time and the progress of the times, there are fewer and fewer inheritors, and fewer and fewer people are learning Lusheng musical instruments. I hope to use dissertation to contribute to the development of Lusheng and serve as a reference for future researchers.

2. Research Objective

2.1 To investigate the process of making musical instrument of traditional Lusheng instrument in Guizhou province, China.

2.2 To analyze the playing techniques of Lusheng instrument in Guizhou province, China.

2.3 To investigate the music cultural change of Lusheng instrument in Guizhou province, China.

3. Research Questions

3.1 What is the process of making musical instrument of traditional Lusheng?

3.2 What are the playing techniques of Lusheng?

3.3 What is the music cultural change of Lusheng?

4. Importance of Research

4.1 We will know the process of making musical instrument of traditional Lusheng instrument in Guizhou province, China.

4.2 We can know the playing techniques of Lusheng instrument in Guizhou province, China.

4.3 We will know the music cultural change of Lusheng instrument in Guizhou province, China.

5. Definition of Terms

5.1 Lusheng

Refer to the name of wind instruments, six-pipe Lusheng, a lusheng with six sound pipes. It is divided into five types: supertreble, treble, alto, bass and double bass. Widely distributed in Guizhou, Yunnan, Guangxi, Hunan, Sichuan and other places. This dissertation refers to the Lusheng instrument which in Guizhou Province and Southwestern Guizhou.

5.2 Process of making

Refer to the making process of traditional Lusheng is roughly divided into three processes:1) Prepare the materials 2) Make the Lusheng 3) Adjust the pitch. Include five types of size comparison.

5.3 Playing techniques

Refer to technique of Lusheng solo have 3 levels; 1) basic techniques, 2) intermediate techniques, 3) advance techniques.

5.4 Music cultural change

Refer to changes in the role of music on people in the Guizhou society.

6. Conceptual Framework

This dissertation uses traditional Lusheng musical instrument as the research object. The data is mainly obtained through four research methods of Qualitative, Interviews, Observations, Documents. These data are explained by theories of musicology, ethnomusicology, historical musicology and organology.

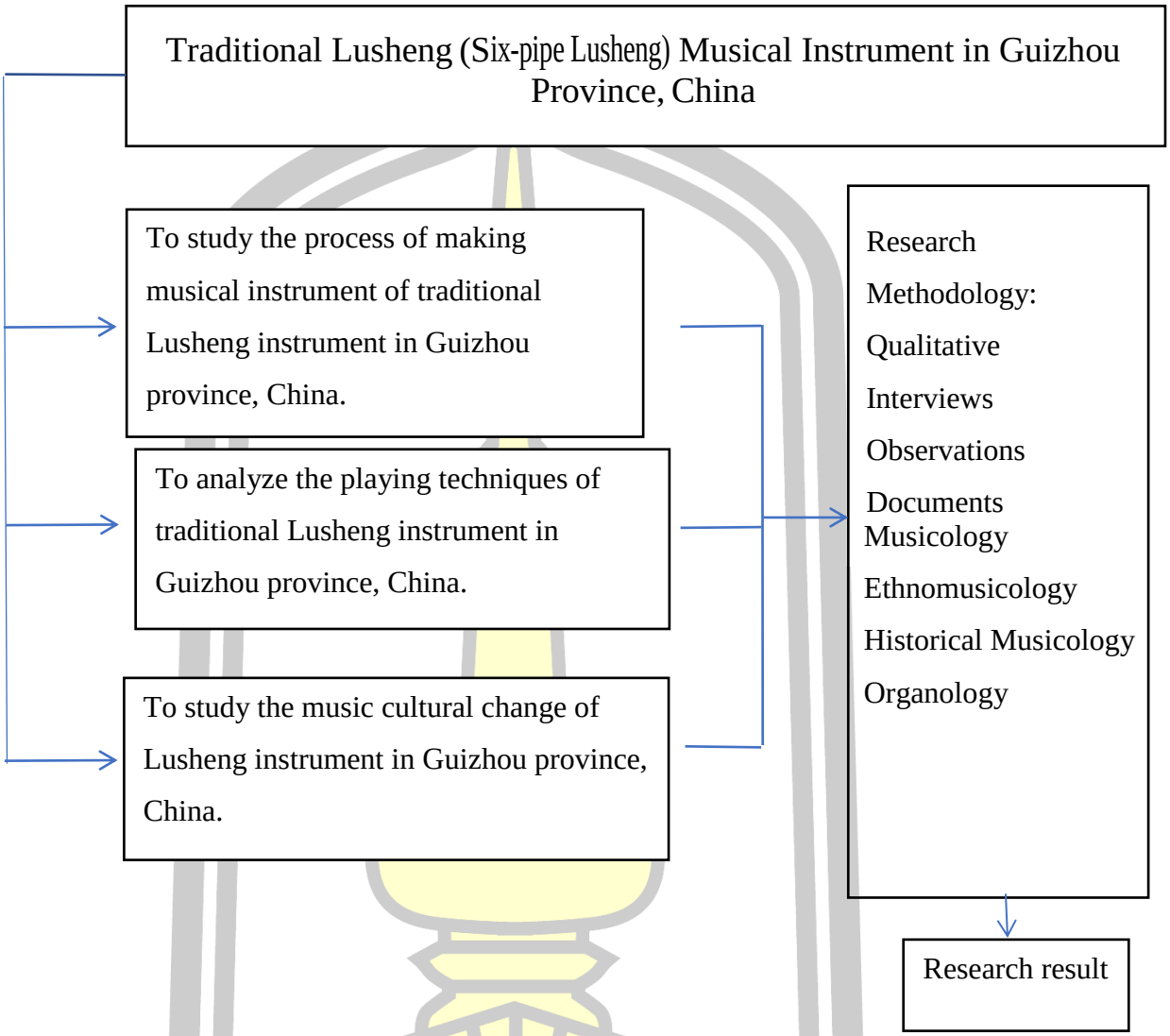

Figure 1. Conceptual Frameworks

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CHAPTER II

Literature Review

In this chapter, the researcher checked the literature about Lusheng, learn about the production of Lusheng musical instruments, musical characteristics, techniques and cultural changes, so as to find the answer for the research objectives of the dissertation.

In this research the researcher reviewed the relevant documents to obtain the most comprehensive information available to be used in this research. The researcher has reviewed the following topics:

1. The General Knowledge of Minority Musical Instruments in Guizhou Province
2. The General Knowledge of Lusheng in China
3. Musical Instrument of Bamboo Wind Instrument in China
4. Playing techniques of Chinese wind instruments
5. The Theory Used in Research
6. Documents and Related Research

1. The General Knowledge of Minority Musical Instruments in Guizhou Province

Guizhou, referred to as "Qian" or "Gui" for short, is located in the southwest of China, east of the Yunnan-Guizhou Plateau. Adjacent to Jingchu in the east, Yunnan in the west, Bashu in the north, and Guangxi in the south, it is at the intersection of the relatively mature Jingchu culture, ancient Dian culture, Bashu culture, and ancient Yue culture. The province covers an area of 176,128 square kilometers. Guizhou is a plateau mountainous area with steep terrain, overlapping mountains, narrow flat land, and vertical and horizontal rivers. 97% of the province is mountainous and karst. The terrain slopes from west to east, and the altitude drops from 2,200 meters to 1,200 meters. It is on the eastern edge of China's second-level ladder. Guizhou is a multi-ethnic province. According to the fourth national census, the population of the territory is about 36 million, including 49 ethnic groups including Han, Miao, Buyi, Dong, Shui, Gelao, Yi, Tujia, Yao, Maonan, She and Hui.

Composition, eighteen ethnic groups. The population of ethnic minorities is 12 million, accounting for 36.77% of Guizhou's population: the ethnic composition ranks third in the country, and the proportion of ethnic population ranks fifth in the country. In 1982, the State Council designated Guizhou as a province of ethnic minorities. (Gu Zongzhi, Zhang Zhongxiao, Yang Fangang 2001)

Guizhou Province is located in the inland area of Southwest China. The terrain in the territory is high in the west and low in the east. It is known as "eight mountains, one water and one field". The ethnic minorities living in Guizhou mainly include Miao, Dong, Buyi and Tujia. These ethnic minorities have a rich cultural heritage of ethnic music, which plays an important role in the social activities, marriages, sacrifices, funerals and other activities of the local communities. (Zhou Juan 2020)

All ethnic groups in Guizhou are good at singing and dancing, and the musical instruments used to accompany singing and dancing have a direct impact on the art of singing, dancing and music in terms of shape, sound quality, range and expression of music. Guizhou has a wide variety of national musical instruments with a complete range and different styles. The repertoires are divided into love and love, festival celebrations, sacrifices and funerals, and narratives. The performance styles include lyrical, recitative, and expressive. . (Yao Hui 2013)

1.1 Miao nationality musical instruments

Among the various ethnic minorities in Guizhou, the Miao nationality has a large number of people and is widely distributed. Not only that, the music culture of the Miao nationality is also quite rich, and the national musical instruments are even more diverse. Therefore, it has attracted many experts and scholars to investigate the musical instruments of the Miao nationality. A large number of academic achievements have emerged. The literature related to Miao musical instruments is sorted out and analyzed according to the theoretical system of musical instruments. Among the musical instruments of the Miao people in Guizhou, wind instruments are the most abundant and frequently used. There are roughly dozens of wind instruments such as Lusheng, Mangtong, Three-eyed Di, Three-eyed Xiao, Tongxiao, and suonas. The research on the stringed instruments of the Miao people in Guizhou is mainly based on the Gupiaoqin. Among the percussion instruments popular among the Miao

people in Guizhou, wooden drums and bronze drums are the representative instruments. (Wang Yue, Yang Chen 2021)

Lusheng is a minority wind instrument that uses airflow to produce sound through Lusheng. It is popular in Guizhou where the Miao, Dong, Shui and Yao compatriots live together. It is an important sacred instrument in social activities such as Miao entertainment and sacrifices. According to its shape, it can be roughly divided into three categories: acute-angled Lusheng, right-angled Lusheng and obtuse-angled Lusheng. (Zhou Juan 2020) The villages where local ethnic minority people live in Guizhou have always been known as "the hometown of lusheng" and "the hometown of singing and dancing". During ceremonies and festivals, the local ethnic minority people will use this characteristic musical instrument to play, and dance happily with the accompaniment of Lusheng, celebrating their own characteristic cultural festivals. Lusheng can be said to be an important symbol of Miao culture in Guizhou, and it is also one of the core contents of the national musical instrument system. The musical works performed by Lusheng often contain the rich thoughts and feelings of the people of this ethnic group, and are also an important manifestation of the positive, optimistic, and progressive spiritual and cultural connotations of the Miao people. (Sun Jie, 2022)

Mangtong Lusheng is a traditional reed pipe harmony wind instrument shared by Miao, Yao, Dong, Shui and other ethnic minorities, and is a symbol and symbol of local ethnic minority culture. The ritual music of the Miao Mangtong Lusheng is an important part of the Miao music culture, and also an important part of the minority music. (Long Taizhong 2022)

"Three-eyed Xiao", called "Ganran" in Miao language, is a typical musical instrument of the Changjiao Miao branch. Judging from the appearance of the instrument, the three-eyed Xiao has three blow holes, so it is called "three-eyed Xiao."Xiao" is mainly popular in Liuzhisuoga in Northwest Guizhou and Agong Town and Longchang Town in Zhijin County. The "three-eyed Xiao" of Changjiao seedlings in Agong Town is mainly made of bitter bamboo, which is abundant in the area where Changjiao seedlings live. Generally, bamboo pipes with better toughness of bamboo joints, slender bamboo body and larger space inside the pipe are used; Most of the air valves are taken from wheat straw in the field, and wild reeds can also

be used. The three-eyed flute is a whistle-style wind instrument, and the pipe body is composed of four parts: air distribution hole, air distribution valve, sound hole, and tuning hole (through the bottom). (Liu Lina 2018)

Datongxiao (also known as "Jiangbudu" in Miao language) is a bamboo pipe instrument of the Miao nationality in Machang Township, Panxian County, Liupanshui City, Guizhou Province. It is about 1200mm long and about 100mm in diameter, and there are 6 sound holes in different positions distributed on the whole bamboo tube, with different distances. When playing, place it on the ground. The player takes a sitting position, uses both hands and feet, and coordinates pronunciation: press the first and second sound holes with the thumbs of the left and right feet to play the role of accompanying sound, press the third and fourth sound holes with the ring finger and thumb of the left hand, and press the ring finger and the fourth sound hole of the right hand. The thumb presses the fifth and sixth sound holes; the hands and feet use techniques such as "half press", "press", "half release", "release" and "vibration" to play different tunes. Because the material of the instrument itself is black bamboo, and the bamboo body is relatively thick, the tone is relatively dull and hoarse. It is a relatively rare bass instrument in Chinese national wind music. (Su Shiqi 2012)

Suona music is popular in Weining, Bijie, Shuicheng and other Yi areas (first recorded in the ancient Yi language during the Qin and Han dynasties). Its pipe body and trumpet are made of wood. In Yi language, it is called "Mohong", "Xianlai" and "Zainai", meaning wood suona. It is mostly used for funerals, and in some places it is also used for weddings and festivals. (Gu Zongzhi, Zhang Zhongxiao, Yang Fanggang, 2001) Suona is a transliteration of the Arabic "surna" (Zulna), also known as "Jiba" and "Surnai". The suona originated from the West Asian generation and was introduced to the Central Plains of China during the Jin and Yuan dynasties. After modification, there are several types of trumpet, Dahuizhi, Hadi and Xiaoqing. In the Ming Dynasty, there were relevant records of trumpet in ancient books, and the use of suona was more common in the Zhengde reign of the Ming Dynasty. Suona is ShaoKou, Suo core, poles, bell mouth of four parts, suona tone, high bright, with a strong appeal, used to represent the natural things or human joys and sorrows, and has its unique feature. (Yoo Dongping 2020)

Gupiaoqin is a folk stringed instrument of Miao nationality in Guizhou. It is called Ang-ang (imitation of piano sound) in Miao language, named after onomatopoeia. Gudiqin is made of locally grown fir, poplar, paulownia, pine, toon tree or other miscellaneous wood, and fir is the best. The fir wood is tough and elastic, has good pronunciation and resonance, and the sound quality is crisp and spreads far. Its body is light and easy to handle and dance. (Ya Wen 1998)

Wood drum drum is one of the oldest drum drums spread in the southeastern Miao area of Guizhou Province. The drum is oblong, with a diameter of about 33 centimeters, and the body is about 170 to 200 centimeters long. Both ends are covered with cowhide. When in use, the drum is placed horizontally on the drum stand. It is recorded in "Miao Fang Zhang Customs Examination": "The wood is hollowed out, and the end of the skin is used as a drum, so that the beautiful woman will hit it, and the man and woman who are good at singing...whirl around and sing, and they are in harmony with each other. Singing, raising hands and stomping feet, responding slowly to the festival, which is called dancing Tibetan." In the past, wooden drums were used for the sacrificial activities of "eating Gu Zang" held by the whole clan every 13 years, also known as Drum Club Festival or Drum Sacrifice It is the most solemn traditional ancestor worship activity. Wooden drums have become a part of recreational activities in folk festivals. Most of the drummers are senior men with prestige in the village, and the dancers are also men. During the dance, one or two drummers hold drumsticks in both hands and beat the drum surface and rim. Mostly, the beat. The crowd dances around, the dancing posture is vigorous and powerful, the arms hang down naturally, the shoulders swing vigorously, and the jumps smoothly, forming a unique style. (anonymous)

Zhang'ao Village, Leishan County, Qiandongnan, Guizhou Province is known as "the hometown of bronze drums, the hometown of folk songs and dances". During Chinese New Year and festivals, men, women and children in the village and men and women from nearby villages will gather in costumes to dance bronze drums in the Tongguping in the village, so it is called "Tonggu Village". According to the age of the bronze drum, the region is different and the characteristics of each bronze drum are different. Scholars who study bronze drums divide bronze drums into various types according to their characteristics, namely Wanjiaba type, Shizhaishan type,

Lengshuichong type, Zunyi type, Beiliu type, Lingshan type, Ximeng type, Majiang type, etc. Eight types. (Tan Yuan 2015)

1.2 Buyi nationality Musical Instruments

The wind instruments of the Buyi nationality in Guizhou include Sister Flute, Leyou, Duixiao, Lelang, Suona, Biguan, etc. The ox bone and calabash are the representative stringed instruments of the Buyi people in Guizhou, and they are mostly used in "Buyi Eight Tones" and "Buyi Opera". In the instrumental accompaniment of Buyi Opera". (Wang Yue, Yang Chen 2021)

Sister Flute, a bamboo reed wind instrument, is popular in Guiyang (Huaxi), Huishui, Pingba, Qingzhen, Guiding, Longli, Pingtang and other counties and cities where Buyi and Miao people live in the central and southern parts of Guizhou. It is made up of two straight flutes of the same length, thickness, and height, so they are called "sister flute". The body of the sister flute is as thin as bamboo chopsticks, 20 centimeters long and short, with six (or seven) openings, and the distance between the holes is 1.8-2 centimeters. It vibrates and sounds through the reed tongue skimmed out with a knife on the top of the pipe body, and the length of the reed tongue is the same as the distance between the pipes. Young people use it to express their emotions, old people use it to relieve fatigue and leisure, and children use it as a toy. Because the opening of sister Flute is roughly the same as that of Suona, it is sometimes used as a substitute instrument for learning Suona. Therefore, the tunes of sister flute are mostly borrowed from Suona. (Gu Zongzhi, Zhang Zhongxiao, Yang Fangang 2001)

Leyou and Lelang are straight-blowing double-reed instruments of the Buyi people, and they are also one of the suona instruments of the Buyi people. Leyou and Lelang play a pivotal role in the accompaniment instruments of Buyi folk songs. The timbres of Leyou and Lelang are crisp and sweet, and the tunes are mellow and pleasant, which are deeply loved by the people of Buyi. Both belong to the main instrument, which can be played alone or in harmony with other instruments. In the Buyi folk song culture, the tune named after Leyou as an accompaniment is called Leyou tune. According to statistics, there are more than 50 kinds of Leyou tunes, including festival celebrations, praising the harvest, talking about love and so on. etc. Le Lang can play most of the Leyou tune folk songs. Leyou and Lelang are musical instruments used by young men and women of the Buyi nationality in southwestern

Guizhou to express their emotions and sing love. Leyou, in the Buyi nationality, means "the little suona that chooses a lover", and Lelang means "the little suona that wanders around", and it is mostly used in the "Lang Whistle" (men and women talk about love) activities in major festivals and celebrations. (Shi Chunxuanzi 2019)

Duixiao is popular in Libo County and parts of Sandu County in southern Guizhou where the Bouyei people live. It is called "Xiuhu" in Bouyei language. It is divided into male and female two pipes, a blow, thumb thickness, pipe length of about 40 cm, three holes, can be issued do,re,mi, Fa natural four tone column. The Duixiao is often accompanied by the Buyi duet song "Xiao Ge". The father-in-law and mother pipes play the two parts of the song respectively, which is soft and beautiful. In the case of singing "duizi" (that is, another part of the chorus) is not in place, you can also play two parts alone, and sing out your feelings like a small song. This technique of blowing two parts in one blow is rare in Chinese folk wind music. (Gu Zongzhi, Zhang Zhongxiao, Yang Fanggang 2001)

Biguan is a folk wind instrument of the Buyi nationality in Libo County, Guizhou Province. It is mainly popular in a few places such as Chengguan Town and Dongguo in Libo County. "Biguan" is named for its shape like a writing brush. The tube body is like a brush pen, the sound cylinder is like a pen holder. The folks call it "Le Gongmu". It is the two main sounds "sol, re" issued by the Buyi people with the pen tube. The homonym of roll name comes to call Biguan. Biguan is a horizontal bamboo reed wind instrument of the Bouyei nationality. According to the internationally accepted saxophone classification, Biguan belongs to the reed-sounding instrument. It is made from a section of "Biguan Bamboo", which is a kind of bitter bamboo and is called "Biguan Bamboo" because it is used as a material for making Biguan. "Biguan song" is a kind of Buyi folk song that is mainly sung with pen accompaniment and is mainly popular in Libo County. Because it must be accompanied by Biguan when singing, this kind of folk song is called Biguan song, which belongs to "song music". category. Since Biguan has only three holes and four tones, it has great limitations in performance. Therefore, Biguan has no music to be played alone, and it is specially for singing accompaniment. (Chen Yun 2009)

Eight Tone is a folk instrumental ensemble popular in some Buyi areas in Ceheng, Anlong, Xingyi and other counties in southwestern Guizhou. It consists of

eight musical instruments including Dizi, Xiaotong, NiuguHu, Huluqin, Yueqin, Baobaoluo, Xiaomaluo, and Cymbals.. Before the Yuan Dynasty, it was a purely instrumental music performance. In the Yuan Dynasty, the performance of Eight Tone on festive occasions added congratulations, respect and congratulations to the new house. (Gu Zongzhi, Zhang Zhongxiao, Yang Fangang 2001)

1.3 Dong nationality musical instruments

There are more than 10 kinds of Dong folk musical instruments, four of which are the most commonly used and have the most ethnic characteristics, namely: Dong Lusheng, Dong Di, Dong Pipa, and Niutui Qin. (Wang Jun 2002)

Dong Lusheng: The Dong Lusheng has a long history. Tian Rucheng of the Ming Dynasty wrote in "Xingbian Jiwen": "The Dong people live in the place where they live together... In their spare time, they play the Lusheng and the wooden leaves to play the two-stringed qin." Most of the Dong Lusheng today is a six sound tube. The reed pipe is plugged together. The six tubes are all made of bamboo, and the resonance tube made of Mianzhu or Nanzhu is hung on it. The air bucket is made of fir wood in imitation hammer shape or corbel shape. The wide part of the air bucket is divided into two rows of upright penetrating and inserting six pipes. The reed pipe forms a 75-degree angle with the air bucket. The reed part of the reed pipe is included in the air bucket, and the reed is made of ring copper. Lusheng is divided into treble, sub-treble, mid-range, bass, sub-bass and other types. (Wang Jun 2022)

The Dong flute is a single-tube edge-shaped air-sounding wind instrument loved by the Dong people. It is mainly used to accompany love songs, but also can be played solo. The body of the Dong flute is made of bamboo, about 30 to 35 centimeters long, and about 1·5 centimeters in diameter. There are 6 pressing holes on the front, and the distance between adjacent holes is about 2·5 cm. When playing, hold the mouthpiece and blow vertically, and use the method of circulating air. Press the 6 holes sequentially from top to bottom with the index finger, middle finger, and ring finger of the left and right hands. There are techniques such as tapping, cushioning, Boeing, and vibrato. It can be overblown, and the commonly used range is nine degrees. The timbre of the flat blowing area is bright, sweet, and soft; the overblowing area has a lower volume, less resonance, and is more tense. Young people mostly play songs in the night. At night, young men and young men come to

the homes of unmarried young women in groups of three or four to invite them to sit together. The men play female songs, and the combination of playing and singing blends harmoniously, full of affection and poetic flavor. (Wang Jun 2022)

Dong Pipa: It is a kind of stringed instrument. In Dong language, it is called "Biba", "Hey Yi" and so on. Often used for accompaniment, but also for solo and ensemble performances. The body of the pipa is divided into three parts: the sound box, the piano stem and the piano head, and it is mostly made of fir or miscellaneous wood. Speakers are oval, peach-shaped, trapezoidal, rectangular, octagonal and so on. The surface is covered with a paulownia veneer, and several circular sound holes are opened on the top. Sound columns are lined between the panel and the back panel. The bar is the fingerboard and is about twice the length of the speaker. There are three or four pegs on the left and right of the chiseled string groove on the headstock to hold three or four strings, and the strings are tuned with the relationship between the major second and the pure fifth (the middle two strings of the four strings are of the same degree). The wooden bridge is placed below the center of the speaker. Use bone or horn picks. The piano head, sound box and other places are engraved with patterns and patterns. (Wang Jun 2022)

Niutui Qin is a unique stringed musical instrument of the Dong nationality. It is named after the shape of the piano body that resembles a cow leg. It is mainly used for the accompaniment of love songs and narrative songs, but also for solo and ensemble. The body of the piano is dug into a corbel shape with a chisel of paulownia or miscellaneous wood, about 55 cm long. The head of the piano is about 7 cm long and has patterns carved on it. The piano rod is about 22 cm long, the upper end is about 2·5 cm wide, and the lower end gradually widens to integrate with the sound box. The speaker is about 26 cm long, 9·5 cm wide, and 5 cm thick. The surface cover paulownia board is a speaker, and the back board is curved. A round wooden sound column is obliquely inserted between the front panel and the back panel, and the volume and tone can be adjusted by moving the sound column. The neck is the fingerboard, the headstock is provided with string grooves, and there are two pegs on the left and right, and there are two strings, and there are also three strings. The five-degree relationship sets the string, bends the thin bamboo and

stretches the ponytail as the bow, and the bow is outside the string. Bamboo saddles are in the shape of a bridge. (Wang Jun 2022)

Guizhou's national musical instruments are not performative music, but a cultural way of life for ethnic minorities to express their emotions, ideas and narratives, with strong national cultural characteristics. Guizhou's national musical instruments are bred in its unique minority culture and relatively isolated and independent living environment. Both in terms of the material form of musical instruments and the artistic form of music, they retain a simple and simple original natural feature. (Zhou Juan 2020)

2. The General Knowledge of Lusheng in China

Lusheng (called "Geng" or "Ga" in Miao and Shui languages, and "Lun" in Dong language) is a reed wind instrument with the widest range of applications and the richest music reserves in Guizhou folk instrumental music. The Lusheng are the most prosperous in the Miao nationality of Guizhou, and spread all over the province; in the Dong-inhabited areas of Liping, Congjiang, and Rongjiang counties in the southern dialect area of the Dong nationality, and in the Dong village of Baojing Township, Zhenyuan County, which is designated as the northern dialect area, the Shui nationality in Sandu The reeds of the Dong, Shui and Yao reeds are also very popular in the autonomous county and the Hexin area of Danzhai County, as well as the Yao villages in Liping County. In addition, in Kaili, Majiang and other counties, there are also Raojia Lusheng. According to investigations, in history, the Yi, Gelao and Buyi nationalities in Guizhou also had their own national Lusheng, but unfortunately it has been lost. (Gu Zongzhi 2021)

Lusheng is an important sacred instrument in social activities such as Miao entertainment and sacrifices. According to its shape, it can be roughly divided into three categories: acute-angled Lusheng, right-angled Lusheng and obtuse-angled Lusheng. The acute-angled Lusheng are mainly distributed in villages in Qiandongnan and Qiannan, Guizhou, where they have the widest spread and the best mass base. The acute-angled Lusheng can be further subdivided according to the playing range and geographical distribution. The performance of the acute-angled Lusheng generally consists of a set of several reeds of different sizes, basically

covering the four ranges of treble, alto, tenor and bass. When playing, it is multi-pronged, has a certain harmony effect, and is expressive and dramatic. (Zhou Juan 2020)

According to ancient legends, the story of using Lusheng as sound signals was widely spread among the Lusheng in northern Guizhou, and evolved from a single-wind instrument to a multi-wind instrument during the long migration process. It can be found from the folk legends that are now being circulated among the people that the Miao Lusheng music art has gradually formed a unique Miao Lusheng cultural system along with the great migration of the ancient Miao ancestors. The unearthed (Han) sheng, yu, and gourd sheng, which are the same "pao class" musical instruments as the lusheng, also showed some characteristics shared by some sheng instruments from the side. From the point of view, it mainly comes from the southwestern part of China, mainly in the Chu culture and the Dianchi culture area.(Zhao Chunting 2012)

The name of the proprietary musical instrument "Lusheng" first appeared in the "Nanzhao Unofficial History" by Ni Ren in the Ming Dynasty.It said: "Every year Mengchun dances to the moon, the men play the lusheng, the women ring the bells and sing in harmony, and dance side by side, tirelessly all day long."In the Qing Dynasty, the scholar Lu Ciyun wrote in his book "Dongxi Fiber Records": "The (male) holds the Lusheng. The Sheng has six tubes and is two feet long....The Sheng festival is uneven, blowing and singing, and the hand is flying. When it is enough, it lifts up, turns its limbs back, and spins its mind. At the beginning, it wants to meet and leave, and when it is young, it flies and dances, and it is fast to chase after each other."This record points out the essence of Lusheng dance. However, the records about the shape and structure of "Lusheng" began in the Song Dynasty. The "Lusha" recorded in the literature of the Song Dynasty is the later "Lusheng".For example, Fan Chengda of the Southern Song Dynasty's "Guihai Yuhengzhi Zhiqi": "Lusha, a Yao people's music, is shaped like a flute, with eight vertical pipes and one horizontal pipe running through it... Hu Lusheng, a Chinese music in Liangjiangdong.". Another example, Zhou Qufei in the Southern Song Dynasty, "Ling Wai Dai Da Dai Ji Ji Men Ji Musical Instruments": "The music of the Yi people includes Lusha, blunderbuss, Hulusheng, and bamboo flute. Lusha's system is like an ancient flute, weaving

bamboo For this reason, vertically and horizontally, and blowing eight times with one blow, the sound of the sound... Hu Lusheng, gather bamboo in a ladle, and blow it to hum... ".These two records provide very important arguments. "Lusha", later "Lusheng" and "Hulusheng" are two musical instruments. . The shape of "Lusha" is similar to the ancient flute (actually refers to the pan flute). It is made of bamboo. Whether it is "one vertical, one horizontal and eight" or "one horizontal and eight vertical", eight pipes pass through one pipe, and the bottom of the pipe is transparent. run through. This shape is basically the same as that of the "Lusheng" used by the Miao, Yao, Dong and other nationalities today. In the following hundreds of years, Lusheng was widely disseminated, and the Miao people brought it to all parts of the world, making it widely spread. Lusheng has also gradually become a popular musical instrument among ethnic minorities in Southwest China. (Zhao Chunting 2012)

Since the 20th century, as long as there are Miao people, there will be Lusheng music. The traditional Lusheng of the Miao nationality in Guizhou are mainly 6-pipe and 6-tone Lusheng with straight pipes. The reform of the traditional 6-tube Lusheng began in the 1950s. Lusheng performers from Guizhou and other areas inhabited by the Miao nationality in Southwest China have joined forces with ethnic musical instrument factories in Beijing, Shanghai, and Suzhou to carry out a series of reforms on the traditional six-tube Lusheng. Lusheng has experienced the development and evolution process of 11 tubes with 11 tones, 15 tubes with 15 tones, 18 tubes with 18 tones, and 18 tubes with 21 tones. This series of reforms, on the basis of retaining the original appearance, timbre, phoneme arrangement, etc. of the original Lusheng, equipped with movable resonance tubes and buttons, realized the purpose of expanding the sound range, volume, and convenient transfer, and greatly enriched the Lusheng music. expressiveness. Dongdangan, a famous Lusheng performer and modern Lusheng reformer, has been reforming the Miao Lusheng since 1956.In the early 1980s, with the pace of reform and opening up, a group of Lusheng researchers and performers improved it. They all developed the 18-tube 21-tone reformed Lusheng developed by Mr. Dongdangan in the 1950s and 1960s.Although each of them has improved the Lusheng, none of them has achieved more than Mr. Dongdangan's 18-tube 21-tone Lusheng, which is a creative reform achievement. (Zhao Chunting 2012)

According to the different cultural functions and playing occasions, reed music can be roughly divided into three categories: sacrificial Lusheng, festival Lusheng and marriage and love Lusheng.

2.1 Sacrifice Lusheng

Funeral ceremonies are important ceremonial activities in people's lives. Whenever someone dies, their family members, relatives and friends will use this ceremony to pay homage to the deceased. Funeral ceremonies, that is, small sacrifices, can only be held when they are twelve years old. The ceremony is relatively simple. When the old man dies, it is a big sacrifice, and grand funeral ceremonies need to be held. The process generally includes staying at the end, putting the coffin into the coffin, reporting the funeral at an optional date, "breaking the bamboo divination", women crying for filial piety, and staying overnight. During the whole ceremony of the great sacrifice, the musicians need to follow the rhythm of the ghost master’ s journey. In the corresponding link, the Lusheng master will play the corresponding Lusheng music. side dance (Sun Fuju Yang Xiangmei 2022)

Festival Lusheng

In the daily life of the Miao people, there are many rich traditional folk festivals. In addition to the traditional Spring Festival, the moregrand one is the Tiaohua Festival, also known as Tiaohuapo. It is a grand festival arranged by the Miao people in Northwest Guizhou according to a certain time and place. Tiaohuapo has a history of hundreds of years, and there are different local opinions about why there is "Tiaohuapo". The first way of saying: In the old days, a family had no sons or no children, so they found a place in the village and planted a flower tree, and invited relatives and friends from all over the world to come and play the lusheng and dance around the flower tree. , to carry out various recreational activities, called "jumping flowers". Hope to have children in the coming year. The second way of saying: In the old days, it was difficult for Miao compatriots from all over the country to get together due to the long distance and inconvenient transportation. The Huapo Festival is a day for compatriots from all over the world to get together. Even if they are far away across regions, everyone will get together. , so as to promote the friendship between relatives and friends of the Miao family. The third way of saying is that Tiaohuapo is a place where young men and women meet, from acquaintance to love.

Therefore, Huapo Festival is also used as a medium to provide opportunities for young men and women to get to know each other. These statements are based on interviews with local villagers and reading books. The Flower Dance Festival is a large-scale traditional festival of the Miao family. No matter men, women, young or old, or children go to the scene in festive costumes, people gather from all directions with Lusheng and form a circle. Men play Lusheng, and women wear brightly colored Dress and dance to the Lusheng music. The love style of young men and women in modern crooked combing is relatively free and open. Therefore, the Huapo Festival is usually called the Love Festival and the Blind Date Festival in the local area. Many young men and women meet each other during this festival, so the Flower Dance Festival can be regarded as a large-scale blind date festival for the Miao people.(Sun Fuju Yang Xiangmei 2022)

2.3 Marriage and Love Lusheng

When the young men and women of Miao express their affection for each other, they can't do without the assistance of Lusheng. Although the way of love between the young men and women of crooked Miao is relatively open and free, they also need a key as the door to connect their love. Lusheng is this key. Men express their admiration to the woman they like by playing Lusheng music for marriage and love. Generally, it is a man and a woman who fall in love freely and get to know each other after a period of getting along. When they are partners for life, they finally become husband and wife with the consent of their parents. (Sun Fuju Yang Xiangmei 2022)

The functions of Lusheng are very extensive, and the music of Lusheng is also regarded as a symbol of "sorrow" and "joy". In funerals, ceremonies and ancestor worship, in marriage and festivals, Lusheng has become an inseparable object and a tool for emotional expression in people's lives. Judging from the number of repertoires mentioned above, in addition to the repertoires played in daily festivals, repertoires of sacrificial Lusheng account for the highest proportion. In addition, Lusheng are also used in weddings and marriages. It can be seen from this that no matter when, no matter what Land, Lusheng are the carrier of the emotional expression of the Miao people, the spiritual pillar of the Miao people, and the symbol of the Miao culture. (Sun Fuju Yang Xiangmei 2022)

With the progress of the times and the development of science and technology, the living standards of the Miao people have improved, and there have been more types of entertainment activities. Lusheng is no longer one of the few entertainment activities of the Miao people, and its use frequency has gradually decreased. Lusheng is no longer a necessary item in the daily life of the Miao people, but has gradually become an important prop in large-scale sacrificial activities and festivals. Its symbolic value and symbolic value surpass its own use value. The inheritance of traditional Lusheng strictly abides by the inheritance model of "passing on males and not females, but word of mouth". However, with the impact of other cultures, the rapid development of the times and the lower and lower practical value of Lusheng, young people who are willing to learn Lusheng are getting more and more. There are fewer and fewer, so it has been liberalized in modern times. In the process of Lusheng inheritance, language is also a very big problem. To put it simply, you can only learn Lusheng if you know Miao language, and the sound of Lusheng is Miao language. However, due to the fact that there are few young people who can use Miao language fluently at present, and most young people of the Miao nationality have not changed their thinking and concepts, there are even fewer people who can and are willing to learn Lusheng. In addition to the language problem, due to the lack of words, there is no systematic Lusheng teaching material in the process of Lusheng inheritance. The teaching method is basically hand-in-hand teaching by masters. It is very difficult to teach Lusheng on a large scale. Affected by historical reasons, the loss of Lusheng culture is very serious, and it is hindered by the difficulty of internal inheritance and the intensification of external cultural influence. (Xia Xinyue 2021)

3. Musical Instrument of Bamboo Wind Instrument in China

3.1 Introduction of Chinese national wind instruments

Wind instrument (Aerophone) is the general term for all musical instruments with air as the vibrating body. According to different excitation methods, it can be divided into three categories: edge-sound Shock Excitation, reed Shock Excitation and lip Shock Excitation. (Yang Chen Discussion on Related Issues Embodied in the Production and Performance of Wind Instruments of Minorities in Southwest China 2021)

The national wind musical instruments in China are mainly made of bamboo, wood, clay and other materials. In addition, some instruments are made of different materials. There are many kinds of wind musical instruments in China, and their forms are different. It is an important category in the four categories of Chinese national Musical Instruments: wind music, pluck music, string music and percussion. The wind instrument is used for solo, ensemble and accompaniment of various operas and dances. It is also commonly used in traditional folk music. From the principle of pronunciation, the Chinese national wind musical instruments can be divided into three types: one is to blow breath directly into the blowing hole to stimulate the vibration of the air column in the tube cavity and the pronunciation, such as Xiao, Panpipe, Di, Xun, Shakuhachi; The second one is the one with a whistle, through which the breath is blown into the cavity to stimulate the vibration of the air column in the cavity. Such as Suona horn, Pipe, etc.; There is another type of instrument in which the breath passes through the reed and is pronounced with the reed and the air column in the lumen. Such as Sheng, Lu Sheng, Bawu, Cucurbit flute. (Lin& J. Q. & Liang. J. L, 2002)

Wind instruments are an important category of traditional Chinese musical instruments. Regardless of the classification of octaves in the Zhou Dynasty (including bamboo, earth, gourd, and wood instruments, corresponding wind instruments can be found as representatives. For example, bamboo: flute, Xun. Pao: Taro, Sheng, etc.) In the current classification of musical instruments, wind music plays a pivotal role in the entire musical instrument system. At the same time, wind music is also the earliest and longest-standing melody instrument in China. (Because percussion instruments in primitive society do not produce tunes, they are not included in the category of musical instruments at the initial stage of music development without tunes) Its history is much earlier than the history of five thousand years of human cultural records, although it is made of ordinary bone and has not been processed or modified too much. But the small holes on it are enough to prove that the tone was produced at that time, and people also turned this ordinary animal bone into a wind instrument at that time, as well as pottery made of clay with only one or two sound holes. Xun, with the development of archaeology in recent years, has also unveiled its mysterious veil. According to archaeological evidence,

this kind of musical instrument also has a history of six or seven thousand years. (Zhao Liang 2022)

3.2 Examples of Chinese bamboo wind instruments

3.2.1 Bamboo Flute

The bamboo flute has a history of at least 8,000 years in China. The bamboo flute originated in China and is a native Chinese musical instrument. The bamboo flute is a treasure in the traditional culture of the Chinese nation. It is an ancient wind instrument of the Han nationality and is widely spread in China. The bamboo flute is made of natural bamboo, so it is called "bamboo flute". Dizi has strong Chinese national characteristics, and its timbre is emotional and melodious. It is the most characteristic and representative wind instrument among Han musical instruments. Bamboo flute has a long history in our country, and its origin is very ancient. A long time ago, there were records about "dizi" in our country. It is recorded in "Customs and Customs" during the reign of Emperor Xian of the Eastern Han Dynasty that Qiu Zhong made the flute during Emperor Wu of the Han Dynasty. Ma Rong's "Flute Fu" says that the "di" comes from Qiang, with four holes in the original and one hole in Jingfang. "Shuowen" said when interpreting the word "di", "di, seven holes, Qiang flute with three holes." "Yuefu Miscellaneous Records" records: flute, Qiang music. (Li Zhi 2016)

Figure 2. The Bamboo Flute

Source: Xu Chang, (2023)

Bamboo flute, a nation -blowing musical instrument, also known as flute and horizontal blowing. Bamboo flute is one of the oldest instruments in China. It is widely used in instrumental performances, vocal accompaniment, opera, music, song

and dance performances. The bamboo flute is made of a bamboo pipe with a thickness of the inner diameter. Its structure is divided into three parts: flute head, flute body, and flute tail. There are 1 blowhole, 1 membrane hole, 6 pores, 2 front auxiliary sound holes, and 2 rear sound holes in the tube body. There are many types of bamboo flutes. Traditional bamboo flutes are the most representative with Qu Di and Flute. Qu Di is named after the opera such as "Kunqu". The flute body is long, the sound is thick, round and soft, the Bang flute is named after the accompaniment of Bangzi opera. The flute body is short, the sound is bright, crisp and high, and there are bass flutes, bass bending pipe flutes, and mouth flutes. Bamboo flute's voice is melodious, easy to learn, and easy to carry. (Wang Jiaxiang, Yang Yang 2020)

Xiao and Di are similar, but different. They are basically the same in basic structure, pronunciation principle and tone-setting method. However, there are great differences between them in timbre characteristics, volume size and range width. Besides the mellow and soft tone characteristics of Xiao, Di also has the personality characteristics of clear and bright tone, wide vocal range and high volume. The biggest difference between them is that Xiao is played vertically, with holes without membrane, while Di is played, with holes with membrane. In both vertically and transversely blowing, bundles of air flow are used to shoot into the blowing end of the pipe at an angle of an inclined plane, so as to produce edge vibration and form sound waves in the pipe. The length of the pipe is shortened by a transverse sound hole, and the frequency corresponding to the length of the pipe is emitted.(Khomkrit Karin, Li Xingchen 2022)

3.2.2 Cucurbit Flute

Cucurbit flute, also known as "gourd flute", called "Bi Langdao"("Bi" is the general term for wind instruments in Dai language. "Lang" means straight blowing, and "Dao" means gourd). The sound of Cucurbit flute is soft and faint, giving people a subtle and hazy beauty. The tremolic vibrato it blows is as elegant and soft as the shaking silk, so it is called "Cucurbit flute". Cucurbit flute is one of the most commonly used instruments in the Dai, Achang, and Dai people living in southwestern China.The Cucurbit flute is composed of a complete gourd, three bamboo tubes and three metal reeds. The whole body is about 30 cm in length. At the end of the Cucurbit flute handle, insert a bamboo tube for blowing, the entire gourd as

a gas box, the bottom of the gourd is inserted into three thick bamboo tubes with different thickness, each inserted into the bamboo tube in the gourd, inlaid with a copper or silver spring spring The film is the thickest in the middle. There are seven sound holes on it, which can blow out the melody. The deputy pitch on both sides can only emit the harmony with the supervisor.(Song Chanyun 2021)

Figure 3. The Cucurbit flutes
Source: Xu Chang, (2023)

According to pitch, cucurbit flute can be divided into super high pitch (minor B key, minor B flat key, minor A key, minor G key),Soprano (F Minor, E Minor, E Minor, D Minor), Alto (D Minor, C Minor, B Minor), Alto (B Flat, A Minor), Tenor (A-flat, G), bass (G-drop, F major), sub-bass (E major, D major, C major) seven categories. Each cucurbit flute key is inscribed on the main pipe, the most commonly used key being C minor. Compared with other musical instruments, the price of cucurbit flute has a huge advantage. The market price of elementary cucurbit flute is about 60-100 yuan, the market price of intermediate cucurbit flute is about 150-300 yuan, and the market price of high-grade cucurbit flute (performance grade) is about 500-900 yuan. The price is very close to the people. This price is acceptable to most families, so the cost of learning is close to the people and has a high mass base. The pronunciation of cucurbit flute is produced by the vibration of the reed .Like the traditional Chinese musical instrument Sheng, it belongs to the reed musical instrument. Because the reed is too soft, playing for a long time will cause the reed to heat up and deform, resulting in no sound or wrong tone, so it is not recommended to play cucurbit flute for a long time. Because the sound of cucurbit flute is simple, it is

generally possible to learn a simple piece of music after one to two weeks of basic learning. (Liu Jia, Luo Yuhan, Zhang Feng 2022)

3.2.3 Sheng

Sheng is an ancient Chinese tube blowing instrument. As a traditional national musical instrument, history has a long history and modern use. Sheng is the only musical instrument in the tubing musical instrument that can be played and sounded. Both blowing and suction can sound. The shape and performance are rich and diverse, and the sound range is wide and the artistic performance is strong. It can be solo and played, especially in the voice of national bands, with an indispensable position. (Li Qiang 2009)

Figure 4. The Sheng

Source: Xu Chang, (2023)

Sheng is a special existence among many tubular musical instruments. It can be unable to do the system of polyphonic sound. Sheng can make sounds, both blowing or sucking during the performance, which can play a linear and beautiful monoe melody, but also can perform block -shaped polyphonic and dwelling symphony. And because of stable sound accuracy and beautiful harmony, Sheng not only has the role of setting up the calibration in the national orchestra, but also the harmony and volume between the sounds of the sound, which is an indispensable existence in the orchestra. Sheng, as an ancient reed instrument, is generally composed of Sheng Dou, Sheng Miao, Shengzui, Shengfen, Sheng Pan, Reprint, sound hole, etc. In terms of structure, the small holes with a reed in Shengpan are installed on the supported small holes on the Shengpan to take on the soul -fighting,

so as to fix a Sheng seedling in the Shengdou, and then adjust the sound position of Sheng Miao by arranging the arrangement of Sheng Miao. The order and combination form different Shengsong instrument shapes. The shape of Sheng can be roughly classified as "traditional Sheng" and "Jiajian Sheng". The shape of Sheng Dou can be divided into four shapes: "Traditional Yuan Sheng", "Traditional Fang Sheng", "Plus Bond" and "Plus Fang Sheng". According to the different arrangements and combinations of Sheng Miao and Sheng Miao, Shengsheng with different sizes and different shapes. Sheng's pronunciation method is special. When blowing or inhaling, the air flow into the soul -stream of the reed in Sheng Dou stimulates the vibration of the reed in the corresponding Sheng seedlings. The soundplay of the pour tube made by metal, so that the sound of Sheng has obvious tremor characteristics. Regardless of whether it is domestic or abroad, the instrument like a coupling acoustic principle like Sheng is extremely rare, which is also the complexity and uniqueness of Sheng's sound structure. It is precisely because of the unique pronunciation principles and structural characteristics of other musical instruments that the pronunciation of Sheng is rich and elegant, and the trembling golden stone sounds and soft silk bamboo sounds are unique. (Chen Yiyao 2021)

3.2.4 Suona

Suona is the transliteration of Suernai, which is widely circulated in Asia, Africa, and Europe. Suona belongs to a single tube and double spring gas instrument. It has a long history, ancient shapes, and high tone and brightness. In the past, it was used in the accompaniment of folk song clubs, Yangge Clubs, advocating classes and local song arts and opera. After continuous development, it has enriched performance skills, enhanced its expression, has become a unique solo instrument, and is used in the accompaniment of national band ensembles or local operas, folk songs and dances. It is popular all over the country. Suona is composed of the five parts of the whistle, the air plate, the core, the pole, and the bell mouth. There are eight sound holes on the wooden rod. The upper end of the pole is equipped with copper core. Film, a bronze -made speaker under the pole. In recent years, picked keys have been added after reform and development. (Ji Junchang 2014)

Figure 5. The Suona
Source: Xu Chang, (2023)

The structure of Suona is similar and different, mainly consisting of four parts. First of all, the first part is the whistle. The whistle is the pronunciation part of the Suona. It is very important. The whistle is usually made of reeds. There are also regions, which are made of wheat stalks. The length, width and thickness of the whistle have a direct impact on the sound of Suona, so the choice of the material of the whistle is very important. The quality of the selected whistle is good, and the sound of Suona will be crisp and even more beautiful. The second part is the core. The core is a part of the connection whistle and pole in the Suona. Generally, the copper tube is used. The shape of the copper tube is tapered. It is the channel for the sound of Suona, and in the core, the sound will be amplified through the copper tube. The third part is the rod, also known as the tube body, usually made of wood. The function of the rod is to amplify the sound waves from the core again, making the volume wider and louder. The fourth part is the bell mouth, also known as the bowl mouth, which is made of copper sheet. The bell mouth is relatively easy to disassemble and is usually installed at the lower end of the pole. The main function of the bell mouth is to amplify the sound of the suona and make the sound more pleasant. Suona is widely circulated all over the country and has become a kind of traditional folk musical instrument in my country, which is deeply loved by people all over the country. (Zhu Ruihua 2016)

3.2.5 Panpipe

The Panpipe belongs to the musical instruments of the Han nationality. It is a wind instrument composed of a series of pipes. The pipes are arranged in order

from long to short or from short to long. They are connected side by side. The bottom of the pipes are blocked with plugs to form a Independent blowpipe, when playing, the airflow enters the pipe, which can produce different high and low tones. (Song Canyun 2021)

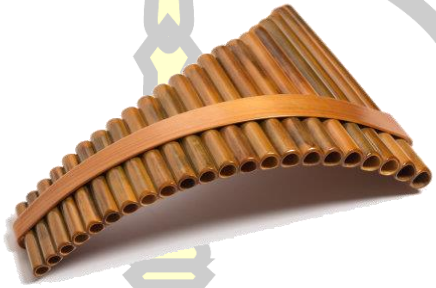


Figure 6. The Panpipe
Source: Xu Chang, (2023)

The Panpipe is a famous musical instrument in ancient China. Its original name was "Xiao". Later, in order to distinguish this musical instrument composed of seven long and eight short bamboo tubes from the "Dongxiao" made by digging a few sounds holes out of one bamboo tube, it was called "Panpipe". Panpipe, also known as "Cenci" in ancient China. The idiom "uneven" is used as a metaphor. Because the pan flute is a musical instrument composed of bamboo pipes of different lengths, it is also called "Bi bamboo". (Niu Longfei 1985)

In recent years, we have studied, imitated and improved the Panpipe, which is almost on the verge of extinction. At the same time, we have created a solo for the Panpipe, which makes the Panpipe shine again in the music stage. Panpipe has rich artistic expression, whether it is beautiful, melodious lyric music, or lively music, are also loved by people.

4. Playing techniques of Chinese wind instruments

4.1 Breathing and ventilation

For a wind player, breathing is not only the gas exchange needs of the body, but also the driving force for the sound of wind instruments. The pronunciation of

wind instruments is due to the vibration of the sounding body (such as reeds, lips, etc.) causing the vibration of the air column in the tube. To achieve this goal, it is necessary to continuously blow air into the tube; the blown airflow makes the sounding body and the air column vibrate; at this time, the effect of the airflow is like that of a bow on a stringed instrument. Mastering the correct breathing method plays a decisive role in the pronunciation, strength, change, spit out and music performance of wind instruments. (Shi Yantao 2007)

To master the skills in breathing, the player should mobilize his own respiratory organs and adjust the breathing activity, so as to ensure that the player's breathing is more flexible and smoother, and help the player to obtain the best performance effect. In the performance of wind instruments, it is necessary to use the breath of the player to adjust the sound through breathing. There are also differences in the volume of music, and breathing can make the instrument produce sounds of different intensities. Through the mastery of breathing techniques, you can better grasp the sound quality of wind instruments. (He Peilong 2019)

4.1.1 Inhale

The main requirement for inhalation is to inhale quickly and in large quantities without over-tensioning the breathing muscles. Pay attention to the following three points: (1) Do not shrug your shoulders. Some people try to inhale as much as possible. Just take a deep breath. He shrugged his shoulders high, thinking that he would inhale more air this way. In fact, due to the lifting of the shoulder blades by shrugging the shoulders, the thoracic cage expands within a small range, which makes it easy to fatigue and ugly in appearance. (2) Do not arch the lower abdomen. Some people think that the inhalation should be as far as possible downward so as to inhale deeply, so they try to arch the lower abdomen hard, as if to inhale the air into the lower abdomen. We know that the abdominal cavity is where the internal organs are concentrated, and it is impossible for air to be sucked there, resulting in a rumbling sound in the abdomen. Moreover, the chest and ribs are pulled down due to the arching of the lower abdomen, and the chest and abdomen muscles are in a very tense state. If the abdominal viscera is squeezed downward due to the descending of the diaphragm, this feeling is correct, but it cannot just arch the lower abdomen from the form. (3) Without false inhalation, there is also such a situation that

the abdomen and waistline expand greatly when inhaling. In fact, it just forced the muscles to contract, and did not inhale air. Just use a lot of strength, not much air inhalation. Some people even just push their abdominal muscles forward to make the muscles stand up, but they don't actually inhale air, and they are very prone to fatigue. (Shi Yantao 2007)

4.1.2 Exhale

1) Concentration: The exhaled airflow should be concentrated and powerful, and the pressure should meet the requirements of pronunciation. If the air flow is scattered and the pressure of the air is not enough, then the timbre will inevitably be unpleasant and the pitch will be difficult to control. 2) Uniformity: The thickness of the blown airflow should be consistent, not thick and thin, strong and weak, otherwise the sound will tremble. As you exhale, control your abs to slowly indent them so that the airflow is even. Let it deflate slowly and evenly like a balloon, instead of squeezing it hard to force it to deflate. If you can do this, the pronunciation will be smooth from beginning to end. 3) Saving: When exhaling, the diaphragm and intercostal muscles relax and return to their original shape, shrinking the chest and allowing air to be exhaled from the lungs. But we must try to control it well, so that the process of muscle relaxation is as slow as possible. Don't let these muscles return to their original shape as quickly as when exhaling naturally. To overcome the natural tendency to exhale quickly so that the air in the lungs is quickly expelled, the sound is blown very short. When exhaling, always feel an inner support force, and the support point of this force should be in the abdominal muscles. In addition, don't exhaust every breath, as the breathing muscles are easy to tense. So leave a little leeway with each exhalation. 4) Unobstructed: When playing, it is necessary to save the use of air and not feel the feeling of suffocation. Some people think that the abdominal wall should "resist" when exhaling, so they understand that the abdominal wall always protrudes during the playing process and does not shrink inward. In this way, the diaphragm and intercostal muscles cannot be relaxed, and the air in the lungs cannot be exhaled smoothly, and it will be very uncomfortable. In order to pursue powerful pronunciation, some people blow the air very hard, so that the mouthpiece of the instrument cannot bear such a large air pressure, and the air is held in the mouth and throat, which will also feel uncomfortable. In addition, if sometimes the inhalation is

not sufficient, and you have to force yourself to play a longer phrase, or you do not "use up" every time and leave more air, etc., you will also feel suffocated. No matter what the reason is for holding your breath, there will be a phenomenon of blushing and thick neck, resulting in tight breathing and unsmooth pronunciation. When playing, the airflow should be controlled mainly by the movement of the abdominal muscles. Think of the abdominal muscles as a "switch" for airflow how much you use is controlled by this "switch". In addition, when playing any note, there must be a feeling of airflow entering from the mouthpiece and then coming out from the bell mouth, instead of just entering from the mouthpiece and just "blowing through" as people are used to say. In this way, the air column in the tube can fully vibrate, and the pronunciation is also unobstructed. (Shi Yantao 2007)

4.1.3 Ventilation

Ventilation is the inhalation during the music. The ventilation should pay attention to the following issues: 1) Accurate, the ventilation should be fast and accurate. At the end of the phrase, a short period of time should be left for quick ventilation. Under no circumstances can it occupy the duration of the first note of the next phrase. Ventilation should be fixed in place, every time it is carried out here. Play immediately after taking a breath, don't take a good breath too early and wait there, it will make you feel suffocated. At the same time, you must make full preparations before taking a breath, so that you will be calm and unhurried during the playing process, and your whole body will not be tense because of the breath. And really inhale the air to really expand the chest. 2) Appropriate. Under normal circumstances, you should inhale enough air when exchanging air. One is to meet the requirement of a certain air pressure during pronunciation, and the other is to maintain the body's need for oxygen. But it also depends on the length of the phrase and the change of strength, you need to inhale not in every situation you inhale the same amount of air. Pay special attention not to inhale to the limit, so that the breathing muscles will be overly tense. You can't suck too little, so you won't be able to last for the next breath. Also not all the time with rapid ventilation should take advantage of possible opportunities to inhale more calmly. 3) Reasonable, choose a place for ventilation must not destroy the integrity of the phrase, usually should be ventilated at the end of the phrase. If the phrase is longer, you can choose to breathe in places such

as chord changes, interval jumps, and tone changes. Rests are places for natural ventilation, but not all rests. Pay special attention not to take a breath before the leading sound and the end sound of the phrase. (Shi Yantao 2007)

4.2 Tonguing

The tongue should be relaxed and natural when tonguing, slightly raised; the tip of the tongue should be raised slightly to touch the lower edge of the tip of the reed, and the part where it touches the tongue should be small and few. Pronunciation principle of tonguing—the breath cannot be broken when making the sound, and the air pressure is always kept around the mouth. When the tongue touches the lower edge of the tip of the reed, the airflow cannot enter the tube body through the air outlet of the reed, and the tip of the tongue prevents the airflow from making it The reed cannot vibrate, and the pronunciation stops; when the tip of the tongue leaves the lower edge of the tip of the reed, the airflow passes through the air outlet of the reed, and the reed vibrates to make a sound; the shorter the time for the tip of the tongue to touch the lower edge of the tip of the reed , the longer the distance, the longer the pronunciation; the longer the tongue tip touches the lower edge of the reed, the shorter the distance, the shorter the pronunciation. At this time, the tongue acts like a piston or valve, the musical works played will be ideal.

4.2.1 Single-tonguing method

Single-tonguing method–three words can be used to practice pronunciation: (tu), (du), (la). There are three more methods in single-tonguing, all of which should be mastered. One is the "sudden" pronunciation: it is often used to play short and fast passages. This pronunciation can improve the stability of the tongue movement when it is pronounced at the beginning of the sound, and the action is simple. Therefore, this pronunciation is called "basic pronunciation" "tone", so that the performers can produce various expression changes and characteristic music effects. Such as long, short, fast, slow, strong, and weak, but the principle of pronouncing the word "too" is always the same. The second is the "Yin" articulation method: also known as "soft articulation", the position and movement of the tongue are roughly the same as the basic articulation method. The tongue can be slightly flat, and the tip of the tongue can be slightly rounded. The attack action should have a gentle idea and feeling, so that the sound can be soft and more coherent. This kind of

articulation is often used in the performance of lyrical melody passages. The third is the "la" articulation method: although it is rarely used, it is very distinctive. The tongue is swept slightly under the tip of the reed, which seems to be hit, and the very weak staccato articulation makes you feel a A coherent granular effect, handled extremely deftly and delicately, this kind of voicing fully demonstrates the artistic charm of a superb performer.

4.2.2 Double-tonguing method

The double-tonguing method is practiced with (tu-ku) or (te-ka), which requires alternate use of two different methods of attacking and picking up sounds. Generally, the two sounds are used to prevent the reed from vibrating and the pharynx to cut off the airflow. A method of using alternately. The double-tonguing method is good at playing fast phrases, and it is an effective skill and means to push the work to a climax. The sound played should be stable, the volume balanced, and the starting and blowing timbres uniform. In playing, use it freely and achieve the expected purpose.

4.2.3 Third-tonguing method

The third-tonguing is practiced with (tu−tu−ku) or (te−te−ka) pronunciation. This method of voicing can produce extremely fast phrases like the double voicing method, and is especially suitable for the performance of triplet forms or phrases with three different tones. (tu−tu−ku) is called positive three spit; (ku−ku−tu) or (ku−tu−ku) is called anti three spit. This three-speech method often makes the "suddenness" of each repetition very prominent, so it is very clear and moving to play.

Use the sound of (fu) or (du fu) to practice. When practicing, put the upper lip as far as possible into the head (mouth), relax the lower lip, make it tight and loose, and let out the air directly, bringing out the sound of (fu) or bringing out the sound of (du fu) sound. This kind of spit is mostly used in slower lyrical passages. (Wu Haijun 2007)

5. The Theory Used in Research

5.1 Musicology

Musicology is the general term for all theoretical subjects that study music. The general task of musicology is to elucidate the nature and laws of various phenomena related to music. For example, studies on the relationship between music and ideology include music aesthetics, music history, music ethnology, music psychology, music pedagogy, etc. The study of the material and material characteristics of music includes musical acoustics, jurisprudence, instrumental science, etc. The study of music form and its composition includes melodic theory, harmony acoustics, counterpoint, composition theory, etc. There are also from the performance aspect to consider, such as performance theory, command method and so on. (Beard& D. J. & Gloag& K, 2005)

In this research, the researchers applied the method of Musicology to analyze the playing techniques and musical works of Lusheng, the analysis was divided into three groups: basic, intermediate and advanced. The musicological analysis in this thesis, firstly, focuses on the investigation of human spirit and social environment, and explains the musical phenomenon from the perspective of human society, history and cultural life outside music. Secondly, the social nature of music is explained through the music itself, especially through the form elements of music.

Ethnomusicology

Ethnomusicology is a discipline of music theory under musicology. It was widely called "comparative musicology" in its early development before the name of this discipline was used. This is a discipline of musicology that uses comparative methods to study music itself and its characteristics from the perspectives of acoustics (physical acoustics), psychology, and psychology. Ethnomusicology is a theoretical discipline under musicology that studies the traditional music of various nations in the world and its development types. Fieldwork is the basic way to obtain research materials. Its main feature is that it regards all the musical objects of investigation and research as a musical phenomenon, and advocates placing the existing traditional music and its development types of a certain nation in the specific natural environment and social and cultural environment of the nation. In it, through the investigation and research on how members of the nation (individuals or groups)

construct, use, disseminate and develop these music types according to their own cultural traditions, it expounds the basic morphological characteristics, survival variation rules and national culture of the music types. (Wu Guodong 2012)

Conduct fieldwork and interview key informants using ethnomusicological research methods. It is divided into two phases: collecting, organizing data and analyzing research data. In addition to on-site recording and video recording, the work content of the first phase also includes investigating, collecting and recording various cultural phenomena related to music, including investigating and studying music and social and cultural background and other arts, exploring the awareness of singing, the music of performers and their The meaning of music using language and more. The second stage is to organize the work. It includes the analysis of collected acoustic data from various aspects of musical performance, such as sound system, musical structure, singing and performance methods.

5.3 Historical Musicology

The historical Musicology is a branch of musicology. It is a discipline to study the specific process and regularity of the development of music history using various methods of interpreting history in chronological order. Originally Western music was the main research axis, and now it includes music history research from all over the world. It studies the issues related to the writings of music history and the science of the past changes of music that appear in music treatises, such as the evolution, development and laws of music content and form. It belongs to a branch of the entire field of human cultural history research, and is a discipline juxtaposed with historical studies such as literature, fine arts, and dance. (Crist& S. A.& Marvin, 2004)

In this research, the method of historical musicology is used to study the specific process and development law of chronological interpretation of history.From the perspective of historical musicology, researchers study the changes in music performance methods, performance skills and performance forms of Lusheng during the historical development process, and further elaborate on the factors that produce these changes.

Organology

"Organology" is the systematic knowledge and research on musical instruments, including the classification of musical instruments, the history of musical

instruments, the use and function of musical instruments in different cultures, and other research related to musical instruments. Theories about musical instruments can be traced back to the classification of "eight-tone" musical instruments in ancient China, that is, gold, stone, silk, bamboo, gourd, soil, leather, and wood; " musical instrument category. (Zhou Jinmin 2018) Organology–the science of musical instruments–should include not only descriptions of musical instruments and their history, but also the equally important but often neglected "science" of musical instruments, e.g. a particular way of playing, its function in music, the decoration on an instrument that differs from its construction, and other social and cultural considerations about it. (Mantel Hood)

Organology research methods in this dissertation was used to study the origin, development, evolution, transmission and derivation of Musical Instruments, as well as their structures, characteristics, manufacturing techniques and materials of Lusheng.

6. Documents and Related Research

Up to now, researchers have included several dissertations and monographs on Lusheng. There are also scattered insights and some discussion in the monographs. It is worth mentioning that so far, there are no foreign articles on Lusheng, and there are only 5 master's thesis and doctoral dissertations related to Lusheng in China. Different from previous studies, this thesis will conduct a detailed study on the production process, performance skills, and performance styles, and explore the changes in its music culture. In general, the studies collected by the researchers mainly include the following aspects:

Judging from the publication time of the papers, the interval is from 1951 to 2023. Judging from the themes of the papers, most of them focus on the historical origin, production technology, cultural transmission, protection and development of musical instruments such as the lusheng, and the Lusheng dance. With the passage of time and the progress of the times, some musical instrument manufacturing experts and scholars have also carried out research on the improvement of the traditional

Lusheng. Due to its unique shape, exquisite production, and beautiful timbre, the academic circle has a great interest in its research.

Li Quanmin (1957) published the paper "The Lusheng of the Miao Nationality in Guizhou" in the journal "People's Music", which is the earliest academic achievement of the researchers on the Lusheng musical instrument. In this article, the researchers introduced the Lusheng musical instrument, and divided the Lusheng into two categories: "Big Lusheng" and "Small Lusheng", and introduced them in detail.

He Yun, Jian Qihua, Zhang Shuzhen (1958) "The Lusheng of the Miao Nationality—Introduction to the National Musical Instruments of the Chinese Brothers" was published in the journal "Music Research". In this paper, the researcher introduces the structure of the Lusheng instrument, the playing skills of the Lusheng instrument, the content and form of playing the Lusheng instrument. And research on the ensemble of different types of Lusheng, and conduct research and explanation through the way of music scores.

Ayu and Shixiang (1963) paper "Lusheng" was published in the magazine "People's Music" and mentioned for the first time that "the Lusheng Orchestra can not only play Guizhou Lusheng music, but also properly play some orchestral music, such as "Yao Nationality Dance Music". ", Tchaikovsky's "Four Little Swans" and so on.

Zhang Yongguo (1964) mentioned in the article "Talking about Lusheng" published in the journal "Chinese Nationality": "It is recorded in the literature that the southern minorities in my country have used Lusheng more than two thousand years ago" and listed the history of literature analysis and research on Lusheng.

6.1 The research on the historical origin of Lusheng are as follows:

Dongdangan (1980) published an article "Exploration of the History of Lusheng" in the journal "Guizhou Ethnic Studies". It is recorded in the article, folk tales and ancient songs of the Miao nationality: blowing the Lusheng lures the sun to come out for lighting, blowing the Lusheng lures wild animals to come out for capture, blowing the Lusheng to gather people and horses in wars and so on. Although these stories come from historical documents, they are only legends. However, the two characters Fuxi and Nuwa mentioned in some documents are closely related to the Miao and Yao people who use Lusheng.

Chen Qiguang (1981) published an article "Research on the Etymology of "Lusheng"" in detail and explained the transformation process of the term "Lusheng". Sheng", or "Piaosheng"; later literature is generally called "Lusheng", and it is also called "Luguan" or "Kongmingguan". Perhaps the earlier sheng of the Miao nationality is the same as the sheng of the Han nationality. The reed pipe is installed in the Pao, and the Pao is a gourd, so the Han people call it the gourd sheng, or Lusheng for short.

Qin Xu (1981) published an article "A Preliminary Exploration on the Origin of the Lusheng III" in the magazine "Musical Instruments", in which he said: The gourd sheng is the oldest kind of sheng. The ancient sheng belongs to the "Bao" of the octave, which is the gourd. The earliest objects of ancient sheng that we can see now, such as the sheng unearthed from the tomb of Marquis Yi of Zeng in Suixian County, Hubei Province in the early Warring States Period, and the copper gourds unearthed from Lijiashan, Jiangzhou, Yunnan, Shizhaishan, Jinning, Xiangyun Dabona, etc. Sheng, all show that the earliest Lusheng is a gourd sheng.The pipes of the ancient Lusheng were arranged horizontally in two rows. In 801 AD, the people of Hussars presented music to the king of the Tang Dynasty, and it is recorded in The New Book of the Tang Dynasty that there is Pao Sheng, a pipe arranged right and left, which is still present in Laos, Cambodia, Thailand and Burma. It also maintains the characteristics of calabash as sheng pipe, which is effective and has many sheng pipes, but the pipes are changed from two rows in front and back to two rows in left and right.

6.2 The research on the making craftsmanship of Lusheng are as follows:

Zhao Xiaonan (2001) Production of Lusheng and Inheritance of Lusheng Craftsman was published in Chinese Music magazine. To make Lusheng, Dong families need to hire specialized lusheng masters. Lusheng masters, like those with certain professional skills such as silversmiths and blacksmiths, are highly respected in the vast southern Dong villages. Since not every village has a master who can make lusheng, and lusheng playing is usually concentrated in several large traditional festivals of the Dong people in the south, making lusheng has become a sidelight for some Dong people who have this skill in the slack farming period in Hunan, Guangxi

and Guizhou, and family workshops and the tradition of learning from them have been formed. In some places, there are even villages specializing in making lusheng.

Li Wenzhe (2012) The Origin of the Lusheng of the Miao Nationality and the Inheritance and Development of Its Making Skills was published in Journal of Zhaotong Normal College, in which he stated that the Lusheng is rigorously structured and has special material and process requirements for making. Generally, Lusheng consists of three parts: sheng tube, sheng bucket, reed and resonance tube. The main manufacturing materials of the lusheng of the Miao nationality are copper (reed), bamboo (voice tube) and wood (air box). However, the shape and color of the lusheng of the Miao nationality vary from place to place, as well as the size of the model, the manufacturing process and the craftsmanship of the Lusheng craftsmen. The color of the Lusheng varies according to the production materials. The length and number of sheng pipes are also different, ranging from a dozen centimeters to three or four meters. Now, after improvement, they can be increased to more than a dozen or even twenty pipes, with a wider range of sound.

Wu Yuanjiao Tuerhong· Si Lajidding Liang Yuanzhen (2015) An Examination on the Production Process and Technology of Dong Nationality Lusheng was published in the journal Grand Stage, in which it was mentioned that the first step of making Lusheng is to select materials, and the main materials must be fir wood more than 10 years old and bamboo wood more than two years old. The second step is the shaping process. After the bamboo is cut, it is baked by charcoal fire to make the bamboo strong and shaped. In the baking process, it is necessary to straighten it from time to time, and then cool it with water to shape it. After that, it is erected in the indoor dry and preserved. After finishing these procedures, the overall shape of the sheng dou should be shaved and planed flat, and chiseled to form a ladle.

Yuan Weiqi (2021) published a paper on the Production Technology, Inheritance and Development of the Lusheng of the Miao People in the Artist magazine, which mentioned that the production technology of the Lusheng of the Miao people reflected the production technology of reed wind instruments in ancient China, and retained its essence and distinct personality. The Lusheng of the Miao people has been passed down from generation to generation with various forms, pure sound and elegant appearance. Lusheng makers should not only have long experience

as craftsmen, but also master certain knowledge of physics, mechanics and music theory. Since the details of the craft are usually taught by the master himself, it is difficult for outsiders to find detailed written materials to keep, so it is very difficult to inherit the craft.

6.3 The research on the playing techniques of Lusheng are as follows:

Wan Jingui (2022) On the Playing Skills and Practice Methods of Multi-pipe Lusheng. There are many playing skills of the multi-pipe Lusheng, which are constantly updated and changed with the development of The Times. Only by fully mastering playing skills and constantly practicing, can the performance of the multi-pipe lusheng be improved. Obviously, it is very necessary and important to master the playing skills and practice methods of multi-pipe lusheng, and it is also of great practical significance to research the playing skills and practice methods of multi-pipe lusheng.

Yang Zhengping (2018) published a paper on the Playing Skills, Practice Methods and Presentation Forms of Multi-pipe Lusheng in Folk Music. The performance of Lusheng is divided into sitting, standing, walking and music and dance. The application of multi - pipe Lusheng breath can be divided into abdominal gas use and ventilation techniques. According to the playing practice, the articulation of the multi-pipe lusheng can be divided into single articulation, double articulation and triple articulation. According to the performance practice, the multi-pipe Lusheng flower tongue can be divided into small flower tongue, large flower tongue, burst flower tongue, double tongue tone and tongue kneading tone.

Tao Xinghai (2019) Playing the Lusheng of Miao Nationality in Northwest Guizhou. The playing skills of the Lusheng of the Miao nationality in northwest Guizhou are mainly divided into two kinds, one is fingerings and the other is breath. Finger-pressing can be divided into two types: finger-pressing and finger-pressing. Finger-pressing is a fingering method used when playing needs. Fingers are touched to the sound hole with more muscles in the finger. The movement of finger pressing is relatively soft and is often used in beautiful, soft and sweet music.

6.4 The research on the transmission of Lusheng are as follows:

Du Zaijiang (2011) Lusheng Culture: National Memory on the verge of Fracture. When the tide of modernization swept through every remote ethnic

mountain village, countless young people gradually forgot the Lusheng culture that their ancestors had depended on for survival. Even if the government takes measures such as "introducing Lusheng culture to campus" to save it, the traditional lusheng production still faces the challenge of mechanization. Fewer and fewer young people can play the lusheng, and the older ones are getting older. In this inevitable "deconstruction" of traditional Lusheng culture, how to "reconstruct" the memory of Lusheng culture that is on the verge of breaking? This is still an unknown for most people.

Yang Shaoyong and Wu Wei (2010) Protection Status of the Dong Lusheng in the Passage Under the standard protection of the Five-year Protection Plan for the Dong Lusheng in Tongdao Dong Autonomous County, the passage will form a more powerful team for the inheritance and promotion of the Dong Lusheng, and be more committed to the establishment and development of folk art groups with the Dong Lusheng as the core artistic carrier. Systematic training has been conducted for folk lusheng teachers, Lusheng practitioners and Lusheng lovers, and "Pingtan model" has been actively promoted. Children's Lusheng teams have been cultivated, ethnic culture has been implemented in classrooms, internal and external exchanges have been expanded, and the charm of the hometown of Lusheng art has been better transmitted and amplified by them.

Xiang Zilian (2020) A Study on the Inheritance and Development of the Lusheng Culture of Miao People in Zhouxi, Southeast Guizhou. The inheritance of lusheng culture not only relies on spontaneous inheritance among lusheng craftsmen, but also needs policy protection at the government level to a large extent. The Kaili municipal government attaches great importance to carrying forward the excellent traditional national culture. In order to effectively protect and inherit the representative items of intangible cultural heritage, the government encourages and supports the representative inheritors and representative inheritors of intangible cultural heritage items to carry out the learning activities, and cultivates and expands the talents team of intangible cultural heritage. Based on the actual situation of Kaili City, Measures for Identification and Management of Representative Inheritors of Intangible Cultural Heritage Projects of Kaili City (Kai Fu Letter [2017] No. 443) and Measures for Identification and Management of Representative Inheritors of

Intangible Cultural Heritage Projects of Kaili City (Kai Fu Letter [2017] No. 447) were formulated.

In the literature review of this chapter, the researcher selected 17 literatures on this topic and summarized them into four parts. Research on Lusheng theme, 3 historical research documents, 4 production technology documents, 3 performance techniques documents, 3 music culture communication documents. Researchers read and write these articles to provide ideas and references for future research. As for the production of Lusheng instrument, it is pointed out in the literature that it is a very complicated work and tests the producer's experience very much. However, there are no detailed and detailed articles to research the production of Lusheng instrument. I will conduct a detailed research on the production of Lusheng instrument from all aspects. There are also many playing methods of Lusheng in the literature. I will conduct a detailed exploration of the playing methods of Lusheng by interviewing my informant again and analyze the precautions in the playing practice of each method.

CHAPTER III

Research Methodology

This research is a qualitative research. The researcher chooses Guizhou Province as the research area of Lusheng Instrument, and the researcher chooses key informants as the research clues. This chapter is divided into two parts, one is the research scope, the other is the research process. The scope of the research includes the scope of the content and the scope of the research site. The scope of content includes the investigation and summary of Lusheng production. Then there is the research process, including the selection of survey objects and research tools.

1. Research Scope
    1.1 Scope of Content
    1.2 Scope of Research site
    1.3 Scope of Time
2. Research Process
    2.1 Selected sites and Informants
    2.2 Research Tools
    2.3 Date Collections
    2.4 Date Management
    2.5 Date Analysis
    2.6 Summary of Chapters

1. Research Scope

1.1 Scope of Content

This dissertation investigates the process of making musical instrument of traditional Lusheng instrument in Guizhou province, China, analyze the playing techniques of traditional Lusheng instrument in Guizhou province, China and investigate the music cultural change of Lusheng instrument in Guizhou province, China.

1.2 Scope of Research site

Figure 7. Map of Guizhou Province, China.
Source: https://commons.wikimedia.org/wiki/File:China_Guizhou.svg
(Accessed Jul.11, 2023)

1.3 Scope of Time

Jan. 2023 to Jan. 2024

2. Research process

2.1 Selected sites and Informants

Research site: Leishan County and Danzhai County, Guizhou Province, China.

The reason:

Leishan County and Danzhai County in southeast Guizhou Province are selected as the research sites of Guizhou Lusheng musical instrument, because these two counties are important birthplaces and representative areas of Guizhou Lusheng culture, with rich cultural background and historical inheritance. First of all, Leishan County is the original place of Lusheng , with a long history of lusheng culture and

rich lusheng instrument resources. Secondly, Danzhai County is also one of the representative areas of Lusheng culture in Guizhou, with rich lusheng instrument resources and a long music history .Leishan County and Danzhai County are the main producing and inheriting places of lusheng instrument in Guizhou Province. The lusheng production and playing skills here have been recorded for hundreds of years, forming a unique style and characteristics. Leishan County and Danzhai County, as important birthplaces of Lusheng musical instrument culture in Guizhou Province, have rich historical and cultural deposits and long cultural inheritance.

Key informants:

The criteria for selecting key informants are:

1) He or she was born and grew up in Leishan or Danzhai County, and is a native.

2) He or she is the inheritor of the national intangible cultural heritage of Lusheng Instrument.

3) He or she knows the culture and development of Lusheng instrument.

4) He or she is an excellent lusheng maker, and has been making lusheng for more than 40 years.

5) He or she is the inheritor of the Lusheng musical instrument culture.

Based on the above selection criteria, the key informants I choose are Mr. Mo Yanxue and Mr. Yang Guotang. I chose them as my primary source of information. Mo Yanxue is a representative inheritor of the first batch of national intangible cultural heritage projects. He was born in a lusheng making family that has been passed down from generation to generation. Since the age of 16, he has followed his father to make lusheng. In the past 47 years, he has never stopped making lusheng. The mahogany Sheng foot 15-pipe Lusheng made by him has been collected as one of the top ten folk crafts by the Guizhou Federation of Literature and Art Circles. Since 2002, he has won many awards, including "Top Ten Folk Craft Masters of Guizhou Province" and "Senior Folk Craftsman of Guizhou Province".

Figure 8. Mr. Mo Yanxue
Source: Xu Chang, (2023)

Yang Guotang, a Miao nationality, was born in Paiya Village, Longquan Town, Danzhai County, Guizhou Province. At the age of 15, he began to learn the playing methods and production techniques of the Lusheng. Through diligent study and hard practice, he has a deep understanding of the folk Lusheng music of the Miao nationality and is good at playing the difficult lusheng music. The lusheng made by him has fine workmanship and beautiful tone, and its lusheng products have been purchased by art colleges and universities in the province as one of the necessary teaching AIDS. He was invited to CCTV Spring Festival Gala to perform the mang tube Lusheng sacrificial music. In May 2018, Yang Guotang was named as the representative inheritor of the national intangible Cultural heritage project Lusheng Music (Miao Nationality Mang-Tube Lusheng) by the Ministry of Culture and Tourism. Over the past decades, he has cultivated performers, producers and folk Lusheng performers, etc., making outstanding contributions to the spread of the Lusheng music culture of the Miao nationality.

Figure 9. Mr. Yang Guotang

Source: Xu Chang, (2023)

2.2 Research Tools

Interview forms: In order to collect the data needed for the research, the researchers divided the interviewees into two categories. The first category is the Lusheng producers of China's national intangible cultural heritage, and the second category is the Lusheng instrument players, who specialize in the performance, dissemination and research of Lusheng instruments. Different interviewees set different interview questions. For the first type of interviewer, the interview mainly focuses on the actual operation process, such as the selection of materials for the production of Lusheng, the production process and other issues. The second class of lusheng playing informants. Face-to-face interviews be conducted, and all interview questions are set according to the research purpose of the dissertation. Researchers need to prepare the questions in advance, and a lot of literature reading is required before preparing the questions, so as to extract more refined questions, so that the answers obtained from the interview can be adopted by researchers.

Observation forms: Observation method is a special method of information collection and verification according to the three objectives of the research. In this research, the investigation method is mainly used to collect and study the production

process of the traditional six-pipe Lusheng. For the second research objective, we need to investigate various materials stored in the location of the Lusheng, such as musical instrument scores and preserved audio-visual materials. Investigate the source and retention of this data. In addition, the spread of Lusheng was investigated by means of investigation. This is a qualitative research. Using the qualitative research method, the instrument, music, method and playing skills of Lusheng are changed. And the effect of music on people is analyzed and guidelines are proposed.

Questionnaire survey method: According to the characteristics of the informant, the respondents were divided into two groups, and the questionnaires is set according to the research objectives. After the questionnaires is set, they were discussed and modified with the supervisor, and the questionnaires were finally determined and distributed to the respondents. These questionnaires are set up according to the concept of quantitative research. The contents of the questionnaires include: evaluating the development of Lusheng, evaluating the number, age and nature of Lusheng instrument makers or wind disseminators. This section uses quantitative research methods such as essay questionnaires or computer-aided interview systems to collect data relevant to the topic. This means using it to measure a variable, or to gather information needed to answer a research question.

2.3 Data Collecting

The researcher collected data through documents analysis and fieldwork. In order to make an in-depth research, researchers refer to literature materials in libraries and cultural centers and use network platforms such as CNKI (China National Knowledge Infrastructure) and other network platforms to complete the documents analysis.

Then the researcher plans to go to the research site (Lei Shan and Dan Zhai county, Guizhou province, China) for fieldwork. The researchers visited the Lusheng production site (interviewee's studio) and record the production process of Lusheng through interviews, observations, audio and video recordings.

In this research, researchers selected the most representative pieces of Lusheng Musical Instruments, which are divided into three categories according to their cultural functions: sacrificial, festival and love, but a small piece of each piece

be selected for analysis. These pieces are widely spread classical pieces and are recognized by scholars and players.

2.4 Date Management

According to the requirements of quantitative research and qualitative research, the collected information is divided into two groups. The corresponding analysis methods are used to analyze and classify the information resources for the research objectives of the dissertation. The information is sorted out and summarized scientifically to make it useful for the research of dissertation materials.

2.5 Data Analysis

For objective 1, the researcher analyzed the making technique by using quantitative research methods and fieldwork data. The researcher went to Lusheng production site (interviewee's studio) for field work and sampling by using the method of observation, and interview my key informants, Mr. Mo Yanxue and Mr. Yang Guotang, to obtain experience and relevant data from them. These data are directly obtained from the hands of national intangible cultural heritage inheritors, and only represent the making method of this inheritor. There may be other making methods. My research provides some ideas and inspiration for future Lusheng researchers.

For objective 2, because the traditional six-pipe Lusheng playing technique is one of the three most important components of this dissertation, through the analysis and research of playing technique, the development of Lusheng playing is explored in a deeper level, and the significance is provided for future researchers. In the future, Lusheng players may create new playing technique or discovery. I selected Musical Instruments and analyze them according to the following topics by interviewing experts.

For objective 3, researchers used literature analysis to collect and organize data. The core of data analysis mainly focuses on the change and development of music culture, and descriptive analysis methods be used in this part. The preservation and inheritance of folk music and Musical Instruments is the inheritance and re-creation of folk music instruments, which has far-reaching significance for future researchers.

2.6 Summary of Chapters

In this dissertation, the researcher presents on 7 chapters:

1) Chapter I: Introduction

2) Chapter II: Review Literature

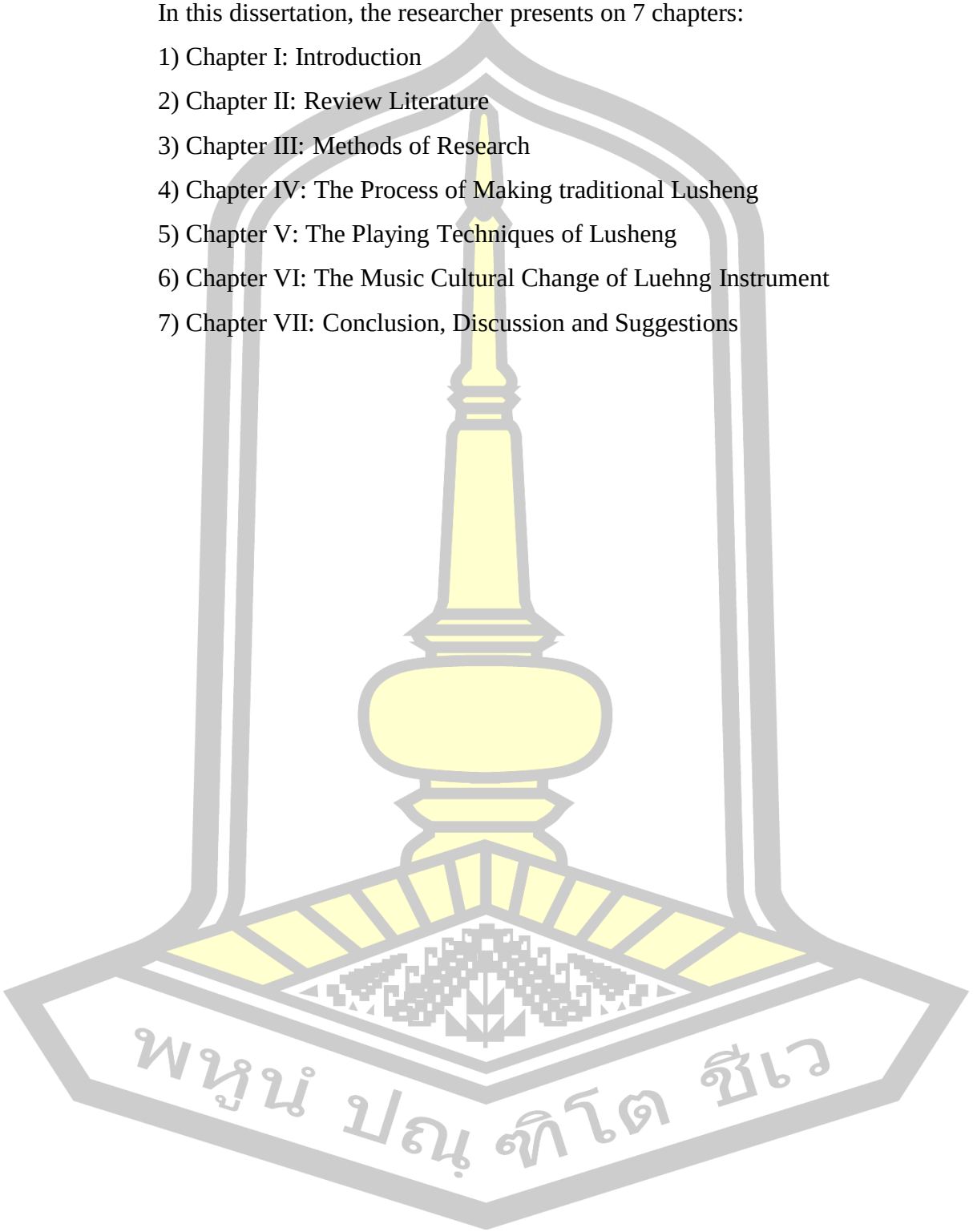
3) Chapter III: Methods of Research

4) Chapter IV: The Process of Making traditional Lusheng

5) Chapter V: The Playing Techniques of Lusheng

6) Chapter VI: The Music Cultural Change of Luehng Instrument

7) Chapter VII: Conclusion, Discussion and Suggestions



CHAPTER IV

The Making Process of traditional Lusheng Musical Instrument

The six-pipe Lusheng musical instrument, a national intangible cultural treasure of China, is produced in Leishan County and Danzhai County, Qiandongnan Region, Guizhou Province, China. This chapter's research topic is the lusheng's production process. The ethnomusicological qualitative research methodology is used in this work. A descriptive-analytical methodology was used to present the data, which were mostly acquired through observation, interviews, and audio and video recordings of fieldwork with key informants. The results show that the production of traditional six-pipe Lusheng instrument is a complicated process. From the selection of materials in the early stage, to the processing and production of Lusheng and the final pitch adjustment, all processes are completed by manual work, and producers are required to have extremely rich production experience, because many steps only have one chance, and once there is a deviation, they need to start over. The production of the traditional six-pipe Lusheng goes through three processes: 1) material preparation, 2) making Lusheng, and 3) pitch adjustment. There are many detailed steps in these three processes. The production process is complicated. From the above information, the researchers are therefore interested in studying the making process to preserve the instrument and provide insights for those interested in studying the instrument further.

The researchers chose hydropower Village in Leishan County in southeastern Guizhou Province and Paiya Village in Danzhai County as the research areas on the theme of Lusheng instrument. Leishan County is the hometown of Lusheng in China, with a long history of Lusheng culture and rich lusheng instrument resources. In addition, the Miao Lusheng culture and Lusheng production skills of Leishan County are the first batch to be included in the national intangible cultural heritage protection project by the government. Danzhai County is also one of the representative areas of Guizhou Lusheng culture, with rich Lusheng instrument resources and a long music history. In 2008, Danzhai County's Lusheng music was included in the national intangible cultural heritage project. Paiya Village in Danzhai County is also known as "the first village of Lusheng in China". The researchers chose key informants as

research clues, Mr. Mo Yanxue and Mr. Yang Guotang. The selection criteria for key informants are:1) He was born and grew up in Leishan or Danzhai County, and is a native.2) He is the inheritor of the national intangible cultural heritage of Lusheng musical instrument. 3) He knows the culture and development of Lusheng instrument.4) He is an excellent maker of lusheng instruments and has been making them for over 40 years. 5) He is the inheritor of Lusheng musical instrument culture.

Mr. Mo Yanxue is the representative inheritor of the first batch of Miao Lusheng production skills under the national intangible cultural heritage project. He was born in a family that has been making lusheng for five generations. Since he was 16 years old, he has followed his father to make lusheng. In the past 47 years, he has never stopped making lusheng. The fifteen pipes of the redwood sheng foot made by him were collected by the Guizhou Literary and Art Association as the top ten folk craft masterpieces. Since 2002, he has won many awards, including "Guizhou Top Ten Folk Craft Masters" and "Guizhou Senior Folk Craftsman".

Yang Guotang, a Miao nationality, was born in Paiya Village, Longquan Town, Danzhai County, Guizhou Province. At the age of 15, he began to learn the playing methods and production techniques of Lusheng. Through diligent study and practice, he has a deep understanding of the folk Lusheng music of Miao nationality and is good at playing the difficult Lusheng music. The Lusheng made by him has fine workmanship and beautiful tone, and its Lusheng products have been purchased by various art colleges in the province as one of the necessary teaching tools. He was invited to participate in the CCTV Spring Festival Gala to play the mang tube Lusheng sacrificial music. In May 2018, Yang Guotang was named the representative inheritor of the national intangible cultural heritage project "Lusheng Music (Miao Nationality Mangtong Lusheng)" by the Ministry of Culture and Tourism. Over the past decades, he has trained players, producers, folk Lusheng performers, etc., and made outstanding contributions to the spread of Miao Lusheng music culture.

In October 2023, the researchers completed the fieldwork, visited the key informant Mr. Mo Yanxue, and recorded the entire production process of the traditional six-pipe Lusheng.

Figure 10. Key informant, Mr. Mo Yanxue

Source: Xu Chang (2023)

Figure 11. Key informant, Mr. Yang Guotang

Source: Xu Chang (2023)

According to the information obtained from Mr. Mo Yanxue, a key informant interviewed in the fieldwork, the production of traditional six-pipe Lusheng can be roughly divided into three steps: 1) material preparation 2) production of Lusheng 3) pitch adjustment. These three processes contain many detailed steps, the production process is complex, and the main use of manual production.

1. Prepare materials

The traditional six-pipe Lusheng is roughly divided into four parts: the sound pipe, the sheng Dou, the copper reed and the resonance pipe. The materials used in each section are different. The sound tube and resonance tube need to use bamboo, the sheng pipe needs to use wood, and the copper reed needs to use copper. Each production material has stood the test of time and been verified by performers to ensure that the finished Lusheng reaches the highest level in terms of musical performance and durability. This exquisite craft tradition has been passed down from generation to generation, maintaining the unique charm and inheritance of Lusheng music culture.

Choose the type of bamboo

Bamboo plays an important role in Chinese history and culture. It is not only a practical plant resource, but also one of the important symbols in Chinese traditional culture. Bamboo is widely used in China. In the field of construction, bamboo is used as a building material, can make bamboo buildings, bamboo Bridges, bamboo fences and so on. In terms of handicrafts, bamboo can be woven into baskets, fans, flutes and so on. Bamboo can also be processed into bamboo charcoal, bamboo vinegar and other products. In addition, bamboo is also an important raw material for making paper.

There are many kinds of bamboo, more than 500 in China alone. Covers all genera in the Asia-Pacific bamboo region. The country's bamboo is divided into four regions: Yellow River - Yangtze River bamboo region, Yangtze River - Nanling bamboo region, South China bamboo region, southwest alpine bamboo region. In addition to Heilongjiang, Jilin, Inner Mongolia, Xinjiang, are distributed. Although there are many kinds of bamboo, there is very little bamboo that can be used to make

high-quality lusheng Musical Instruments. The selection, collection and preservation of bamboo plays an important role in the lusheng's beautiful sound.

Bamboo is the material for making the sound pipe of the Lusheng. Among so many kinds of bamboo, the material that can be used to make the Lusheng is very limited, Flora of Guizhou is the most authoritative book on plant introduction in Guizhou. According to the book, there are 85 types of bamboo in Guizhou Province. However, for the production of Lusheng musical instrument, long bamboo length, thin bamboo diameter, thin bamboo wall and high density are required a specific "white bitter bamboo".(Mr. Mo Yanxue interview) "White bitter bamboo" is also called "umbrella handle bamboo", the bamboo rod is straight and upright, generally can grow to a height of about 4 meters, and the white powdery things are very obvious on the bamboo section. White bitter bamboo is mainly distributed in China's Yangtze River basin, Guizhou, Guangxi and other areas, generally growing on the hillside or plain facing the sun. White bitter bamboo is characterized by thin stems, slender segments and moderate thickness of the inner wall of bamboo. It is an excellent material for making Lusheng generator tubes.

Figure 12. white bitter bamboo
Source: Xu Chang (2023)

When preparing bamboo, it should be noted that the white bitter bamboo is the material for making the Lusheng sound pipe, so the material should be long but not short, so that there is enough length to cut the bamboo when making the Lusheng sound pipe. For ultra-high pitch Lusheng, bamboo length needs to be at least 15cm,

for high pitch Lusheng, bamboo length needs to be at least 31cm, for medium pitch Lusheng, bamboo length needs to be at least 60cm, for low bass Lusheng, bamboo length needs to be at least 110cm, for double bass Lusheng, bamboo length needs to be at least 215cm. Of course, the above data is more accurate, and there is no large length space, once there is a little error in the production, it will lead to material scrap, so it is best to prepare the white bitter bamboo longer than the above data length.

1.1 Choose the type of wood

Through work, it is found that the most selected materials for the production of Lusheng Sheng are Chinese fir, Chinese toon wood and pine wood. Because the playing of Lusheng is generally dancing while blowing, and there are many difficult acrobatic movements in Lusheng dance, the weight of the Lusheng instrument should be light. If the weight is too heavy, the difficult movements cannot be performed. Many years ago, rosewood and sandalwood were also used to make sheng Dou, but because of the high cost, it is slowly disappearing. However, no matter what material is used, the most important requirement is that the pipe cannot be cracked.

Through interviewing Mr. Mo Bianxue, a key informant, I learned that Chinese fir is generally used to make the traditional six-pipe lusheng in southeast Guizhou Province, because Chinese fir is light in weight and not easy to crack after special treatment, and the cost is relatively low. Through the interview with Mr. Yang Guotang, it was learned that the multi-pipe Lusheng Sheng in Qiandongnan area of Guizhou Province mostly uses toon wood, which is heavier in weight and better in quality, and has a beautiful appearance. It is suitable for solo performance, but it is not suitable for playing with too difficult dance.(Mr.Mo Yanxue interview)

1.2 Prepare crafting tools

The production process of the traditional six-tube Lusheng is nearly 30 steps, and the makers of Lusheng need to use a large number of tools to assist the production. According to the description of Mr. Mo Yanxue, a key informant, most of the tools used in the production of Lusheng were handmade by him or handed down by his father, and in the long career of Lusheng production, the tools used have been changing, they may become more convenient and more suitable for producers, or they may become more intelligent and add electric tools. Because of this characteristic, the tools and steps used by each Lusheng maker are different, and there is no unified

standard. The following are the tools and photos needed to make the main traditional six-pipe lusheng.

Figure 13. Cutting machine

Source: Xu Chang (2023)

The picture above is a cutting machine, the main purpose is to divide the material into the size desired by the Lusheng maker. For example, in the production of Sheng Dou, the producer cuts the whole piece of fir wood into small pieces of wood suitable for Sheng Dou. When making resonance tubes, a cutting machine can be used to cut the bamboo into a length suitable for making resonance tubes.

Figure 14. (Kan Dao) Machete

Source: Xu Chang (2023)

The main use of the machete is to cut the wood into the shape needed by the Lusheng maker, which is particularly important in the production of Sheng dou. Makers need to use a machete to cut the fir wood into the right size spindle shape.

Figure 15. Furnace

Source: Xu Chang (2023)

The furnace is a very important tool in the production of lusheng, and the main use of the furnace is heating. For example, when making a Lusheng sound pipe, the bamboo section in the middle of the bamboo is heated. After heating, the bamboo section becomes soft, and the shape of the bamboo can be easily changed and the bamboo becomes straighter. At the same time, the stove can also heat iron rods, which can be used to break through the bamboo joints.

Figure 16. Tree pier

Source: Xu Chang (2023)

The function of the stump is to change the bending degree of the heated bamboo by pressing on the stump.

Figure 17. (Tie Bang) Iron bar

Source: Xu Chang (2023)

Above are iron rods of different thicknesses. The purpose of the rods is to burn them red and break through the center of the bamboo. The bamboo that is broken through can be used to make sound tubes.

Figure 18. Threaded iron bar

Source: Xu Chang (2023)

The threaded iron bar is the most important tool to open the sound Dou. After the threaded iron rod is burned red, it is inserted into the inside of the wood pipe, and the inside of the pipe is gradually emptied.

Figure 19. Small chisel

Source: Xu Chang (2023)

The purpose of the small chisel is to separate the smelted copper reed from the spring tongue and spring frame.

Figure 20. Tuner

Source: Xu Chang (2023)

The tuner is a calibration machine to determine whether the pitch of the copper reed is accurate, and is used when the pitch is adjusted after the copper reed is made.

2. The making of Lusheng

Making Lusheng is a complicated work. According to preliminary statistics, there are 23 steps (Table 1), and the production process is complex.

Table 1. The whole making process and tools of traditional Lusheng

Processes	Detailed steps	Tools
Bamboo processing	1.Cut bamboo	Lian Dao (Sickle)
	2.Wash bamboo	Lu Hui (Stove ash)
	3.Storage bamboo	Stash
Production of sound pipes	1.Choose bamboo	Ka Chi (calliper)
	2.Straightening bamboo	The furnace, the tree pier
	3.Break through a bamboo knot	Tie Bnag (Iron bar)
Production of Sheng Dou	1.Preliminary setting	Kan Dao (chopper)
	2.Get through the sheng Dou	A threaded iron bar
	3.Positioning the sound pipe opening	Hexagonal mold
	4.Chiseling hole	Yuan Mu Cuo (Round wood file)
	5.Revise and polish the Sheng Dou again	Scraper, sandpaper
	6.Painting Sheng Dou	Varnish, tung oil
Copper reed production	1.Clean impurities from the crucible	detergent
	2.Smelting copper material	Coarse charcoal, crucible
	3.Striking copper material	Hammer
	4.Cutting copper reed	Xiao Zao Dao (Small chisel)
	5.Adjusting the pitch of the reed	tuner
Resonant tube production	1.Cutting bamboo pipes	cutting machine
	2.Adjusting the resonance tube	tape measure
assemble	1.Grooving of sound pipes	knife
	2.Install the reed	adhesive
Processes		

	Detailed steps	Tools
	3.Install the sound pipe to the Sheng Dou	None
	4.Drill sound hole	Burning Red Iron Rod

Source: Xu Chang

Bamboo processing

1. Cut bamboo

According to the description of Mr. Mo Yanxue, a key informant, the selection of materials for the production of the traditional six-tube Lusheng sound tube is very strict. First of all, we must choose the white bitter bamboo with a growth cycle of more than three years, if the bamboo growth time is too short, the bamboo is immature, not easy to be firm, and it is easy to crack after making a Lusheng instrument. The felling time of white bitter bamboo is very sophisticated, and it must be before the beginning of autumn in the Chinese lunar calendar to the fifteenth day of the first month of the Chinese Lunar New Year. During this period of time, the white bitter bamboo needed for cutting the Lusheng sound pipe is crisp, highly mature and insect-free. However, if the time passes after the 15th day of the first month of the Chinese lunar calendar, when the earth and earth atmosphere rise, water will appear in the bamboo. Even if the bamboo instrument is cut down and made into a lusheng instrument, the bamboo will have insects, and the lusheng produced will be unqualified. (Mr. MO Yanxue interview) When cutting down the white bitter bamboo, only the top part near the bamboo tip is taken, and the rest of the thicker part is not suitable for use as the sound pipe of the lusheng.

2. Wash bamboo

Before cleaning the bamboo, it is first necessary to strictly screen the bamboo and identify whether the bamboo is suitable for making the sound pipe of the lusheng by the sound made by the bamboo on the ground. If the knock produces a "Dangdang" crisp sound, it proves that this material can be used as a Lusheng sound pipe. However, if the knock produces a "bang bang bang" sound, this material cannot be used as a sound control material. Because the hollow in the middle of the first kind of bamboo is larger, the maturity is high, and the air flow is smoother through the second kind of bamboo, the center gap is small, and the air circulation is not good.

After selecting the suitable material, it can be cleaned. Mr. Mo has his own exclusive cleaning method, using the ash left after the fire burns in the kitchen, repeatedly cleaning the selected white bitter bamboo in the river, while cleaning while beating in the water, after repeated cleaning of the white bitter bamboo is very clean and bright, is the production of Lusheng sound pipe quality materials.(Mr. Mo Yanxue interview)

3. Storage bamboo

The storage of white bitter bamboo cannot be directly irradiated in the sun, the sound tube made of sun-dried bamboo is easy to crack in the later stage, so it is necessary to find a separate room without sun irradiation and ventilation. After more than half a year of storage of bamboo, the moisture will evaporate and the bamboo will be thoroughly dried. During storage, the bamboo needs to be inspected regularly for cracks or damage. (Mr.Yang Guotang interview)

Figure 21. Bamboo storage room

Source: Xu Chang (2023)

Production of sound pipes

The sound pipe of the traditional six-pipe Lusheng is made of six bamboo pipes of different lengths. Each sound pipe is equipped with a rectangular copper reed in the place where the sheng pipe is placed. A circular hole is opened near the sheng pipe, called the sound hole, and the gas blown by the player is driven by the fingers to vibrate the copper reed and make sound. The upper end of the pipe is transparent, and the lower end of the pipe is blocked.

4. Choose bamboo

Material selection is the first step of sound control, is a crucial step, only by choosing the right material, in order to give full play to the characteristics of the material, the production of excellent Musical Instruments. After more than half a year of storage of bamboo, some will appear cracks, deformation or mold, after careful selection, pick out the good bamboo. When choosing the right bamboo, it is also necessary to see whether the inner wall of the bamboo is circular, and the diameter of the material is 1-1.3 cm, the upper and lower ends of the bamboo are not the same thick, the density of the bamboo should be large, and the bamboo cannot be selected too light.

5. Straightening bamboo

Due to the natural growth of bamboo, it is impossible to be completely straight, and the maker needs to straighten the bamboo by hand. The benefits of straightening bamboo are as follows: 1) the air flow in the bamboo tube is smoother 2) the six sound tubes are arranged neatly between each other and do not collide 3) it is visually beautiful.

It is necessary to use the stove to heat the bend of the bamboo, but under normal circumstances, the bamboo section is heated, which can use high temperature to discharge the water in the bamboo section, but also to complete the carbonization of the bamboo inside, which is not easy to suffer from insects. After heating, the Lusheng maker uses the roots to straighten the bamboo repeatedly and watches with his eyes. This process needs to be repeated several times until the bamboo is straight.

Figure 22. Straightening bamboo

Source: Xu Chang (2023)

6. Break through a bamboo knot

Bamboo is used as a sound tube, which requires air to flow into and through the copper reed to produce sound. However, because the bamboo joints are in a closed state, the Lusheng maker needs to open the bamboo joints and make the inside of the bamboo larger to achieve smooth. The material used is an iron rod. The following photo is the key informant Mr. Mo Yan Xue used to break through different sizes of bamboo rods.

The iron rod will be burned red, through the bamboo hole, force through the bamboo, after many repeated, a number of bamboo joints are opened. The use of red-hot iron rods to penetrate the bamboo has two functions: the first is to open up the closed part of the bamboo joint, and the second is to carbonize the sound inside the bamboo pipe with the help of the hot iron rod, which can avoid the inside of the bamboo pipe and the copper reed of the sound from being eaten by insects, and extend the life of the pipe. Mr. Mo Yanxue, a key informant, reminded that when opening up the bamboo, we must have enough experience, and the Angle and strength of inserting the red iron rod are particularly important. Some Lusheng producers inserted the strength too small, and only opened a part of the bamboo, which eventually led to the sound of the lusheng being very small and the sound played was not good.(Mr.Mo Yanxue interview)

The traditional six-pipe Lusheng is divided into five types, the pitch from low to high are: double bass Lusheng, bass Lusheng, alto Lusheng, treble Lusheng, ultra-treble Lusheng. In addition to the difference in the size of each component, the six sounds emitted are: la, do, re, mi, sol, la (but the pitch of each reed wind instrument is different). The production method is the same, but the size is different. The following table shows the length comparison of different sizes of Lusheng sound pipes.

Table 2. The length comparison of different sizes of Lusheng sound pipes.

Types of Lusheng	Length of sound tube (cm)					
	la	do	re	mi	sol	la
Ultra-treble	14.8	12.8	11	9.2	8.0	7.3
Treble	30.0	25.3	22.0	18.0	16.0	14.5
Alto	58.3	49.2	43.4	39.2	34.5	30.0
Bass	105.5	97.8	86.0	77.0	68.0	58.5
Double bass	211.0	193.0	169.0	150.0	133.0	105.0

Source: Xu Chang

Production of Sheng Dou

Sheng Dou is also called Lusheng air box or resonant sound box, the thinner part of the Sheng dou is installed in a long bamboo tube as the mouthpiece of the Lusheng, and the other side is where the sound tube is inserted. The size of the Sheng dou ranges from 46 to 56 cm. Below is a finished Sheng Dou.

Figure 23. Sheng Dou

Source: Xu Chang (2023)

7. Preliminary setting

Mr. Mo Yianxue, the key informant, used Chinese fir trees more than ten years old to make Sheng Dou, and the older the tree, the more beautiful the wood. The advantages of fir are: light weight, the surface of the wood is fine and smooth, the texture is straight, the wood is soft and there is no scar. The sheng dou made of Chinese fir is more aesthetic, and the material is strong, which is not easy to crack after moisture.

Production with a machete will have been cut rectangular fir, slowly cut into a spindle shape, the general size of 46 to 56 cm, 4-9 cm wide, 3.5-8 cm high. When cutting, pay attention to it, it must be modified while cutting, because if you cut too much, the wood can no longer be used, which is a great test of the experience of the producer. (Mr. Mo Yanxue interview) Below is a picture of the machete used for cutting.

Figure 24. Preliminary setting

Source: Xu Chang (2023)

8. Get through the Sheng Dou

As the sound box of Lusheng musical instrument, Sheng Dou needs to be made hollow. But this one step alone makes a big difference. Key informant Mr. Mo Yanxue said: as the fourth generation of Lusheng production, his ancestors have always used this exclusive secret to make. Because many Lusheng makers divide the sheng dou into two parts, cutting the whole piece of fir wood into two fan-shaped models, digging the air space and digging out the airway, and then using the hoop made of bark to join the two parts. However, the disadvantage of this production is that because the air box is not formed in one body, it is combined, and over time, it is easy to leak the air box.

Key informants Mo Yanxue put the iron rod with thread into the fire to heat, with a red iron rod to open the sheng dou. It should be noted that the use of iron rods needs to be from thin to thick, not to use a thicker iron rod for the first time, so that not only the fire wood cannot be hit, but also a waste of time, the material blocking the bottom of the Sheng dou and the wood used in the Sheng Dou are fir, the production process is similar to Sheng Dou, a piece of wood is cut first, then whitted and then ground, because the required volume is not large, only the front end of the wood

Insert the pipe into the round hole at the bottom of the pipe, drop strong glue around the round hole, and then cut it with a saw, and cut off the excess part according to the shape of the round hole. With the passage of time and the progress of

science and technology, electric hand drills are now also used to break through the Sheng fight. The advantage is the increase in efficiency, the hot iron rod takes 20 minutes to open a pipe, but the use of electric drill to open two minutes is enough. Below is the drill that breaks through the pipe (Mr. Mo Yanxue interview)

Figure 25. Get through the Sheng Dou

Source: Xu Chang (2023)

9. Positioning the sound pipe opening

Making sheng dou not only requires good carpentry skills, but also vision is very important. After drawing the line, the hexagonal mold is drawn to select the appropriate drilling position, and the mold is accurately nailed to the wood to determine the position of the sound tube for the traditional six-tube Lusheng pipe. The opening of the traditional six-tube Lusheng sound tube is divided into two rows, with three round holes on each side.

10. Chiseling hole

After positioning on the Sheng Dou, a pointed iron rod is used to cut through the holes at a certain Angle. Then use a round wood file to expand the size of the opening on the pipe according to the thickness of the different sound pipes. The size of the opening is not the same, and experience is very important at this time. Mr. Mo Yanxue said: manual drilling can only drill six holes a day, that is, you can only drill a Lusheng Sheng dou hole a day, and it requires quite rich experience, strength and skills. But now you can use a hand drill, which is much more efficient. Below is the round wood file.

Figure 26. The round wood files

Source: Xu Chang (2023)

Complete the opening as shown in the following figure

Figure 27. The round wood files

Source: Xu Chang (2023)

11. Revise and polish the Sheng Dou again

At this time, the prototype of the Lusheng Sheng Dou has been basically completed, but the surface of the sheng dou is still rough. Use a scraper to smooth the surface of the Lusheng, and sand the surface of the sheng again with sandpaper after no pits can be seen from all angles. The polished Sheng dou is very bright and without defects. The following picture shows the scraper used to modify and polish the sheng dou.

Figure 28. Scraper

Source: Xu Chang (2023)

12. Painting Sheng Dou

The polished Sheng dou is painted with varnish or tung oil on the surface. After being painted, the wood lines are clearly visible and the appearance is beautiful and generous. The finished Lusheng is generally light yellow, so the Miao Lusheng generally enjoys the reputation of "golden Lusheng" and constitutes a perfect handicraft.

The following table is the difference in the size of the five types of lusheng Sheng dou.

Table 3. The difference in the size of the five types of lusheng Sheng dou.

Types of Lusheng	Sheng dou Size（Cm）		
	Length	Width	Height
Ultra-treble	46.5	4.0	3.5
Treble	48.8	5.0	4.0
Alto	50.0	7.0	4.5
Bass	53.5	7.8	5.5
Double bass	56.0	9.0	7.9

Source: Xu Chang

Copper reed production

The sound principle of Lusheng is similar to that of the western harmonica, in that the air flow makes sound through the vibrating reed. Therefore, the sensitivity

and responsiveness of the reed are crucial, which is also a decisive factor in judging the quality of the reed and even the quality of this Lusheng instrument. Excellent copper reeds respond quickly to the player's exhalation or inhalation and produce clear, accurate notes. The player can control the vibration of the reed by adjusting the strength, speed and pressure of the air flow to achieve dynamic blowing and musical expression. To sum up, the quality of the copper reed is very important.

13. Clean impurities from the crucible

To make a good copper reed, it is necessary for the Lusheng producer to smelt his own raw materials. In the process of copper smelting, the raw material is often crushed and soaked to extract the metal copper in it. The soaked ore is then placed in a crucible and heated to high temperatures. At high temperatures, copper ore slowly melts and separates from other impurities to form pure copper material, a process known as copper smelting.

The crucible is a vessel for copper smelting, which has good high temperature resistance to withstand high temperatures and chemical reactions in the smelting process. Cleaning the crucible magazine requires five steps: 1) Cool the crucible, and ensure that the crucible has been completely cooled before cleaning. 2) Remove the residue and gently scrape the impurities remaining in the crucible with a scraper. 3) Clean the crucible, using detergent and warm water, thoroughly clean the crucible, you can gently scrub the inner and outer walls of the crucible with a brush or sponge to remove stubborn dirt, ensure that the detergent used is harmless to the crucible material, avoid the use of too aggressive chemicals. 4) Rinse the crucible, fully rinse with clean water to ensure that cleaning agents and impurities are completely removed. 5) Dry the crucible, place the crucible in a ventilated place to dry it thoroughly.

14. Smelting copper material

Making copper reeds requires relatively stable temperature and humidity, so producers generally choose to do this work in the morning.

The combustion materials used in burning smelting copper reed need to use wool carbon, that is, charcoal burned from miscellaneous wood, and coal cannot be used, because coal firepower is too strong. The copper needed for the production of the reed and the raw materials of the copper reed that failed to be made before are put

into the crucible for melting, and then poured into the prepared mold. Soon, the copper block of about 15cm, about 10cm wide and about 1cm thick will condense and grow. After the copper sheet is red, and then take out the hammer to knock thin to change the shape, and then quenching, this process needs to be repeated at least three to four times, and the more percussion, the better the quality of the reed, the crisper the sound.

15. Striking copper material

The burning material used in copper is preferably chestnut charcoal, which can accurately grasp the size and temperature of the fire. Until the copper reed is heated until it is not red or black, the copper reed color is too red and easy to melt, and the color is too black, it is very easy to break. The thickness of the copper should be made according to the level of the sound, and then the quenching should be repeated. Higher pitched reeds require thinner copper reeds, and lower pitched reeds require thicker copper. This process tests the skill and rich experience of the producer.

16. Cutting copper reed

After smelting copper material is completed, it is necessary to cut the copper reed, and the thickness, width and size of the copper cut are determined according to the pitch that the reed needs to emit. The reed thickness of the larger lusheng is generally between 0.3 and 2.5 mm. The thinnest cannot be thinner than 0.3 mm. The longest copper reed can reach 14-15 cm, and the shortest one is less than 1 cm.

After the reed material is made, draw the outline of the reed tongue, and use the small chisel as shown in the picture below to cut through the reed tongue.

Figure 29. Cutting copper reed

Source: Xu Chang (2023)

After the chiseling is completed, the chiseled copper reed is heated in the furnace, and the reed tongue is broken apart by hand in the opposite direction, and then calcined in the fire, and then quenched and shaped in water. This process needs to be repeated several times before the reed tongue is restored to its shape.

Use a hot iron rod to narrow the gap between the reed frame and the reed tongue, and then calcined and quenched again. Finally, the prototype of the reed is completed, as shown below. This reed, which has been backed by fire, is very labor-saving when played.

Figure 30. Cutting copper reed

Source: Xu Chang (2023)

When making reed, it is required to observe whether the gap between the reed tongue and the reed frame is just right, and it is also necessary to constantly correct the thickness of the reed according to the pitch, and adjust it while listening. A good copper reed has a very good advantage in the number of vibrations and has a very high sensitivity, which requires decades of experience accumulated by the manufacturer. On the contrary, the reed made by inexperienced Lusheng producers has low sensitivity and fewer vibration times in the same time, so it is difficult to play and there is a big difference in sound timbre. (Mr. Mo Yanxue interview)

17. Adjusting the pitch of the reed

Adjusting the pitch of the reed is a key technology, which plays a vital role in the manufacture of lusheng. Adjusting the pitch of the reed generally requires two steps, the first step is that the producer first uses the ear to hear whether the reed is roughly accurate. The second part uses a tuner, as shown below.

Figure 31. Adjusting the pitch of the reed

Source: Xu Chang (2023)

The main way of tuning is to scrape the edge of the reed tongue, and play the reed tongue, listen to the pitch emitted by its vibration, and test the standard tone to compare whether the pitch of the two tones is consistent. However, this step can only roughly determine the pitch of the reed, and a tuner is needed for more subtle ones. After the reed sounds, the tuner can accurately measure the vibration frequency of the reed. The higher the frequency, the higher the pitch, the lower the vibration frequency and the lower the pitch. Adjust with the value of the tuner. At this time, the adjustment is fine tuning, and the spring tongue needs to be filed with a small file to achieve the purpose of fine tuning the pitch.

Resonant tube production

The resonator tube is a bamboo tube installed at the end of the sound tube, and its function is to enlarge the sound. Similar to the horn at the top of the suona, as shown below.

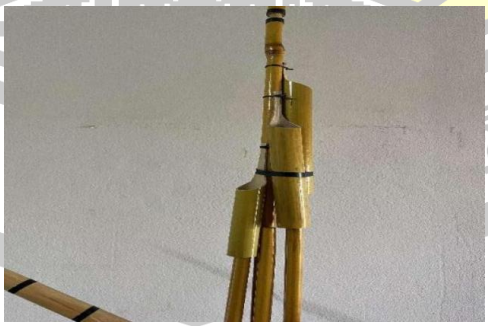


Figure 32. Resonant tube production

Source: Xu Chang (2023)

18. Cutting bamboo pipes

First, select three pieces of bamboo with the same material and slightly inner diameter as the Lusheng Sheng pipe, use the steel bar to stamp through the bamboo joints inside the bamboo, and use the cutting machine to cut out the bamboo pipe with a length of about 23 cm. Cutting machine as shown below.

Figure 33. Cutting bamboo pipes

Source: Xu Chang (2023)

19. Adjusting the resonance tube

According to the scale on the tape measure, the bamboo was cut, and the producer deliberately relaxed the length when intercepting, leaving room for subsequent minor adjustments. According to Mo, a traditional six-pipe Lusheng needs three resonating tubes, namely the second tone do, the third tone re and the last tone la. The appearance and shape of the three resonance cylinders are not the same, their shapes are respectively sharp knife and flat, sharp knife and flat, the role of the same, the shape of the different is mainly for beauty. After the resonator was completed, the producer placed three resonator tubes on the outside of the sound tube and tied them with plastic cable ties.

As Guizhou Province of China is a mountainous area with complex and changeable terrain and numerous mountains, the significance of the birth of the traditional six-pipe Lusheng resonance tube is to expand the volume and improve the penetration, so as to better spread the sound further and let people at a distance hear the Lusheng's sound.(Mr.Yang Guotang interview)

20. Grooving of sound pipes

The purpose of grooving on the sound tube is to load the copper reed, this step is very testing the producer's technology and experience, because there is only one chance, if the grooving is too large, the whole sound tube needs to be remade.

First of all, according to the length, width and thickness of the reed, determine the specific position of the groove on the Lusheng sound pipe, and cut down a groove of about 2 mm with a knife, which is generally equivalent to half the thickness of the bamboo wall of the sound pipe. The photo below shows the lusheng maker making grooves.

Figure 34. Grooving of sound pipes

Source: Xu Chang (2023)

After the grooving is finished, scrape the surface of the groove back and forth with a knife to smooth the surface of the groove. Cut a gap again at the center of the groove, and the size of the gap should be the same as the size of the spring tongue, which is conducive to the vibration of the reed. Then using a long, thin brush, Go deep into the bamboo pipe to clean up the excess bamboo debris, and then cut a gap parallel to the surface of the slot with a knife at the upper and lower ends of the slot, which is to jam the copper reed. The depth and width of the gap should be consistent with the size of the reed, and it should be just right, otherwise the reed card instability will affect the sound of the Lusheng.

21. Install the reed

First, the copper reed made in advance is stuck in the gap, and the spring tongue is just located in the opening position of the groove, and then the adhesive is

applied to the connection of the reed and the spring groove to ensure that there is no air leakage between the reed and the spring groove. After installation, the producer will try to blow the reed to see if there is air leakage and listen to the sound.

22. Install the sound pipe to the Sheng Dou

The position of the hole has been determined before Sheng Dou is painted. After emptying Sheng Dou, the hole can be continued. The producer further expands the hole distance at the opening position determined before so as to insert the sound tube. Since Sheng Dou is spindle shaped and has a small force area, it is not convenient to hold. Insert chopsticks into the other holes when drilling, hold the chopsticks tightly with the whole palm to fix the sheng bucket, and drill holes one by one. The holes on the sound tube and Sheng Dou must be completely chimeric. If the hole spacing is too large, there may be air leakage after the sound tube is inserted. In order to avoid this situation, the producer inserts the sound tube from bottom to bottom while drilling.

The sound pipe installed with copper reed is fixed on the sheng bucket in turn, fixed without using any adhesive, and the position of the reed is just within the sheng bucket. The sheng pipe equipped with the sound tube is very tight and will not produce any air leakage when playing. Since ancient times, the playing of Lusheng is generally accompanied by dancing, while blowing and dancing. If the installation is not good in the connection, the sound will be slower, resulting in the incongruous dance pace and music that looks very awkward and ugly.

23. Drill sound hole

After the sound tube is combined with the sheng pipe, the sound hole is cut according to the size of the lusheng. By holding down the voice hole, the player blows air into the pipe, and the air blows through the reed in the pipe to make a sound. If you do not press the sound hole, even if you blow air into the blow pipe, the air will not penetrate, and the effect of blowing the reed will not be produced.

The position of the perforation hole should be above the sheng dou and close to the sheng dou, as shown in the following figure.

Figure 35. Drill sound hole

Source: Xu Chang (2023)

Close to the sheng dou is to make it easier for the fingers to press the sound hole, if the sheng dou is too far away, the fingers are inconvenient to press. The drilling must be accurate and the hand should be steady, and the iron rod should be red in the charcoal fire to drill the hole. In this way, the pores drilled out will not be moldy, and the intonation is very stable, and the sound can be sequenced every year. After the drilling is completed, some residue can be patted out by hand, or the residue can be discharged by blowing the sound tube. (Mr. Mo Yanxue interview)

3. Adjust the pitch

The pitch of the Lusheng instrument needs to be adjusted in two cases. The first case is when the Lusheng instrument is made, it needs to adjust the pitch of the copper reed made for the first time to the exact pitch; the second case is when the Lusheng instrument has been used for a period of time, the pitch of the copper reed is covered with dust and saliva, and when the Lusheng instrument needs maintenance, the pitch of the sounding copper reed needs to be removed and adjusted. In the production and maintenance of the lusheng, adjusting the pitch is one of the most difficult work, which not only requires the producer to have a very rich experience in judging the level of the sound, but also needs to make corresponding measures, that is, using a knife to scrape the top or bottom of the reed.

The basic logic of adjusting pitch is: when the pitch is lower than the standard tone, polish the top of the reed with a file to reduce the weight of the top of the reed and raise the pitch. When the pitch is higher than the standard pitch, sand the bottom

of the copper reed with a file so that the bottom weight is reduced and the pitch is lowered.

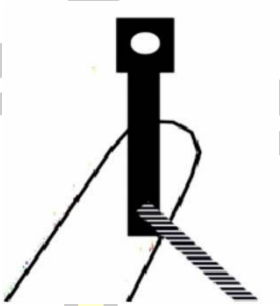


Figure 36. File grinds the top of the reed

Source: Xu Chang (2023)

As shown in the figure above, it is necessary to polish the top of the reed when the pitch is low.

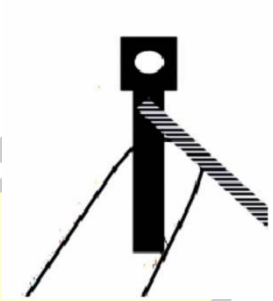


Figure 37. File burnish the bottom of the reed

Source: Xu Chang (2023)

The lower end of the reed needs to be polished when the pitch is high.

Tuning is not only to carefully polish the top or bottom of the reed, but also to understand the direction of the grinding, although no matter which direction of the grinding reed can achieve the same purpose, but if the direction is not correct, it is possible to make the reed break in advance; Generally speaking, when the reed is made for the first time, the metal surface will have a transverse grain that is not easy to detect, so when we grind the reed, we must not grind it with the transverse grain, which will only cause the reed to be unable to withstand repeated long-term stress effects, and finally lead to early fracture. The correct approach should be to avoid the transverse grain, or use another point grinding method, not only without damaging the

physical properties of the reed, but also to strengthen the strength of the reed to withstand the stress.

To sum up, the production of traditional six-tube lusheng is divided into three major steps: material selection, lusheng production and pitch adjustment, including 23 minor steps. These processes require the Lusheng maker to be a craftsman with many skills, from observing raw materials to making materials and even copper smelting. These skills require years of practice, forming their own experience of the Lusheng maker, and this experience is not recorded in books, but is passed on by the inheritors. For example, the researcher interviewed the key informant Mr. Mo Yanxue, who is the fourth generation of Lusheng instrument maker in his family and is 72 years old this year. The information obtained from the interview is handed down by his ancestors. His son, daughter-in-law, two daughters and a son-in-law are also engaged in Lusheng production, and they continue to pass on these experiences. It is hoped that this research will provide some help and guidance to the researchers who make Lusheng later.

4. Maintenance of Lusheng instrument

Since the Lusheng is made of bamboo, wood, copper, etc., and is often played by mouth, the Lusheng instrument needs proper maintenance and protection, which can extend the service life of the instrument. After an interview with a key informant, there are generally four ways to maintain a Lusheng instrument.

1. Prevent oxidation

The reed is the most important component to make the Lusheng sound, so the most important thing for the maintenance of the reed is to protect the reed. The reed is made of copper, which is very easy to oxidize. Therefore, the reed should be kept away from sulfur smoke when placed, which can effectively prevent the reed from being oxidized.

2. Prevent insects from eating

The sound pipe of the Lusheng is made of bamboo, which is easy to be eaten by insects or small hornets. Therefore, if the Lusheng is not used for a long time, the mouthpiece and sound hole should be sealed with wood or plastic film to prevent insects from drilling in and causing damage to the Lusheng.

3. Anti-cracking and anti-corrosion

The sound pipe of Lusheng is made of Chinese fir. If it is placed in a dry environment, it is easy to crack, and if it is too wet, the Chinese fir is easy to corrode. Therefore, the Lusheng instrument should be placed in a proper temperature, proper humidity and ventilation place to prevent the Lusheng instrument from cracking and corrosion.

4, disinfection and deodorization

There are some customs in some Miao areas, for example, after the annual Lusheng party, the Lusheng is sealed up and can only be opened and played again after the harvest in the following autumn. Many people often use a Lusheng instrument when playing, so before these lusheng are used together, people use water and alcohol disinfection, which can remove the virus, remove the odor and prevent the effect of disease transmission.

Conclusion

The production process of Lusheng is divided into three major processes: preparing materials, making Lusheng and adjusting pitch. There are many detailed steps in each process. The production process requires about 23 steps. This chapter research the production of the most commonly used traditional six-pipe Lusheng product category, the entire Lusheng instrument production process is based on the interview with key informant Mo Yanxue. Making Lusheng instrument requires skillful operation by hand. You can't do it without decades of production experience. Now only the inheritors can do it well. The quality of each process will ultimately affect the quality and timbre of the Lusheng instrument. Therefore, every process must be carried out in strict accordance with the standards. So you can make high quality instruments.

CHAPTER V

The Playing Techniques of Lusheng Instrument in Guizhou Province, China

In this chapter, researchers use literature analysis and practice to analyze the solo performance techniques of the Lusheng instrument. The research in this chapter is divided into two parts. The first part is the exploration of the basic technique of Lusheng. According to the summary of the interview materials in the fieldwork, 16 playing techniques are listed. The second part is the study of Lusheng music. According to the performance level of the Lusheng players and the recognition of authoritative experts, the playing technique is divided into three levels; 1) basic techniques, 2) intermediate techniques, 3) advance techniques. The researchers found some representative works of the Lusheng and analyzed the playing techniques of the lusheng combined with the works.

1. Basic technique of Lusheng

1.1 Holding Lusheng instrument

1.2 Breathe

1.3 Fingers

1.4 In-mouth technique

1.5 16 playing techniques

2. Works

2.1 Basic technique works:

1) "Hua Chang"(2)

2) "Migration Suite Cross-River Tune"(3)

The above two works were recommended by key informants during fieldwork. are very famous works of six-pipes Lusheng, and also works for beginners to learn? The playing techniques of the two works are all basic techniques, emphasizing basic techniques. The length of the two pieces of music is not long, but it needs the performer to practice for a period of time and have a skilled grasp of the breath and grasp

the correct breath method before they can skillfully play. In the classification of grades, it belongs to the primary level. Generally, you can play it after 1-2 years of study.

2.2 Intermediate technique works :

"Lahu Hulusheng Dance"

"Dragon and Phoenix Becoming Lucky"

Both of the above two works have certain difficulties, emphasizing the application of playing techniques and musical sense. Key informant Gu Yedong said, in the first work, there are a lot of single-voiced and decorative sounds. In addition, in the second work, there are a lot of repeated passages, and some special techniques such as tongue-calling, harmony, tongue-painting, sliding and Dayin. These two pieces are longer and have more complex techniques than the original pieces. The music has a very strong fast and slow change that is, there are different passages, and the speed change is very obvious. Before playing, players should not only master the basic skills of Lusheng, but also have a long time of practice accumulation, so that they can play this difficult music skillfully. Generally, you can play it after 3-4 years of study.

2.3 Advance technique works:

"Playing Lusheng and Singing Harvest"

"Miao Ling connects with Beijing"

The above two works are quite difficult. The informant mentioned these two pieces during fieldwork, there are a lot of fast sixteenth notes in the first work, which requires very high breath and fingers of the player, and relatively few people can use this technology. The second piece of music is also very difficult. It covers most of the playing techniques of Lusheng instruments. It is impossible to complete the performance of this piece of music without excellent basic techniques, so technical proficiency is very important for the success of this piece of music. Compared with intermediate difficult music, this kind of difficult music not only has more difficult technique and faster speed, but also requires the player to have a higher level of music perception ability, have years of practice on the Lusheng instrument, superb playing skills, faster speed, and more skillful coordination between fingers and mouth. Generally, you can play after studying for 8-9 years.

The Playing Techniques of Traditional six pipe Lusheng musical instrument

Lusheng is the oldest, most characteristic and most representative national wind instrument in China. After thousands of years of development, the performance technology is becoming more and more perfect. From some ancient frescoes and historical records, we know that ancient performances and today's performances are very similar in appearance and form, but the performance techniques are far less rich. The playing technique of Lusheng has been well developed in modern times. In addition to some traditional works and techniques, in recent years, many famous composers have also created many excellent new works for solo, ensemble and orchestral instruments, which have greatly enriched the playing techniques and expression forms of Lusheng instruments. Lusheng is not only a Chinese musical instrument, it has also entered the world stage and has been greatly developed. There are many playing techniques of Lusheng, which are summarized and sorted out by the researchers.

The picture below is the picture of holding traditional six-pipe Lusheng and the location of the six sound holes.

Figure 38. Hand-held pictures of Lusheng from different angles

Source: Xu Chang (2023)

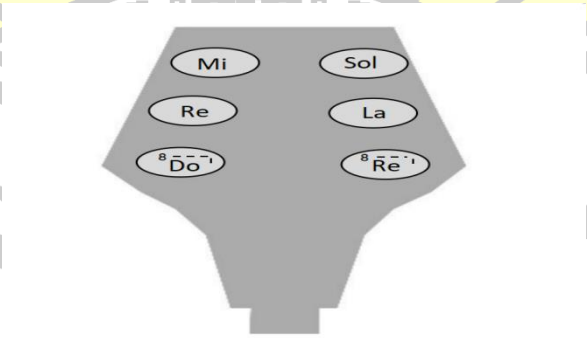


Figure 39. Sound hole diagram of six-pipe Lusheng

Source: Xu Chang (2023)

How does playing technique come about? Generally speaking, the playing skill of a musician is a complex, composed of many parts of psychological and physiological factors, which requires scientific, systematic and standardized training. For Lusheng instruments, playing techniques include three important parts: breathing, fingers and oral techniques. The techniques of these three parts work together and are shown in practice. Is indivisible. If the performer wants to use it flexibly, he must first carry out targeted and effective training, and finally integrate it into the performance naturally, otherwise he cannot reach a high level. High quality performance.

1. Breathe

The reason why can produce different sounds is that players flexibly use different forces of breath to impact the reed, so that the reed vibrates and produces a sound. Lusheng performer, therefore, the gas techniques directly affect the lusheng playing quality, only to master the correct gas method, achieve gas from as a smooth ride degree, can fully show reveal lusheng play wonderful. On the exhale, players will straight, chest containing live mouthpiece, relax the whole body muscle at the same time, the lower abdomen sniff to live, it is will form the spewing up breath, attention should be paid to control living atmosphere, make the breath to line out jet type, until he breath with. Many people are learning how to play the lusang. When they are blowing air, their lips will bulge . This is not right. The correct way is to recycle a little. When inhaling, the way is basically the same as breathing, but special note means to recycle the breath to the abdomen as much as . Whether inhaling or exhaling, it is required that the cheek maintain a natural state, and use the abdomen to control the flow of breath.

The performance of the Lusheng is largely determined by respiration. Breathing is related to the timbre of the performance. The continuity of the phrase, the integrity of the music performance and so on. Therefore, for players, practicing solid basic breathing techniques is the most basic foundation of a playing career. In the past, teachers with long experience of playing Lusheng said that when playing, one should breathe deeply into the abdomen (the "abdomen" is about three fingers below the navel). The best way to breathe is to breathe in the chest and abdomen, so that the pronunciation is solid and full.

Beginners can use natural breathing or smell the flowers as a reference to experience breathing while lying down, but if they are trapped in the whirlpool of concepts such as "chest, belly, chest breathing" at the beginning, they will feel more confused. We say that the state of natural relaxation is a scientific way of breathing, and only when it is used well can it breathe smoothly and the tone is firm. How to practice breathing? The first exercise to do is to play "long notes" consistently. This practice is the most important part of the basic technology, whether beginners or professional players, cannot ignore its role, but should adhere to the accumulation of time, perseverance practice, will be of great help to breathing. Beginners, especially children, should follow scientific training methods to practice long sounds, cultivate correct breathing methods, instill correct timbre aesthetic concepts, emphasize gradual progress, and do not rush to success. The first training can be performed in four beats, using the clock second hand as the standard (i.e., four beats), slowly expanding to six, eight, ten or even longer. It should be noted that we should not blindly pursue time growth and ignore the quality of long notes. If you lose timbre, quality and pitch, practice will not yield satisfactory results. The tone should be full. On the basis of clean sound quality and smooth breathing, try to extend the duration.

2. Fingers

As Lusheng is a kind of instrument of Miao nationality combining music and dance, the Miao people dance while blowing. The method is influenced by the habit of people. Special note is. When playing the Lusheng, press the sound hole with your fingers and release with your hands naturally, so as to improve the flexibility of your fingers and better show the performance effect of. If play reed sheng, take hold of the lusheng hand tight, using his finger under paragraph joints according to bending hole, beauty not only hold the posture of lusheng view, and great ride on restricting hand degrees refers to the activities and influence work fruit. Finger elasticity is very important in fingering training. Train the ability of finger independent movement at anytime and anywhere, so that each finger can do elastic beating and uniform, durable and flexible. In any case, the fingers should be relaxed in a natural arc. Sometimes blowing can feel stiff in your arms and shoulders, so always check that your posture is correct and your body is relaxed. Pay special attention to the ring finger. Depending on the situation, the less flexible your fingers

are, the more you need to train them. Every day, the fingers should do a separate flexing exercise. How to train finger techniques? Let's take trill technology as an example. The use of trill technology is common and common in any style of music. You need dexterity when you play. Even frequency, even timbre. Beginners can practice trills on the basis of playing long notes to avoid stiff fingers. Any practice needs a certain process, step by step method, from slow to fast, and even free use. When practicing, don't just go fast and ignore the shape of your fingers and limbs. Even the arms and fingers trembled together. Such exercises are not effective exercises and do not achieve the purpose of the exercise.

3. In-mouth technique

Oral technique package includes articulation and. Firstly, let's discuss articulation, which includes single, double and soft articulation. In the single pronunciation of blowing, the tongue should be to the gingival, and then impact with breath, while avoiding the blockage and interruption of gas breath, and emit the "spit" sound, which has the characteristics of clear clear and smooth. During the playing of double articulation, the tongue should be pressed against the hard palate or gums. will give out the sound of "vomiting" when the air impact occurs, and then the "bitter" sound will be issued in the middle part of on the tongue surface. At this time, the head of the tongue should be withdrawn immediately so that the "vomiting" sound and the "bitter" sound will alternately. Tongue soft blowing play, must put the tongue in the location of the oral cavity between the , Adam's apple and jaw rhythmic do vibrate, exhale evenly and inspiratory, under the breath for , tongue do stretch forward and backward stretch activity, "yo" syllable.

Next is Huashe, Huashe includes slow Huashe, fast Huashe, violent Huashe, double Huashe and small Huashe. To pronounce , roll your tongue towards to form a C shape , then relax and shock tongue with breath. makes the "loo" sound quickly after the tongue vibrates. Fast big Huashe pronunciation process, methods and slow big are similar in Huashe, front is a sample, the last stage of tongue more fibrillation quickly and a motorcycle sound on startup. During the sound, Huashe rolls his tongue up to, pushes against the hard palate, and exhales, striking his tongue with breath, producing vibration and emitting a rapid "toot" sound. In the process of sound of double Huashe, the tongue was pressed against gum, the air flow popped

out the tongue and made the "loo" sound to keep the shape of the tongue. Then, the root of the tongue made the "bitter" sound, "loo" sound and "bitter" sound replaced each other. In the process of making sound, little Huashe puts his tongue slightly against the upper gingiva. Under the action of by air flow, his tongue flicks down from the upper gingiva. The action is repeated repeatedly to produce the "daga daga daga"

Nowadays, the playing technique of Lusheng is booming. In addition to some traditional works and techniques, in recent years, many famous composers have also created many excellent solo, ensemble and new works for Lusheng, which have greatly enriched the playing techniques and expression forms of Lusheng. Lusheng is not only a Chinese musical instrument, it has also stepped onto the world stage and has been greatly developed.

The systematic analysis and exploration of Lusheng instrument playing techniques can standardize the common playing techniques in Lusheng instrument music and the application of different techniques in different musical styles. The following table shows the common playing techniques of Lusheng instrument.

Table 4. The common playing techniques of Lusheng instrument

No.	Name	Mark	No.	Name	Mark
1	Single-tonguing	T	9	“Dun-yin”	▼
2	Double-tonguing	TK	10	“Qi Rou yin”	ᵛᵛᵛᵛᵛᵛᵛ
3	Triple-tonguing	TTK TKT	11	“She Rou yin”	≈≈≈≈≈≈
4	“Da-yin”	T	12	“Hu She”	///
5	“Xiao Hua-she”		13	“Dan Ku yin”	⊙
6	“Da Hua-she”		14	“Chan Zhi yin”	
7	“Bao Hua-she”		15	“Yi Yin”	ᵀᵀ
8	“Shuang She yin”	⊗	16	harmony	

Source: Xu Chang

T stand for Single-tonguing, a blow or inhale to make a "tu" sound, playing video scan Figure40 to watch. TK stands for Double-tonguing, which is a "ku" sound added to the end of Single-tonguing. playing video scan Figure42 to watch. TTK, or TTK for Triple-tonguing, is a combination of the first two. Issue "tutu ku" and playing video scan Figure44 to watch. ⊤ stands for "Da-yin" and quickly strikes the sound hole while playing. Sometimes there is a quick superposition of the second below the note, creating a double tone effect. playing video scan Figure46 to watch.  stand for “Xiao Hua-she”, under the action of air flow, the tip of the tongue is quickly removed from the upper teeth to make the "lulu" or "le" sound, playing video scan Figure48 to watch.  stand for “Da Hua-she” The airflow hits the tongue, making a sound like a motorbike refueling playing video scan Figure50 to watch.  stand for “Bao Hua-she”, under the action of the strong air flow, the tongue accelerates the vibration, issuing "dudu dudu...", playing video scan Figure52 to watch. ⊗stand for “Shuang She yin” , consciously flick the tongue down quickly under the action of air flow to make a "Lu lu" sound, playing video scan Figure54 to watch. ▼stand for “Dun-yin” , Dun Yin has a strong intonation with a strong and flexible sound head. playing video scan Figure56 to watch. stand for “Qi Rou yin”, Qi Rou-yin is a vibration of the air caused by the contraction force of the abdominal muscles, thus producing a musical effect playing video scan Figure58 to watch. stand for “She Rou yin”, The practice method is to hang the tongue in the mouth to exhale or inhale, consciously draw the tongue back to make a "yo" sound, playing video scan Figure60 to watch. /// stand for “Hu She”, make the mouth shape like whistling, then relax the throat muscles, quickly press down the base of the tongue and the throat, shrink the tongue back as far as possible, and then quickly restore playing video scan Figure62 to watch. ⊙ stand for “Dan Ku yin”, Dan Ku-yin is the continuous release of "kukuku..." from the root of the tongue in the throat and mouth during exhalation or inhalation while playing the Lusheng. playing video scan Figure64 to watch.  stand for “Chan Zhiyin”, Chan Zhi-yin refers to a technique of switching the hand on and off the sound hole of the Lusheng playing video scan Figure66 to watch.

stand for “Yi Yin”, Yi Yin is the technique of playing by quickly sliding down the pitch to a target note and then quickly returning to the original note. playing video scan Figure68 to watch.

1. Breathing techniques

Because the players of Lusheng need to store and release a large amount of gas in the lungs during blowing and sucking, there are some differences with normal human breathing. To master the playing and sucking techniques of Lusheng, we must first have the correct mouth shape. The correct mouth shape of Lusheng playing should be: the cheeks of the face should be slightly tightened inward, the mouth wheel should help the upper and lower lips to slightly tighten against the upper and lower gums, and a small oval shape should be loosened in the middle of the lips, and then the traditional Lusheng mouthpiece can be played with a little pressure. The main methods of blowing and inhaling Lusheng can be divided into the following:

One is chest breathing. The chest muscles contract inward to squeeze the breath of the lungs and play. When the Lusheng player plays until there is a little breath left in the lungs, the chest expands outward and the suction airflow enters the lungs. This method of playing uses almost no abdominal muscles, so it can be called the "chest breathing method". The advantage of using this method is that the delivery time of blowing and sucking is very fast, and it is generally used in the "point tracing" of the music that happens once. The disadvantage of this method is that the amount of air inhaled and exhaled in the lungs cannot reach a large value. Therefore, the breath cannot support longer phrases.

The second is abdominal breathing. Bring the diaphragm down and guide the upper and lower abdomen to expand outward. When the Lusheng player inhales and plays, the breath gradually fills the whole abdomen and waist; When playing, the small abdominal muscles exert a little force upward, the upper abdominal cavity still needs to maintain the expanded shape, the breath is evenly blown out, and the abdominal cavity and diaphragm muscles gradually return to the natural state before playing. This method of playing can be called "abdominal breathing method", the advantage of using this method is that the volume of lung inhalation and exhalation can reach a larger value, the breath can support the performance of a longer phrase, and the abdominal trills can be made according to the musical needs. The

disadvantage is that the inspiration is too deep, the load borne by the abdominal muscles is slightly larger, and it is easy to cause the body fatigue of the performer.

The third method is chest and abdomen combined breathing. The rib muscles in the lower part of the chest expand outward, the diaphragm descends, guiding the upper abdomen to expand outward, and the lower abdominal muscles contract slightly harder. When Lusheng players inhale and play, they feel the breath entering the Dantian (that is, about 3cm below the navel), which makes the rib muscle in the lower part of the chest expand outward, and the upper abdominal cavity and lum measure muscle gradually expand; When playing, the costal muscles and upper abdominal cavity still need to maintain the expanded shape, the breath is evenly blown out, and the costal muscles and abdominal cavity and diaphragm in the lower chest gradually return to the natural state before playing. This method of performance can be called "chest and abdomen combined breathing method". The advantages of this method are: the volume of inhalation and exhalation of the lungs can reach a large value, the depth of inhalation is moderate and full and powerful, and the diaphragmatic trills can be made according to the needs of the music; Lower thoracic costal muscle and abdominal muscle to uniform load, players don't feel tired easily.

The fourth is cyclic ventilation breathing. The method of cyclic ventilation is: in the process of playing, when the breath in the lungs is not much, the base of the tongue is used to push the gas forward, and the nose is used to quickly inhale air into the lungs. The advantage of using this method is that it can play special phrases or special passages. In addition, in the process of "exhalation", the unique skill of Lusheng playing, the tongue base is used to make the tongue surface move back and forth in the mouth, resulting in fast intermittent air flow to make the Lusheng sound like breaking. "Exhalation" performance has little to do with breathing, and nasal breathing can still be used during performance.

The playing and absorbing techniques of the above four kinds of Lusheng should be flexibly used in different pieces to meet the musical effects required by various pieces.

2. Breathing control technique

The requirements of breathing control are: the volume should be strong and strong; The pitch must be strong but not high, weak but not low, and the tone must be

strong but not noisy and weak but not weak. Beginners should first blow the volume and tone of the Lusheng, adhere to long tone training, long tone training is very stable, and then enter the breathing control link.

3. Tonguing techniques technique

Tonguing is the most commonly used technique in the playing techniques of Lusheng. Tonguing techniques can be divided into single-tonguing, double-tonguing, triple-tonguing, light- tonguing, broken-tonguing, air-tonguing, lip-tonguing, etc.

4. Single-tonguing technique

Single-tonguing refers to the form of spitting with the tip of the tongue to prevent the breath from shrinking. Usually, it is applied to the first sound of a phrase, the parts of the phrase without smooth lines, the sounds with high homophones with smooth lines, the first sound with smooth lines and the slurp in the phrase. The sound head blown by Single-tonguing method is clean, full of timbre and expressive. However, continuous Single-tonguing is not suitable for playing works with too fast speed due to the speed limit. When playing, the tip of the tongue clings to the upper gum to form a blockage, and then the airflow breaks through the blockage of the tip of the tongue and the upper gum to form a crackling sound. Generally speaking, Single-tonguing is half or shorter than the duration of normal notes. Single-tong is widely used, and most people will use Single-tonguing technique in some relatively relaxed and active music. Don't practice too fast at the beginning, your tongue and fingers should be closely matched, and your pronunciation should be firm, powerful, clear and granular, so as to maintain the consistency of strength and speed. Strengthening Single-tonguing training is the basis of practicing double-tongue and three-tongue techniques. We should firmly master Single-tonguing techniques and then gradually practice other kinds of tongue techniques. The symbol of performance is "T".

The QR code below shows this technique:

Figure 40. QR code for single-tonguing

Source: Xu Chang

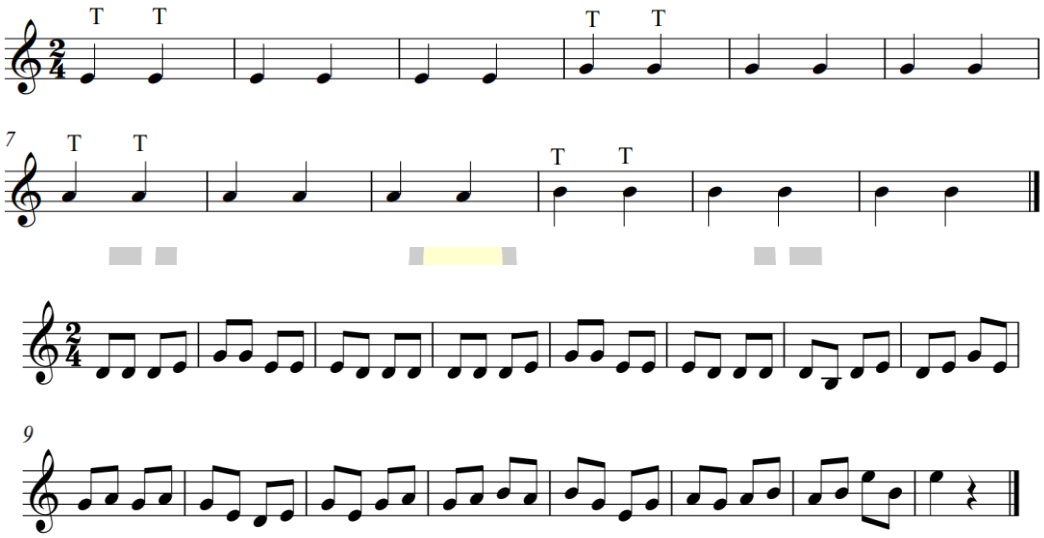


Figure 41. Examples of single-tonguing

Source: Xu Chang

5. Double-tonguing technique

During the process of playing the double tongue sound, the tongue should be pressed against the hard palate or gums. When the airflow impacts, a "Tu" sound will be emitted, followed by a "Ku" sound in the middle part of the tongue surface. At this time, the tongue should be immediately retracted, so that the "Tu" sound and the "Ku" sound alternate continuously. The tongue emits sounds similar to "T, K", such as "TK, TKTKTK, TKTKTK".The use of double articulation techniques is very extensive and is often used in many lively and lively music. So every note should not be missed in training, and the music score on each note should be clear and solid, and mixing is not allowed; In terms of rhythm, it is necessary to have a stable sense of rhythm. At the

beginning of practice, the speaking speed should not be too fast. The tongue and fingers should work closely together, and the tone between the "T" and "K" sounds should be uniform, with consistent volume. The pronunciation should be firm, clear, granular, and maintain consistency in strength and speaking speed. The playing symbol is "TK".

The QR code below shows this technique:

Figure 42. QR code for double-tonguing

Source: Xu Chang

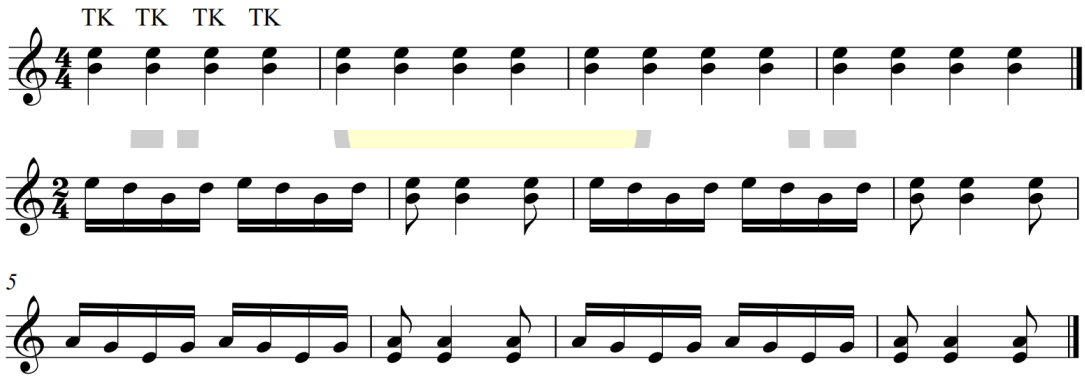


Figure 43. Examples of double-tonguing

Source: Xu Chang

6. Triple-tonguing technique

Triple-tonguing is a special playing method, and it is also the change and development of Single-tonguing. It is usually a combination of a Single-tonguing and a Double-tonguing, and whether the combination is Double-tonguing or Single-tonguing first depends on the rhythm type. In general, eighth notes are used as a single and sixteenth notes as a Double-tonguing. Triple-tonguing is generally used in

the rhythm of an eighth and sixteenth note, or in the rhythm of a sixteenth note and a post-eighth note. Triple-tonguing is the continuous "TTK" (stack of single words) in our daily speech, such as "TTK" or "TKT", which forms the playing method of Triple-tonguing. When practicing Triple-tonguing, you can first do oral pronunciation training. When the tongue movement coordination is better, then combined with the change of fingering, the coordination of oral pronunciation and finger movements should be practiced, and the conversion, volume and intensity between "T" and "TK" should be consistent. Pronunciation should be firm, clear, and grainy, with consistent force and speed. In general, there is a Triple-tonguing technique in the allegro part, so every tone cannot be missed in the training, to ensure that every tone in the score is clear and solid, must not be mixed; The rhythm should be steady and rhythmic, especially at the same speed between the "T" and "TK" sounds. The performance symbol is "TTK" or "TKT". The following is an example of Triple-tonguing.

When playing, pay attention to the forte of the first note and the uniformity of the sixteenth note after the first eighth note in each group, and the Triple-tonguing first note is strong, not weak. One eighth note and two sixteenth notes should be as equal in time as possible. At the same time, breathing training is required between eighth and sixteenth notes to ensure the integrity of the phrase.

The QR code below shows this technique:

Figure 44. QR code for triple-tonguing

Source: Xu Chang

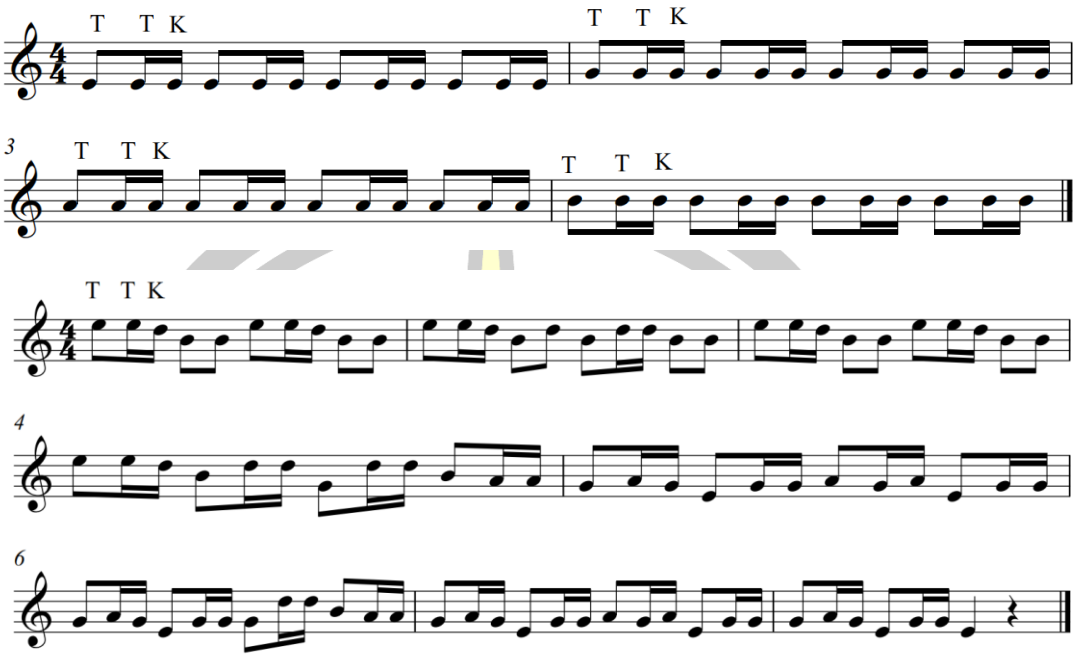


Figure 45. Examples of triple-tonguing

Source: Xu Chang

7. Da-yin techniques

Dayin is to blow out a sound or two sound, in the sound hole of the sound with the finger quickly moved, the effect is called "Dayin" requires the finger "spirit, precision, stability". The symbol is "丁". Dayin is a striking sound in the local hole, and its actual pitch is the rapid repetition of the local note with the second below. For example, when you encounter the "do" sound in performance, what you get with Dayin is actually "si,do", and the use and color of Dayin are roughly the same as the overlapping sound, especially in some music of Jiangnan, Dayin is a commonly used technique. It is also used in Inner Mongolian or Tibetan music, but the finger movement is slower, similar to the appoggiatura. When practicing Dayin, the fingers should be "spiritual, accurate and steady". The so-called "spirit" is flexible fingering, pronunciation cannot be rigid; "Quasi" means that the finger should be played on the sound hole, and there can be no virtual sound; "Stable" requires that we cannot be fast and slow when using Dayin, cannot affect the original speed, and the time of Dayin should be very accurate. An example of Dayin is shown below.

The QR code below shows this technique:

Figure 46. QR code for Da Yin

Source: Xu Chang

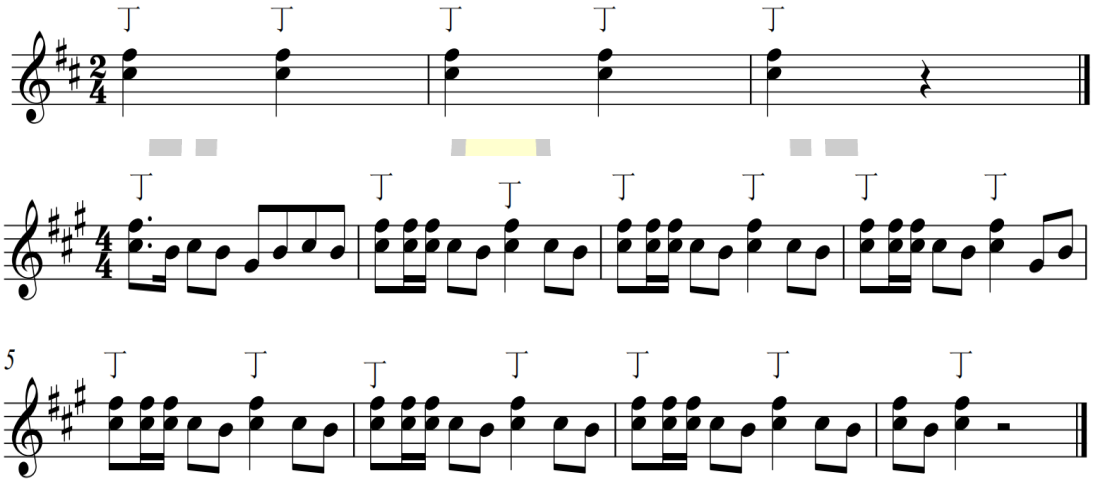


Figure 47. Examples of Da Yin

Source: Xu Chang

8. “Xiao Hua-she”

Xiao Hua-she is a very special kind of playing technique. It is a very exquisite method, where the tip of the tongue is gently placed on the root of the tooth, and under the action of air flow, the tip of the tongue is quickly removed from the upper teeth to make the "lulu" or "le" sound, and then the action is quickly resumed and repeated repeatedly to make the "lulu" sound. Like the sound of cicadas. Xiao Hua-she is generally used in the lyric part of the adagio of the music. In practice, we should pay attention to the method, relax and find the feeling of the tongue. We need to practice from weak to strong, from slow to fast.

The QR code below shows this technique:

Figure 48. QR code for Xiao Hua-she

Source: Xu Chang

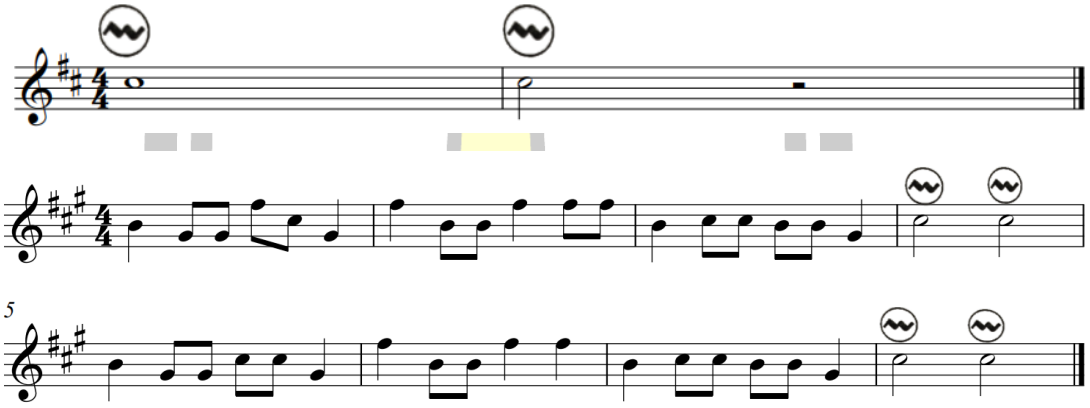


Figure 49. Examples of Xiao Hua-she

Source: Xu Chang

9. “Da Hua-she”

Da Hua-she is a strong inhalation and tongue combination technique, which is divided into slow Hua-she and fast Hua-she. The way to practice slow Hua-she is to roll the tongue upward into a "C" shape, and impact the tongue with a strong airflow to make the tongue vibrate and make the sound of "lulu lulu". The effect of slow Hua-she is similar to the sound of a motorcycle, and the lower jaw and upper and lower lip should vibrate. The method of practicing fast Hua-she is to squeeze the mouth space slightly to a certain extent on the basis of practicing slow Hua-she, and then impact the tongue with strong air flow, and the tongue vibrates faster than the slow Hua-she speed, and the blowing effect is like the sound of a motorcycle when the gas door is refueling. The fast Hua-she effect is intense and fast, and is often used for short notes

in the music, while slow Hua-she is often used for warm and grand passages in the music.

The QR code below shows this technique:

Figure 50. QR code for Da Hua-she

Source: Xu Chang

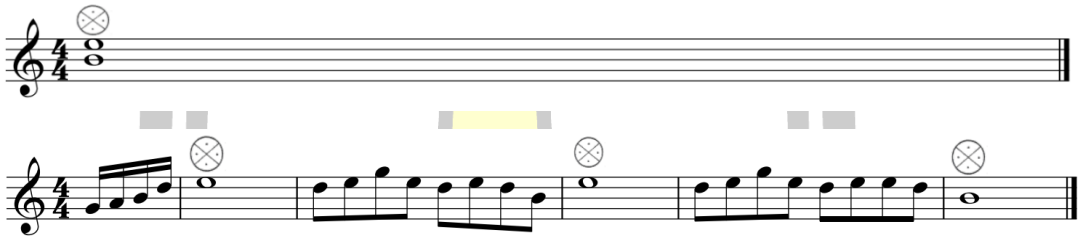


Figure 51. Examples of Da Hua-she

Source: Xu Chang

10. “Bao Hua-she”

Bao Hua-she is a more difficult technique in playing Lusheng, and its qi method is opposite to Da Hua-she. The practice method is to put the tongue flat in the mouth slightly upward roll, with the exhalation method, the breath should be rapid and powerful, the time should be short, under the action of the strong air flow, the tongue accelerates the vibration, issuing "dudu dudu..." The sound of... Bao Hua-she has a similar effect to Fast Hua-she, which is also suitable for notes with short or no time value in the music.

The QR code below shows this technique:

Figure 52. QR code for Bao Hua-she

Source: Xu Chang

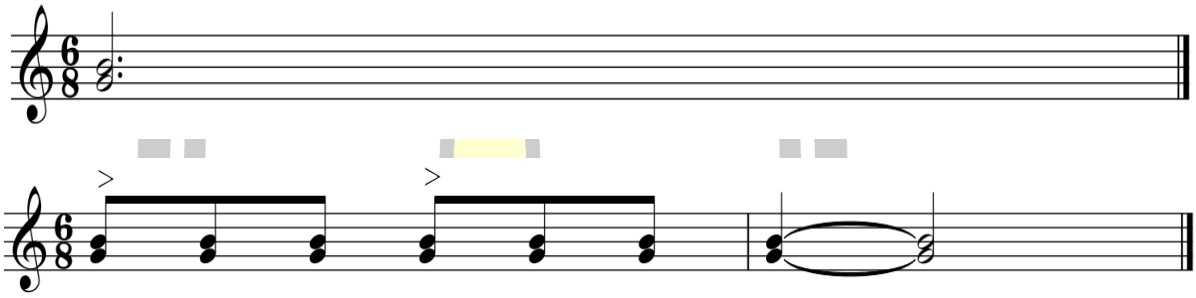


Figure 53. Examples of Bao Hua-she

Source: Xu Chang

11. “Shuang She yin”

Shuang She-yin is to press the tip of the tongue slightly to the root of the upper teeth, exhale or inhale, and consciously flick the tongue down quickly under the action of air flow to make a "Lu lu" sound. Then, with the tongue flat on the floor, a "bitter" sound will be made at the root of the tongue. Repeat the same movement repeatedly to form a "Lu Lu Lu..." The sound of... The practice requires flexibility, rhythm, passion and infectivity. Shuang She-yin is suitable for medium speed elastic music. Double articulation is not the same as Shuang Sh-yin, which is cleaner and more forceful, and Shuang Sh-yin stresses the coherence of the notes.

The QR code below shows this technique:

Figure 54. QR code for Shuang She-yin

Source: Xu Chang

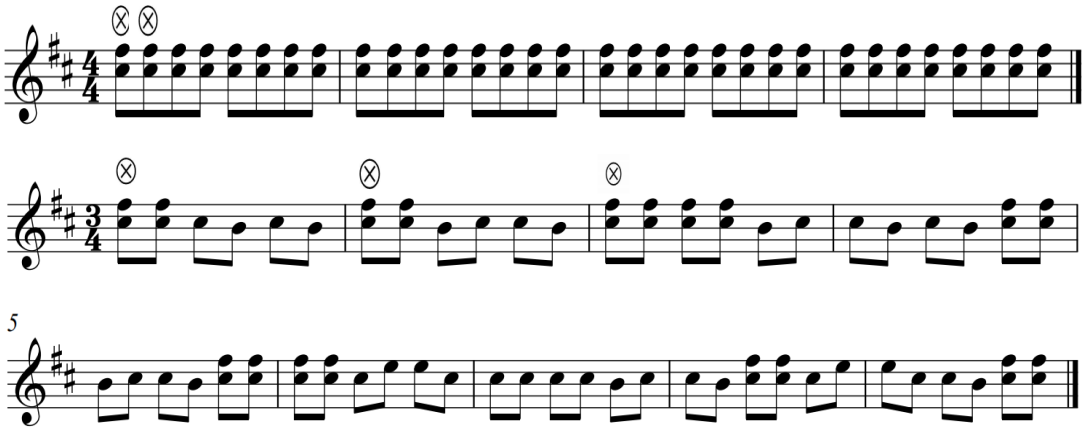


Figure 55. Examples of Shuang She-yin

Source: Xu Chang

12.” Dun-Yin” techniques

Dun Yin is a powerful forward and backward movement of the tongue to obtain a single and particularly enhanced head, usually marked with an inverted black triangle above the notes. Dun Yin is played in a similar way to the jump note, and the pronunciation is usually shortened by half of the note. The difference is that Dun Yin has a strong intonation with a strong and flexible sound head. Dun Yin is suitable for playing strong and leaping melodies. When playing Dun Yin, there should be a rush of air to break through the mouth to achieve a short, powerful hopping sound effect.

The QR code below shows this technique:

Figure 56. QR code for Dun Yin

Source: Xu Chang

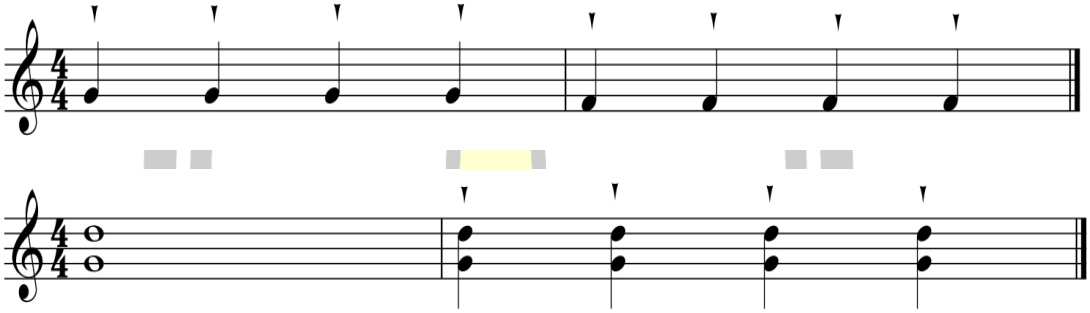


Figure 57. Examples of Dun Yin

Source: Xu Chang

13. “Qi Rou yin” techniques

Qi Rou - Yin also called abdominal tremolo, is belly (abdomen) and the combination of a skill, practice is a breath or inhale breath from slow to fast, from weak to strong, has controlled the slight airflow, fighting voice sheng etc.will to make reed issued a "huhuhuhu..." Qi Rou-yin is a vibration of the air caused by the contraction force of the abdominal muscles, thus producing a musical effect. Qi Rou-yin comes in different forms, including large, small, fast, and slow, depending on the content and tempo of the music. Qi Rou-yin is often used more in slower, lyrical melodies to give the music a natural, loose, and melodious feel, and is not suitable for fast playing. When playing, a uniform and free Qi Rou-yin should be used to play the melody, and a more exaggerated Qi Rou-yin effect can be used for melodies full of passion or sadness. The effect is similar to the friction string effect of stringed instruments and the subtle pitch fluctuations produced when vocal actors sing. In order to flexibly use Qi Rou-yin and maintain intonation, the performer should adopt

the correct method of abdominal breathing, let the air flow naturally, and breathe out gently to obtain the effect of stretching. Avoid deliberately shaking the airflow or using chest breathing or Adam's apple to shake the airflow, so as not to affect the music effect.

The QR code below shows this technique:

Figure 58. QR code for Qi Rou-yin

Source: Xu Chang

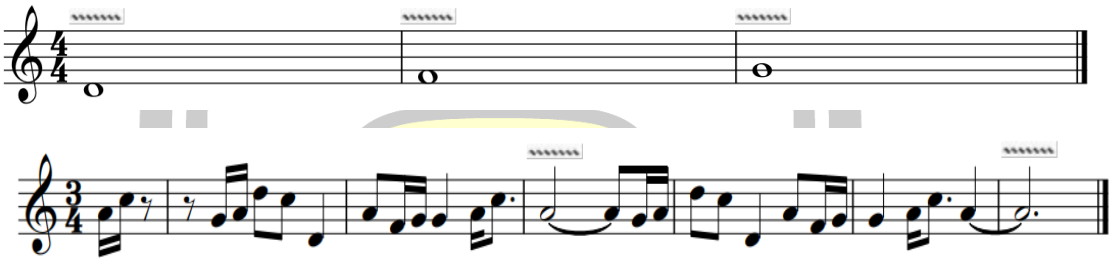


Figure 59. Examples of Qi Rou-yin

Source: Xu Chang

14. “She Rou Yin”

She Rou-yin is a technique that mimics the effect of string string kneading in the playing technique of Lusheng, which is mainly suitable for beautiful, tender and quiet music. The practice method is to hang the tongue in the mouth to exhale or inhale, consciously draw the tongue back to make a "yo" sound, and then the tongue returns to the original position, and repeatedly repeat this action, continuously issuing "yo yo yo yo yo yo..." It is required to practice repeatedly from slow to fast, from weak to strong.

The QR code below shows this technique:

Figure 60. QR code for She Rou-yin

Source: Xu Chang

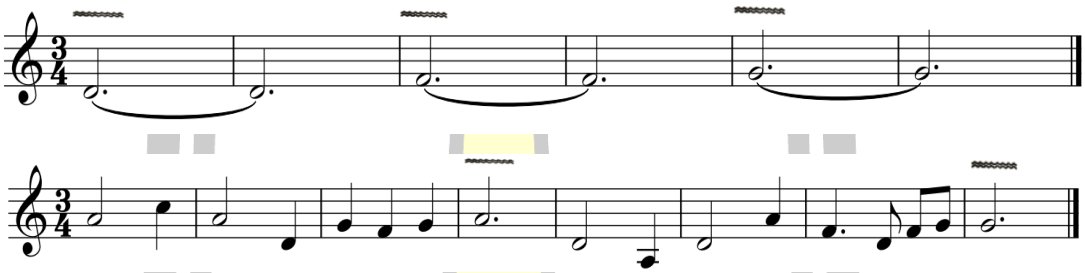


Figure 61. Examples of She Rou-yin

Source: Xu Chang

15. “Hu She”

Hu She, also known as Hou She-yin, is one of the more difficult skills in playing Lusheng. The practice method is to make the mouth shape like whistling, then relax the throat muscles, quickly press down the base of the tongue and the throat, shrink the tongue back as far as possible, and then quickly restore (restore with strength), repeat this action constantly, and use the base of the tongue and the throat to drive the tongue to quickly suspend and expand to produce wind power. The wind can breathe freely through the Lusheng's blowing mouth and nose) and makes a "huhuhuhu" whistle.

The QR code below shows this technique:

Figure 62. QR code for Hu She

Source: Xu Chang

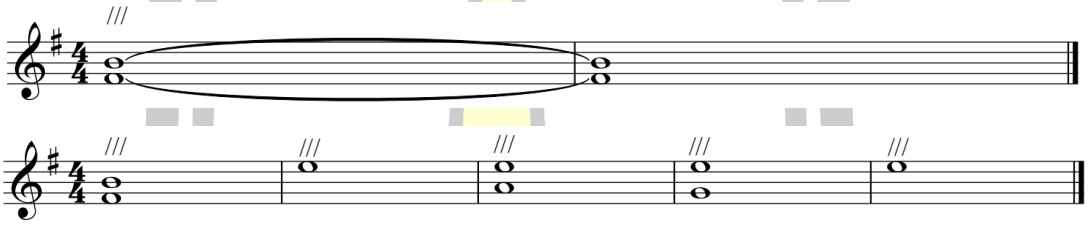


Figure 63. Examples of Hu She

Source: Xu Chang

16. “Dan Ku yin”

Dan Ku-yin is the continuous release of "kukuku..." from the root of the tongue in the throat and mouth during exhalation or inhalation while playing the Lusheng." Or "luoluoluo..." Voices. Practice from weak to strong, from slow to fast, the lower jaw part should have a slight flutter. The single bitter sound is suitable for soft and beautiful music.

The QR code below shows this technique:

Figure 64. QR code for Dan Ku-yin

Source: Xu Chang

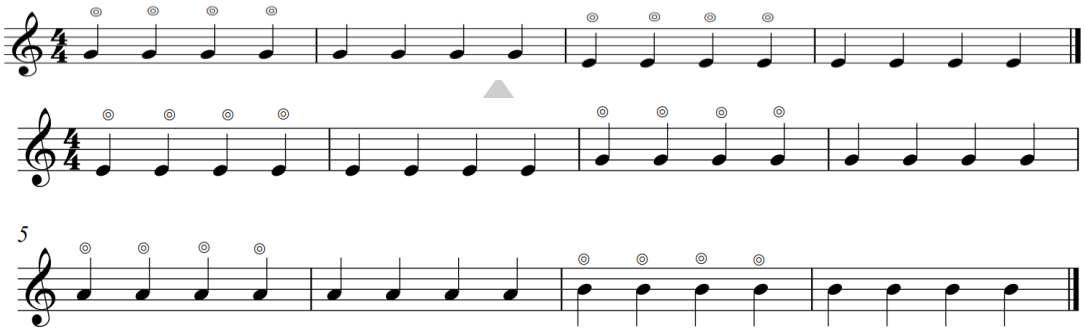


Figure 65. Examples of Dan Ku-yin

Source: Xu Chang

17. “Chan Zhi yin”

Chan Zhi-yin refers to a technique of switching the hand on and off the sound hole of the Lusheng, which is practiced in a slow to fast way, and the sound produced is like the effect of the guzheng or Guqin and the one-stringed harp. Chan Zhi-yin is generally used for beautiful or sad music and passages that are slow in time.

The QR code below shows this technique:

Figure 66. QR code for Chan Zhi-yin

Source: Xu Chang

Figure 67. Examples of Chan Zhi-yin

Source: Xu Chang

18.“Yi Yin”

Yi Yin is used to decorate music and add emotion and expressiveness to the music. Yi Yin is also known as "glissando" and "grace note". Yi Yin is the technique of playing by quickly sliding down the pitch to a target note and then quickly returning to the original note. This sliding process is usually very fast, causing the listener to experience a brief fluctuation or tremor in pitch. The speed and amplitude of Yi Yin can be adjusted according to the nature of the music and the performance intention of the performer. Sometimes, Yi Yin just subtly decorates a note, while other times a larger swipe can be used to emphasize emotional or important notes. Yi Yin starts with a starting note and then slides to a target note. The starting note can be the pitch of any previous note, while the target note is the pitch of the next note to be emphasized. This target note may be the top note, the bottom note, or the pitch of the original note. The performance of Yi Yin also depends on the skill and style of the performer. Some Yi Yin can have a pronounced vibrato effect, adding a soft, melodious tone, while others may be crisper and clearer to highlight the dynamic nature of the music. Yi Yin requires players to have certain technical skills, and slow practice is required during practice, especially the control of pitch and the coordination of mouth and fingers. Players need to ensure the accuracy of Yi Yin, so that it integrates naturally into the music.

The QR code below shows this technique:

Figure 68. QR code for Yi Yin
Source: Xu Chang

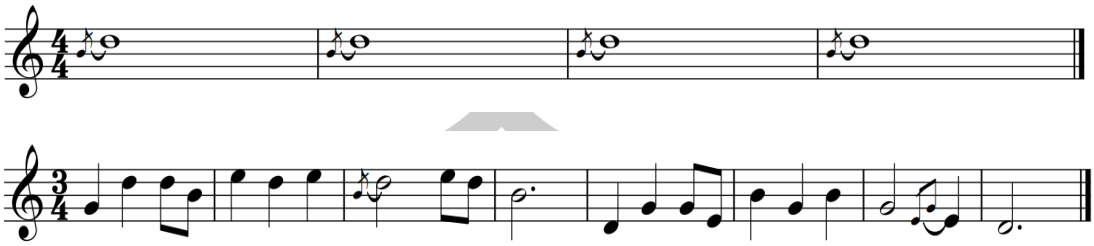


Figure 69. Examples of Yi Yin

Source: Xu Chang

19、Harmony

In the southeast of Guizhou Province, China, the traditional Lusheng is also called the six-pipe Lusheng. Each of the six pipes emits one sound, and the six pipes have six sounds. Of these six notes, one group (two) is an octave, that is, the same note in different octaves. Different from other foreign or domestic instruments, the traditional Lusheng has a narrow vocal range, only five different notes within one octave (one note is the same but the octave is raised), and the variation (semitone) in the traditional Lusheng is also very limited. Although the pitch and timbre of a Lusheng instrument can be adjusted by modifying the shape of the copper reed during production, the timbre of a Lusheng instrument is very monotonous, the pitch is also fixed, and the contrast between the intensity and intensity of the volume is not obvious. The unique feature of Lusheng is that it can play harmony.

By blowing or inhaling air into the Lusheng pipe and holding down the sound hole, the purpose of air penetration can be achieved by blowing the reed to sound. Holding down one stoma makes one sound, holding down two stoma makes two sounds at the same time, and three sounds are the same as four sounds. Therefore, although the Lusheng instrument has only six tones, the traditional Lusheng performance is also very rich and beautiful because of its rich harmonic playing skills.

19.1 Common harmonies

Because of the variety of the traditional six-pipe Lusheng sound sequence in Guizhou Province, the producer only needs to change the pitch of the copper reed to make the six-pipe Lusheng with different sound sequence. The and sounds studied here are listed as follows:

1) The first series of sounds

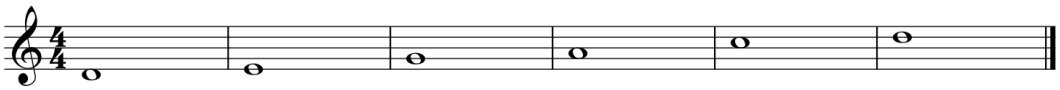


Figure 70. The first series of sounds

Source: Xu Chang

2) The second series of sounds

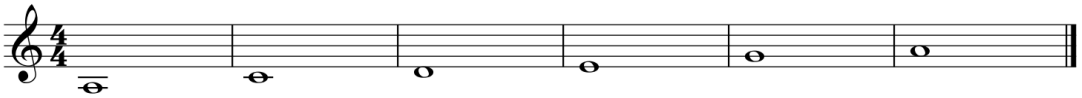


Figure 71. The second series of sounds

Source: Xu Chang

3) The third series of sounds

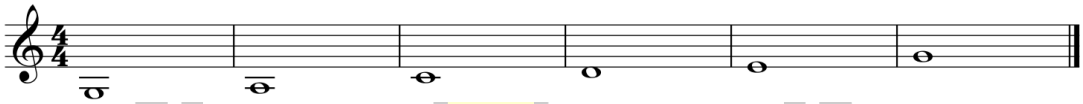


Figure 72. The third series of sounds

Source: Xu Chang

4) The fourth series of sounds

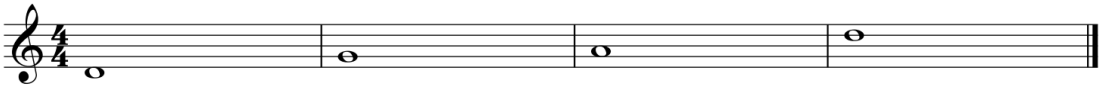


Figure 73. The fourth series of sounds

Source: Xu Chang

The four kinds of sounds listed above are listed as the common series of sounds, and the arrangement and combination of harmonies are also developed from the above series. Below are the different types of harmonic forms, including two tone arrangements, three tone arrangements, and four tone arrangements.

19.1.1 Perfect fifth harmony

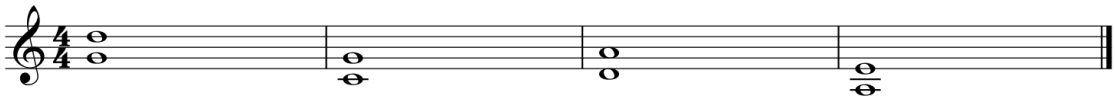


Figure 74. Perfect fifth harmony

Source: Xu Chang

19.1.2 Perfect fourth harmony

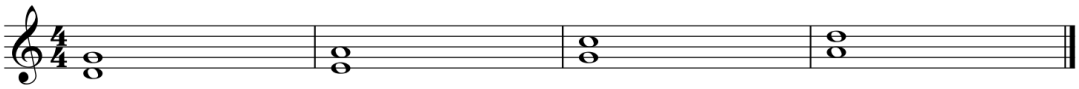


Figure 75. Perfect fourth harmony

Source: Xu Chang

19.1.3 Major third and minor third

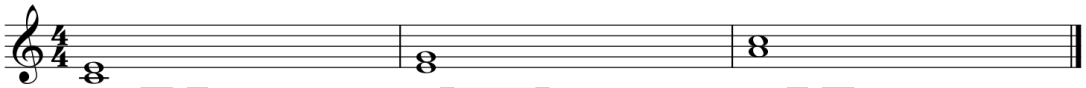


Figure 76. Major third and minor third

Source: Xu Chang

19.1.4 Major sixth and minor sixth

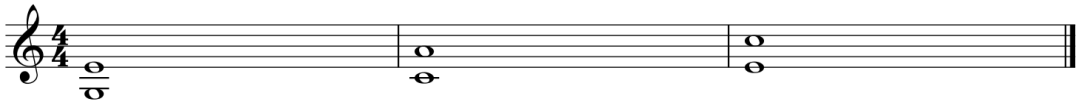


Figure 77. Major sixth and minor sixth

Source: Xu Chang

19.1.5 Major second

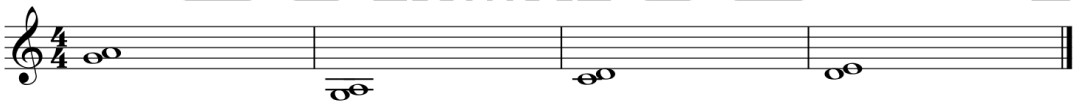


Figure 78. Major second

Source: Xu Chang

19.1.6 Minor seventh

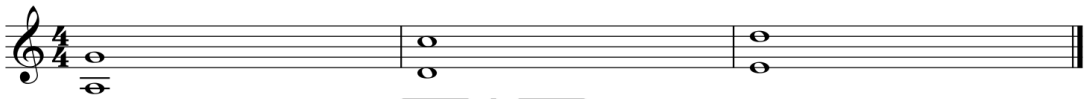


Figure 79. Minor seventh

Source: Xu Chang

19.1.7 A chord arrangement of three notes

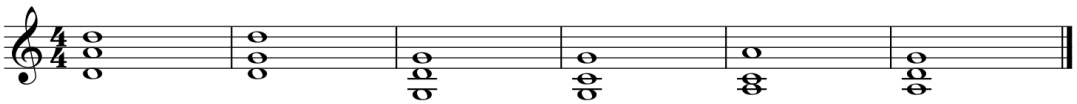


Figure 80. A chord arrangement of three notes

Source: Xu Chang

19.1.8 A four-note arrangement of a chord

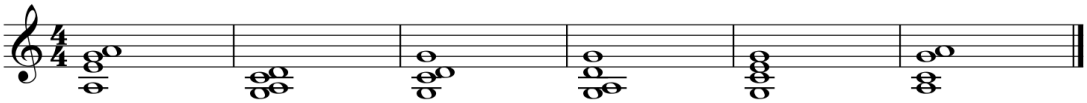


Figure 81. A four-note arrangement of a chord

Source: Xu Chang

The effect produced by the use of these harmonies and chords greatly enriches the musical expression of the traditional six-pipe Lusheng instrument and breaks the state of six tones playing alone. Moreover, the playing of these harmonies and chords is determined by the instrumental structure, acoustics, chord connection, artistic conception and speed of the Lusheng itself.

19.2 Take example

19.2.1 The use of two-note harmony in music

19.2.2 The melody of a lively dance music, as follows

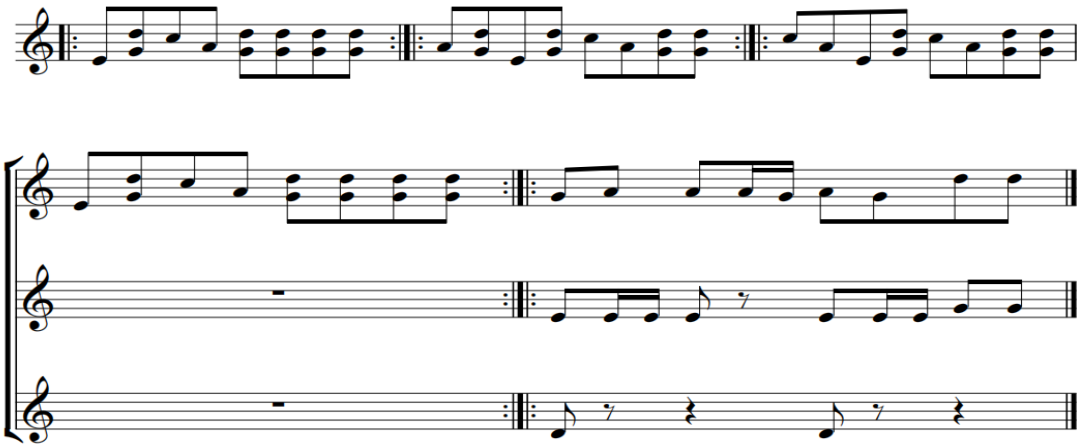


Figure 82. Two-note harmony in music

Source: Xu Chang

19.2.3 A sacrificial song with a soft, slow melody and a sad, low melody. Generally, use continuous four degrees, five degrees progressive. The following sheet music is an example。

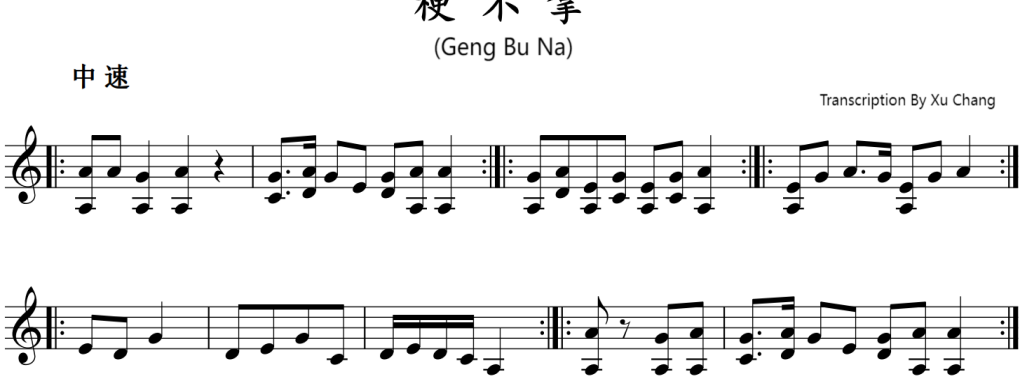


Figure 83. Geng Bu Na

Source: Xu Chang

19.2.4 The use of three-note chords in music

19.2.4.1 A three-note chord in which all but one of the tonic notes (often the highest) fall on top of the downbeat. The two consonants in the second part are minor second, which is a typical dissonant interval, but here is to strengthen the sense of rhythm. There are also intervals falling on the weak beat, which are used to highlight the rhythm and are often used in Lusheng dance music. Such as Lusheng song "Gate" under the spectrum.

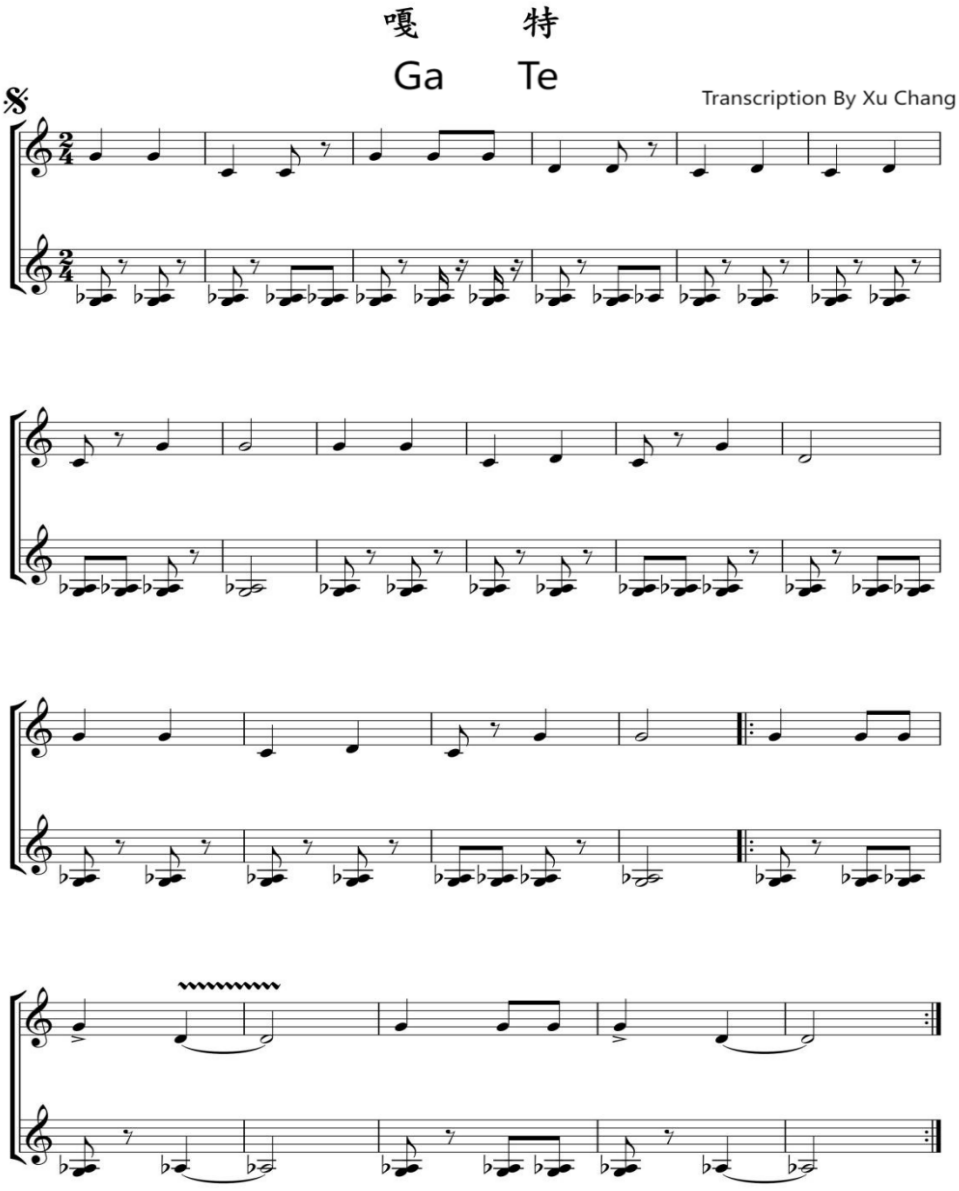


Figure 84. Ga Te

Source: Xu Chang

19.2.4.2 The Lusheng song in the northwest of Guizhou Province has various changes in harmony and blowing, and different harmony and color. The second and third voices often use the second degree to form harmony, and the main melody constitutes a fourth- and fifth-degree relationship, but the sound effect does

not sound harsh, and the fast percussion and grace notes can also make the music unique. An example is the following sheet music.

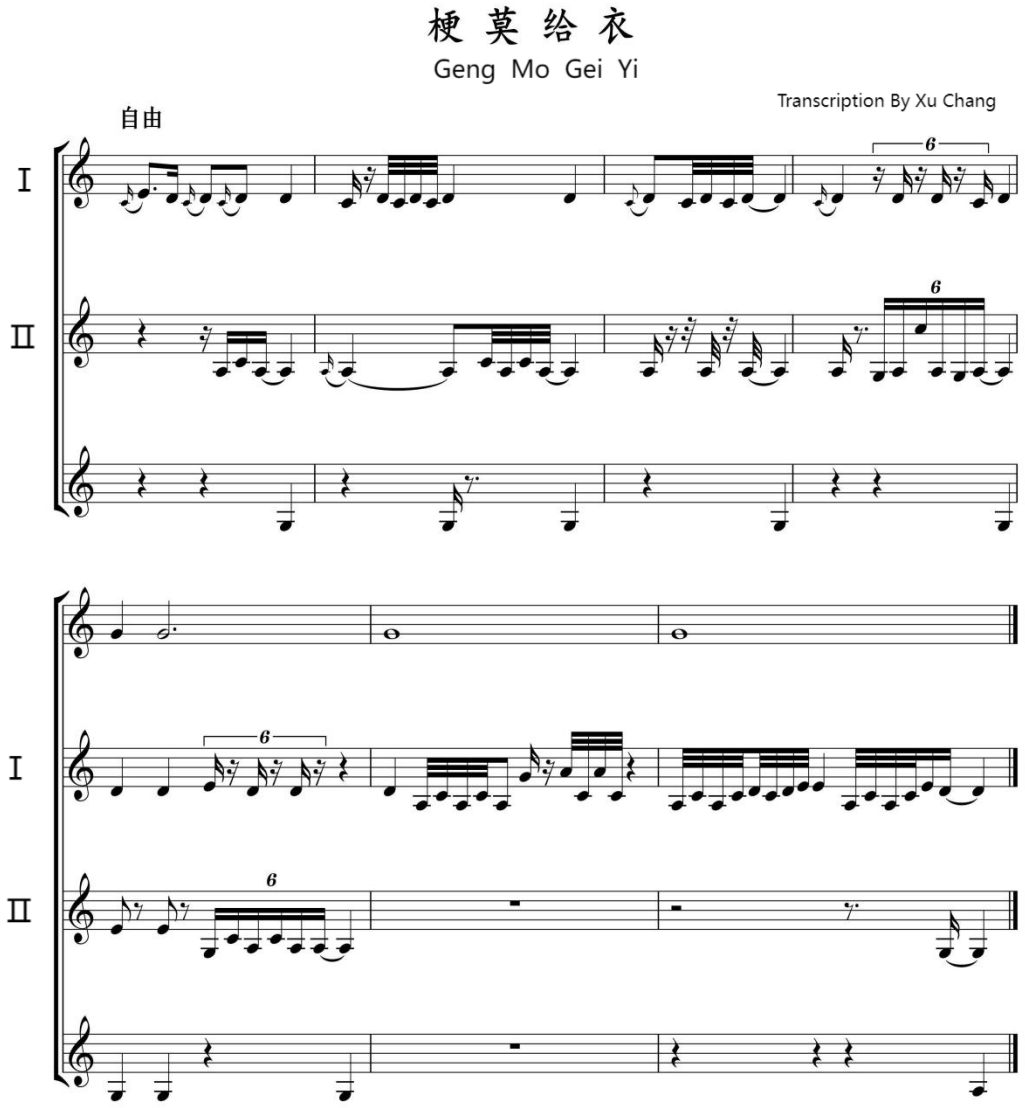


Figure 85. Geng Mo Gei Yi

Source: Xu Chang

19.2.2 The use of harmony of four or more notes in music

In order to create an atmosphere, enhance the sense of rhythm, and strengthen the sound effect of the main melody (tonic), other than the tonic is often played relatively short (usually using Da-yin techniques). For example, in the first few measures of "Nordezhong", Lusheng song from Huaxi District of Guiyang City,

Guizhou Province, the music has a strong momentum. Except for the extension of the notes of the main melody, all the residual sounds stop instantly, but the intonation technique is used. This not only highlights the main melody notes, but also forms a sharp contrast with the following single note melody, which makes the music more contrast, enhances the appeal, and increases the sound color. Here is the score.

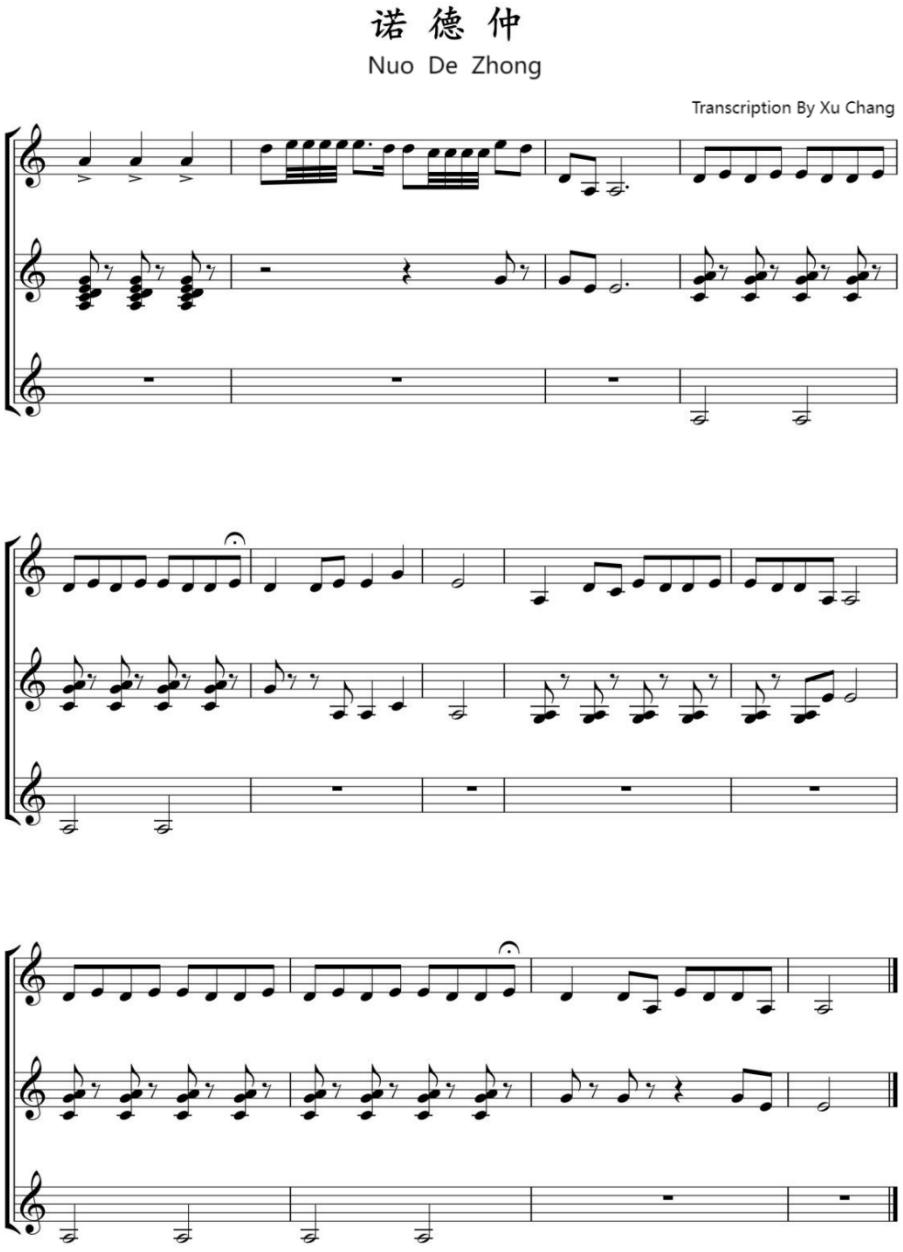


Figure 86. Nuo De Zhong

Source: Xu Chang

The Analysis of Lusheng Instrument Works

1. Basic technique works:

"Hua Chang"(2)

"Migration Suite Cross-River Tune"(3)

"Hua Chang"(2)

Hua Chang is a comprehensive cultural activity venue held by the people, mainly featuring Lusheng performance. These activities are usually held in a place with a better natural environment in the mountains, so they are called "Hua Chang". Most of the Lusheng songs played in flower field activities are love songs for courtship, such as songs inviting girls to dance and songs praising girls for their beauty. Most of the songs are small songs with bright rhythm. For example, the music analyzed below is Hua Chang (2), which is popular in southeast Guizhou Province.

花　场　（二）

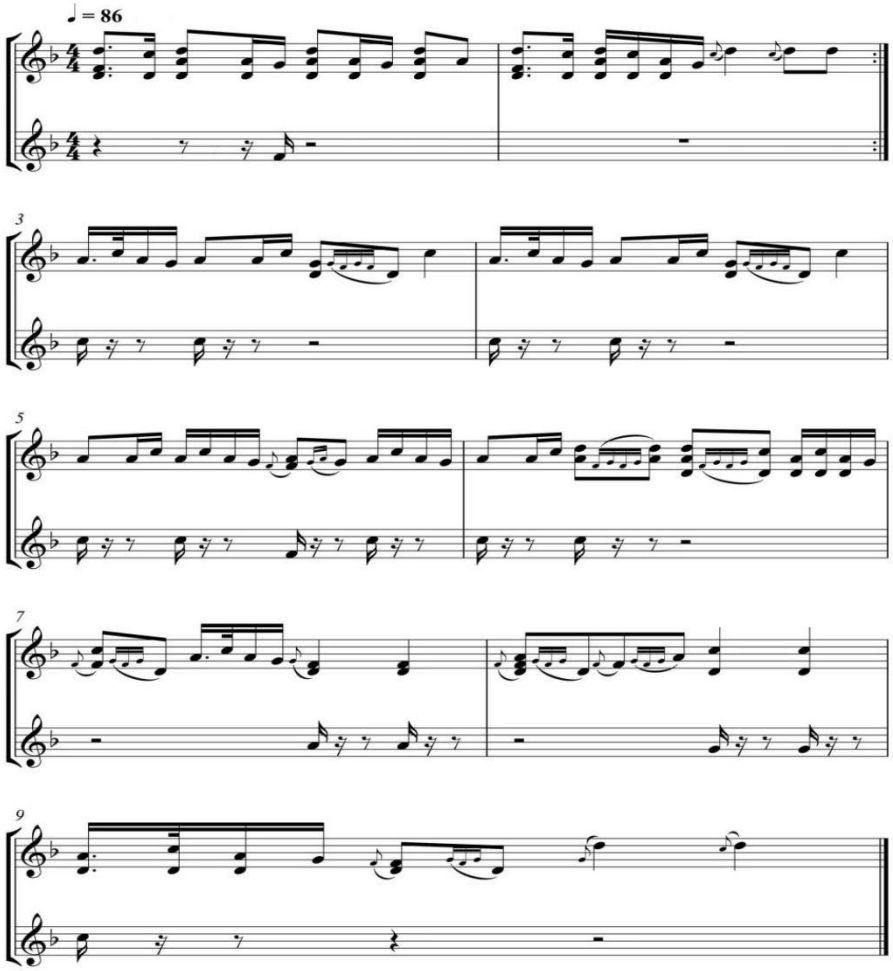


Figure 87. "Hua Chang"(2)

Source: Xu Chang

"Hua Chang" (2) is solo of music with a prelude, d minor, 4/4 time, the six-pipe Lusheng series is la (bass), do, re, mi, sol, la. The whole music consists of four parts, namely prelude, a, b, c phrase.

Table 5. The Musical sections of *"Hua Chang"(2)*

Section	1	2	3	4
Measures	1-2	3-4	5-7	8-9
Form	Introduction	a	b	c

Source: Xu Chang

The prelude is the first and second measures, and because of the use of repeated notations, both introductions are played. From the first and second measures, it is clear that the rhythm of the whole piece is composed of dotted notes and continuous sixteenth notes, and the whole first four measures make the whole piece more cheerful. And in terms of harmony, the first two measures not only use the more commonly used third and fourth harmonic, but also the use of second harmonic. As shown below.

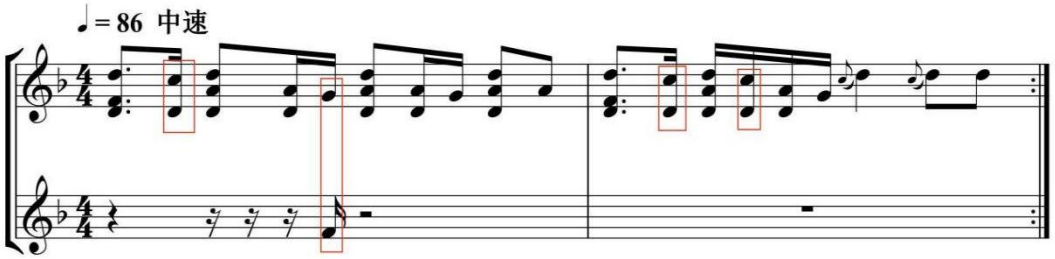


Figure 88. The prelude of Hua Chang

Source: Xu Chang

This section is made up of two phrases.

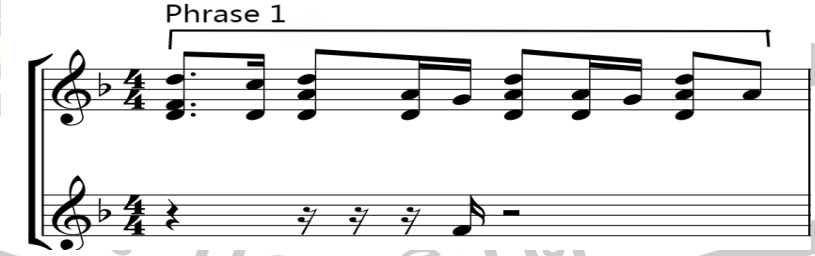


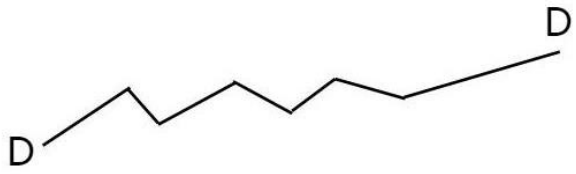
Figure 89. Phrase 1 of Hua Chang

Source: Xu Chang

Among them, the first phrase is the lead, the second is the chorus

Solo Line

Range From D to D (a eight interval)



Tempo Moderato (♩=86)

The use of four second harmonic intensifies the sense of rhythm, increases instability, highlights the main melody, and gives the feeling of light. The last three tonic notes are played with the accent accompanied by the grace note to indicate the emergence of the main melody.

The a phrase is two measures 3 and 4, which is the heart of the whole piece, and it uses a lot of sixteenth notes. The fourth measure is a repetition of the third measure in order to emphasize the theme melody. The appearance of four grace notes twice makes the phrase sound very gorgeous. Pay attention to slow practice when playing grace notes, play each note clearly at a slow speed, and accelerate little by little after proficiency.

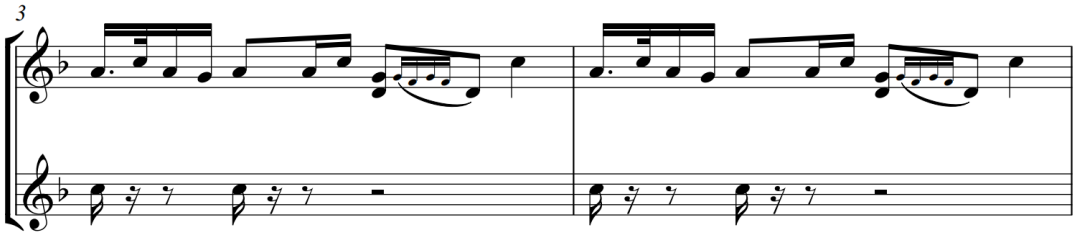
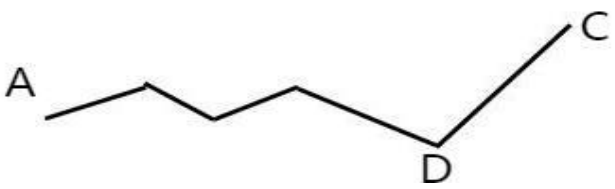


Figure 90. The heart of the whole piece

Source: Xu Chang

Solo Line

Range From D to C (a seven interval)



b phrase is 5, 6, 7 three measures, the atmosphere is warm, the speed is cheerful, the use of a large number of grace notes and percussion techniques, in terms of melody, on the basis of the main melody, the addition of more rich harmonic techniques, the grace notes are also very gorgeous.

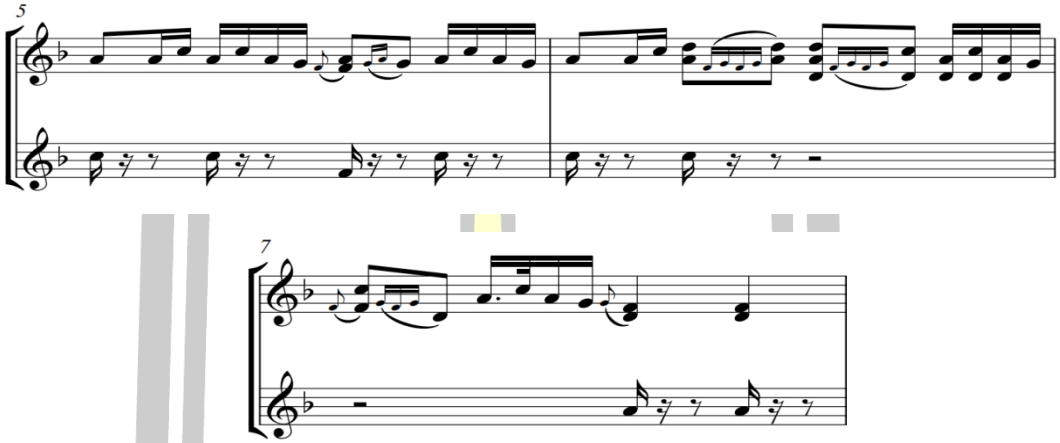
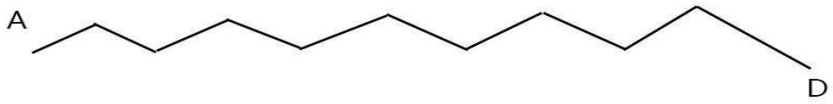


Figure 91. B phrase of Hua Chang

Source: Xu Chang

Solo Line

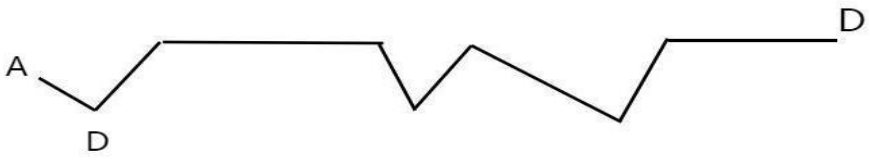
Range From D to D (a eight interval)



The c phrase is 8 and 9 measures, the number of grace notes is much more than before, and the rhythm is not so warm compared with the previous, which presets the end of the music.

Solo Line

Range From D to D (a eight interval)



This piece of music is the primary difficulty piece of traditional Lusheng. The main difficulty lies in the use of playing breath, the playing of grace notes, the playing of harmony and chord and the playing rhythm. In practice, we need to pay attention to the speed of practice, starting from the slow speed, the coordination of blowing and breathing and finger pressing should be very precise, the strength of the sound finger, the accuracy of the grace note, and ensure that the note is not missed after the speed is accelerated. When the slow practice is very skilled and you do not feel a significant shortage of breath after the completion of the wind, you can increase some speed and continue to practice. In this way, the required speed of the music is eventually practiced. After playing proficiently, it is necessary to pay attention to the sound with harmony that needs to be emphasized. In addition to increasing the playing force on the logical stress, it is also necessary to pay attention to and strengthen the stress on the sound. However, because some harmonized notes are shorter in length, they should be practiced separately during practice and playing.

2)"Migration Suite Cross-River Tune"(3)

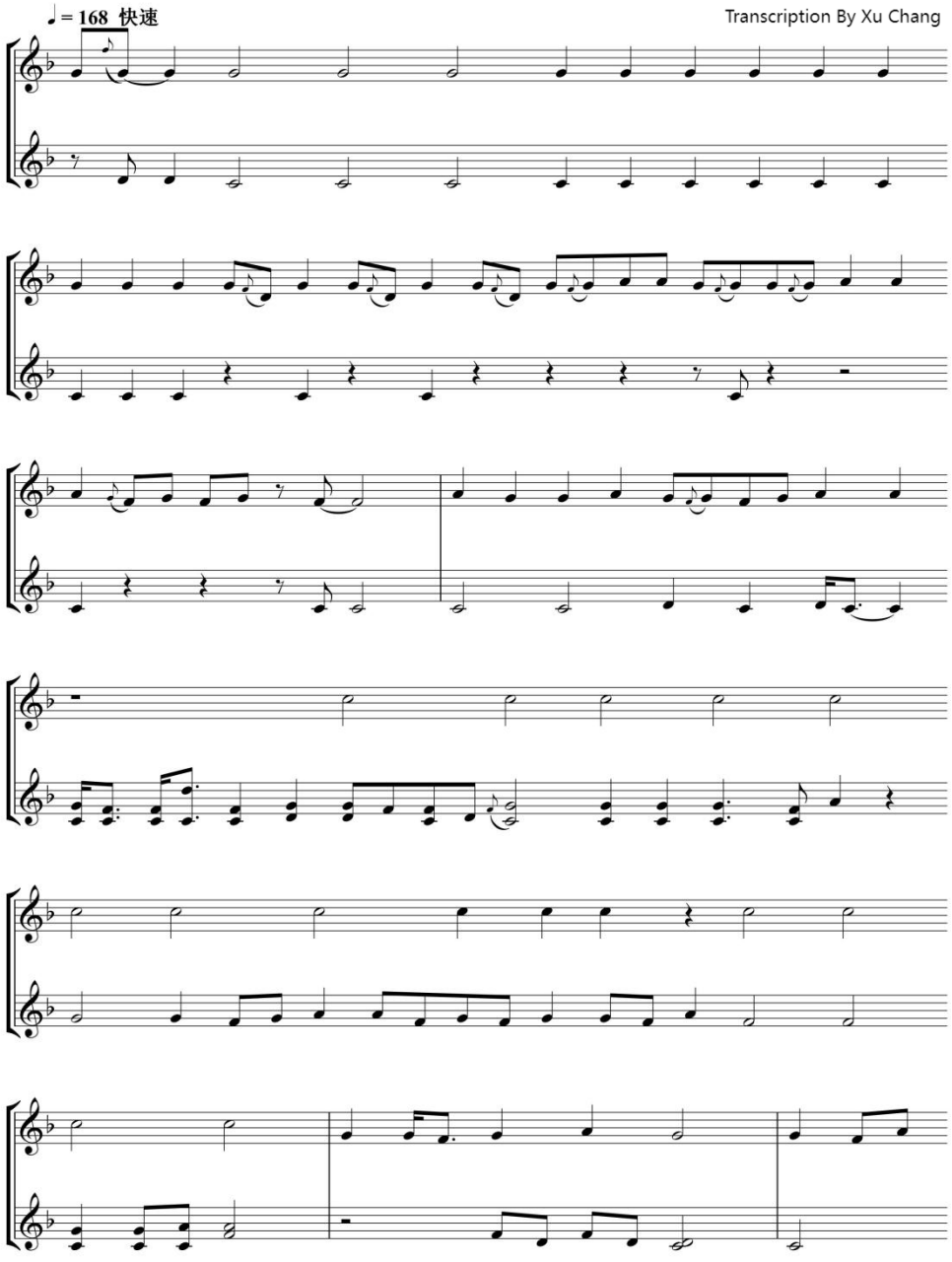
This piece of music is to pay tribute to the Miao compatriots who died during the migration, asking them to bless everyone to cross the river smoothly. Although the piece is faster in speed, the density of the notes is low, and it is dominated by quarter and half note long notes, so it does not sound fast. This music is popular in Weining County, Bijie City, Guizhou Province. The sounds of the six-pipe Lusheng are listed as: sol (bass), la, do, re, mi, sol. The music sheet is shown below.

迁徙组曲•过江调（三）

Migration Suite Cross-River Tune (3)

♩= 168 快速

Transcription By Xu Chang



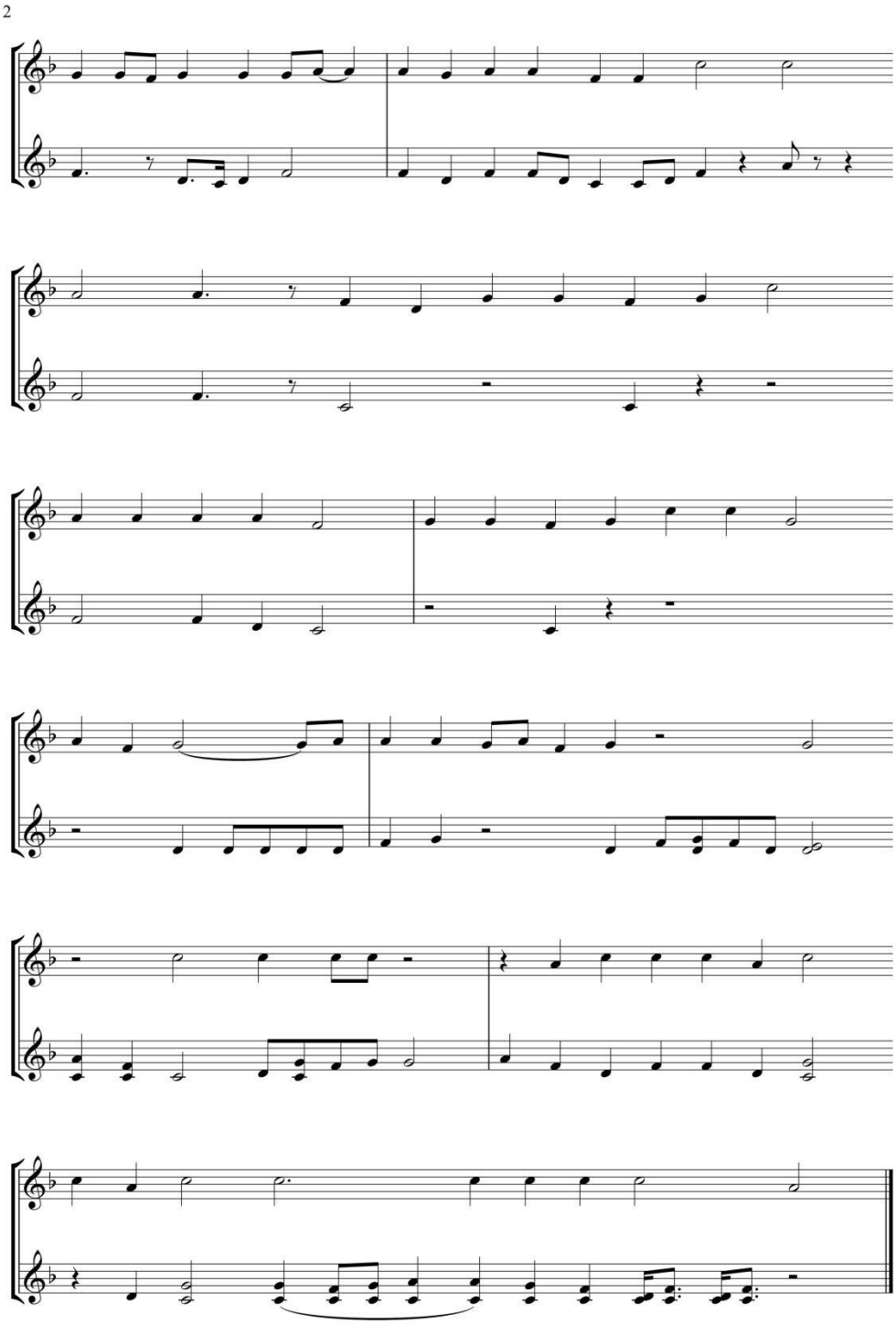


Figure 92. “Migration Suite Cross-River Tune"(3)

Source: Xu Chang

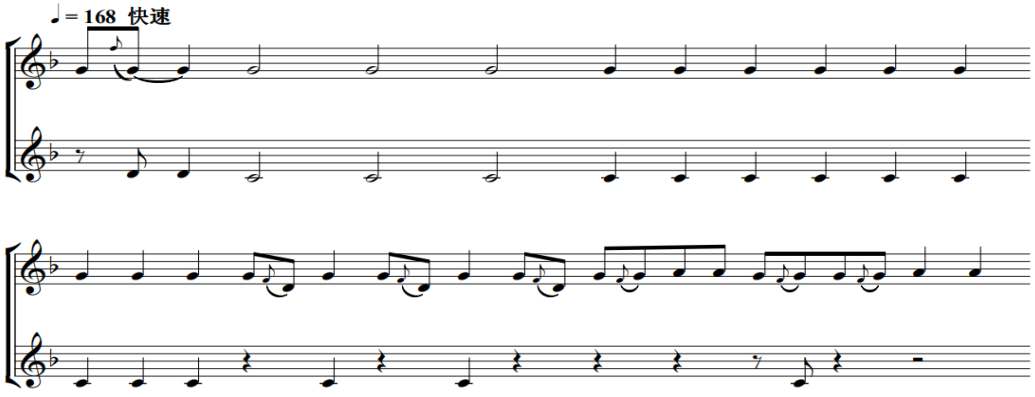
This Lusheng song describes all kinds of difficulties and obstacles encountered by the ancestors of the Miao people during the great migration process. Here are the lyrics that accompany this Lusheng song: Where did my ancestors live? The old men said, "I live in the plain, which is wide and wide." The fields were neat and lined up on the plain. Rice is yellow and cotton is white. There's food and clothing.

"Migration Suite Cross-River Tune" (3) This piece is A free beat music, the mode is A Jiao pentatonic mode. The whole music uses a large number of repeated sounds, adding grace notes before part of the eighth notes, so that the music sounds as if the Miao people are working together to unite the sound when crossing the river.

Guizhou Lusheng Crossing River Tune is a unique form of folk music, with its deep melody and rich emotional expression in Guizhou music culture unique.

First of all, the melody of Lusheng Crossing the River is unique and full of charm. As the main musical instrument, the Lusheng has a deep and melodious tone, which can well express the folk characteristics and humanistic style of Guizhou. The melody of the Crossing Tune fluctuates and fluctuates, with both passionate highs and deep lows, showing the perseverance and optimism of the Guizhou people. Secondly, the rhythm of Lusheng Crossing the river is strong and full of power. Guizhou's music is bright and dynamic, which is fully reflected in the Lusheng Crossing River Tune. Whether it is fast rhythm dance music or slow rhythm lyrics, it is full of a strong sense of rhythm, making the music more infectious.

The song is a quick crossing of the river. A Jiao in pentatonic mode. The first phrase focuses on the pure fifth interval composed of Zhi C and Shang G.The sound effect of pure fifth harmony is first expressed in its harmonious timbre.



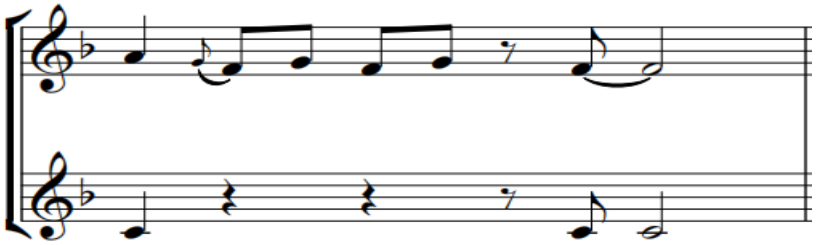
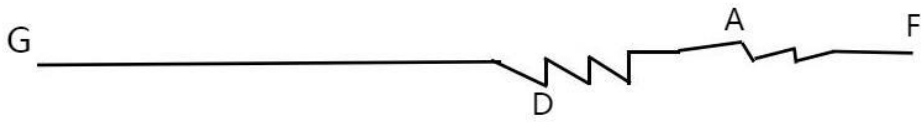


Figure 93. The first phrase

Source: Xu Chang

Solo Line (Upper line)

Range From D to F (a three interval)



Tempo Presto (♩=168)

Lower Line

Range From C to D (a two interval)

Tempo Presto (♩=168)

The sound of this harmony is full and powerful, giving a strong sense of harmony and stability. In music, fourth- and fifth-degree harmony is often used to enhance the expression of music, making music more vivid and powerful. In addition, their acoustics are also reflected in their wide vocal range. This kind of harmony can be extended from the low register to the high register, giving a broad feeling. In music, pure fifth harmony is often used to create a grand musical background that makes the music more colorful. At the same time, it is often used as a power source for music, creating tension and impact during the climax of the music. The Shang sound G in the first phrase has been added several times before the second appoggiatura, and the addition of the second appoggiatura increases the expression of

the music. By adding the appoggiatura, it makes the original melody livelier and enhances the dynamic and expressive force of the music. This grace note can make the melody more colorful and increase the atmosphere of the music. Secondly, the second degree of appoggiatura changes the original smooth rhythm of Erba, adds more mysterious color, and at the same time can reflect the style of Guizhou folk music, enhance the expression of music, and make the music more diversified. When a purity interval appears at the climax of a musical piece, this interval is usually amplified to increase the tension and impact of the music. As phrases and emotions develop, the rhythm changes. From the first half notes to quarter notes and eighth notes. It makes the mood of the music tenser and more intense, and finally returns to calm, which is the noble people's memory and sorrow for the dead people and the memory of the past history.

Guizhou Lusheng Crossing River Tune with its unique music style and rich forms of expression, together constitute its unique charm. It has become an important part of Guizhou music culture and a treasure of Chinese national music.

Intermediate technique works：

1)"Lahu Hulusheng Dance"

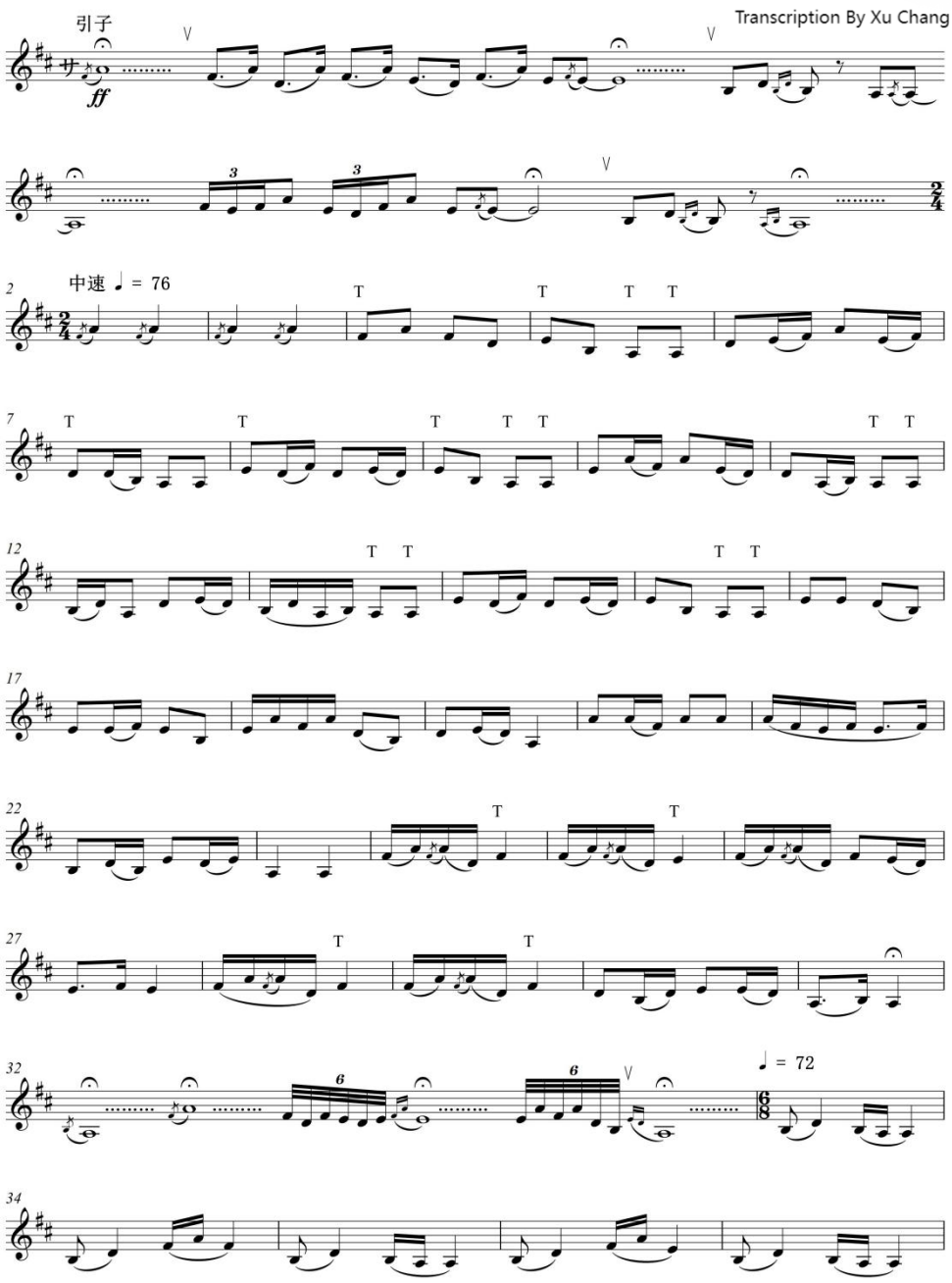
2)"Dragon and Phoenix Becoming Lucky"

"Lahu Hulusheng Dance"

Lahu Lusheng Dance is a representative folk dance of the Lahu nationality, integrating religion, etiquette, life, entertainment and art, vividly demonstrating the spiritual style of the Lahu nationality and the characteristics of "tiger hunting nation", and is an important part of the splendid culture of the Lahu nationality. This music is also for dance accompaniment music, has a strong dance characteristic, has a strong sense of rhythm and repetition, and the rhythm has the characteristics of diversification. The score is as follows.

拉祜葫芦笙舞
Lahu Hulusheng Dance

Transcription By Xu Chang



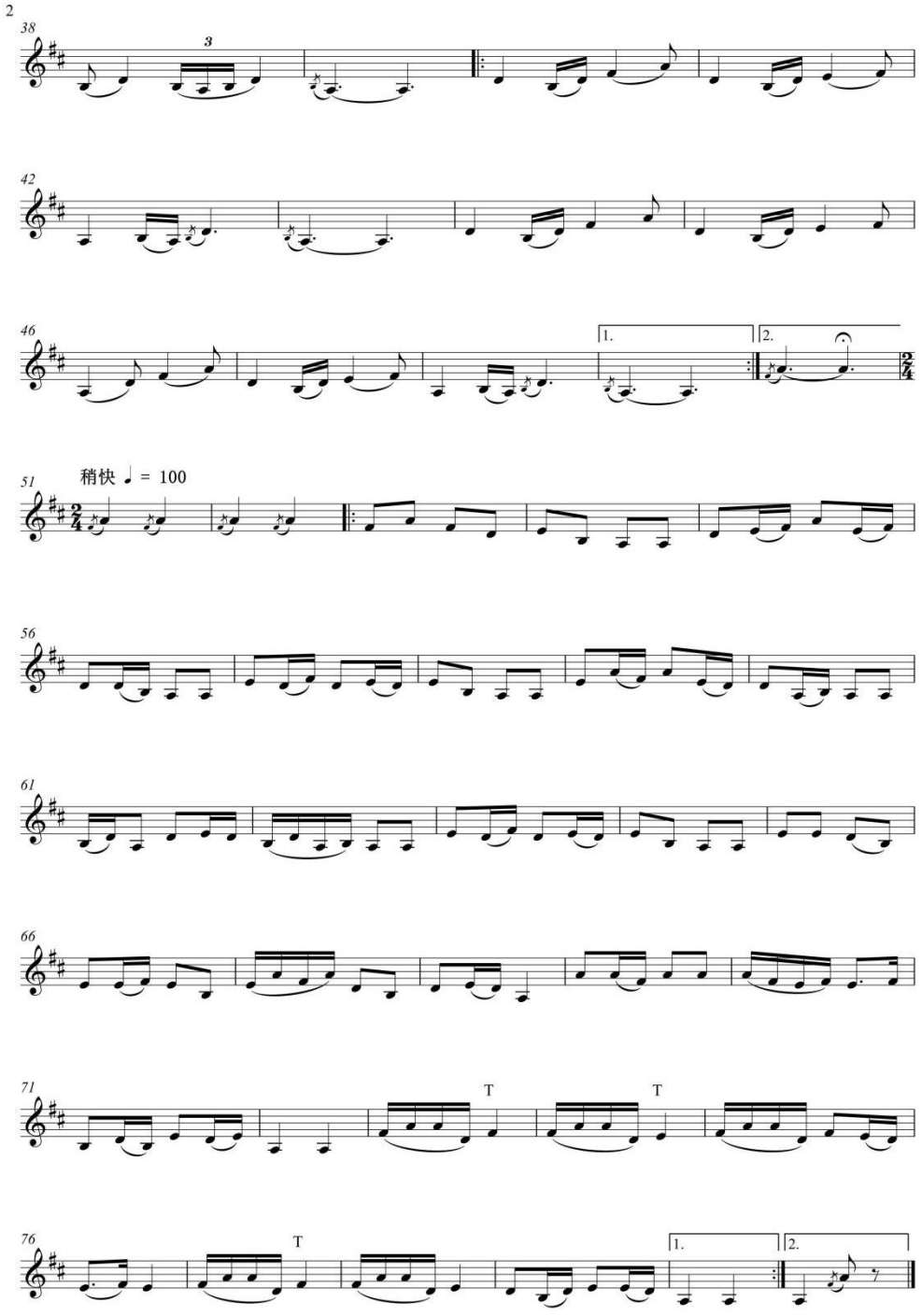


Figure 94. "Lahu Hulusheng Dance"

Source: Xu Chang

The Lahu Lusheng Dance is a typical three-segment structured musical form, which contains a large number of single articulation techniques and appoggiatura

techniques, and is a dance music with a strong sense of rhythm. The musical form of this piece is shown below:

Table 6. The Musical sections of *"Lahu Hulusheng Dance"*

1	2	3	4
1	2-32	33-50	51-81
Introduction	A	B	A’

Source: Xu Chang

The first measure of Lahu Lusheng Dance lasts two lines in the score, broken time, and the intensity is ff. It begins with a long note with a grace note, followed by a continuous dotted rhythm after ventilation and a long note with a free extension followed by a complex triplet rhythm. Similar to traditional Chinese folk songs and dances, this prelude arouses the audience's interest and curiosity through the creation of atmosphere, and the use of some special rhythms leads to the following main melody.

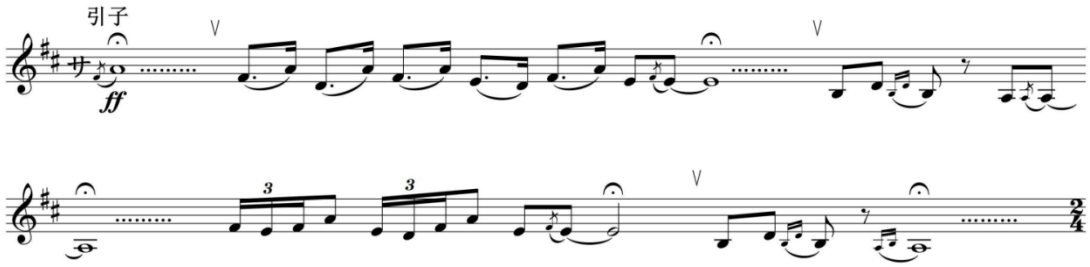
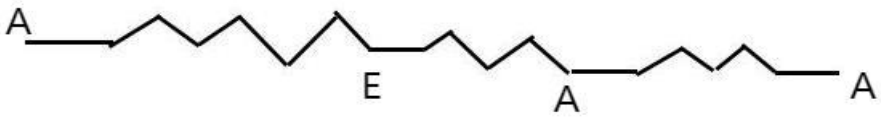


Figure 95. The prelude of Lahu Hulusheng Dance

Source: Xu Chang

Solo Line

Range From A to A (a eight interval)



A is measures 2-32. 2.3 of them is a two-measure rhythmic transition that helps to enhance the overall coherence of the music. Make connections between different

themes to avoid the music sounding like a series of isolated parts. And switch between different emotions or emotions. By changing the rhythm of the music, you can help guide the listener from one emotion to another, creating emotional variations and layers in the music. The fourth measure begins to enter the main melody of the work, with the eighth note with a single accent and rhythmic stress and the first eight and then sixteen rhythms dominate. This rhythm is very dance-like, where the 2/4th beat has two beats per measure, which is very common in dance music, so that dancers can more easily cooperate with the dance movement. The arrangement of the strong and weak beats of the first beat of each measure provides a stable rhythmic basis for the dance. This arrangement of strength and weakness can also make the dancer's movements more clear and powerful. The last verse of verse A, verse 32, is also a connecting verse, returning to the loose rhythm and setting the stage for the introduction of verse B.

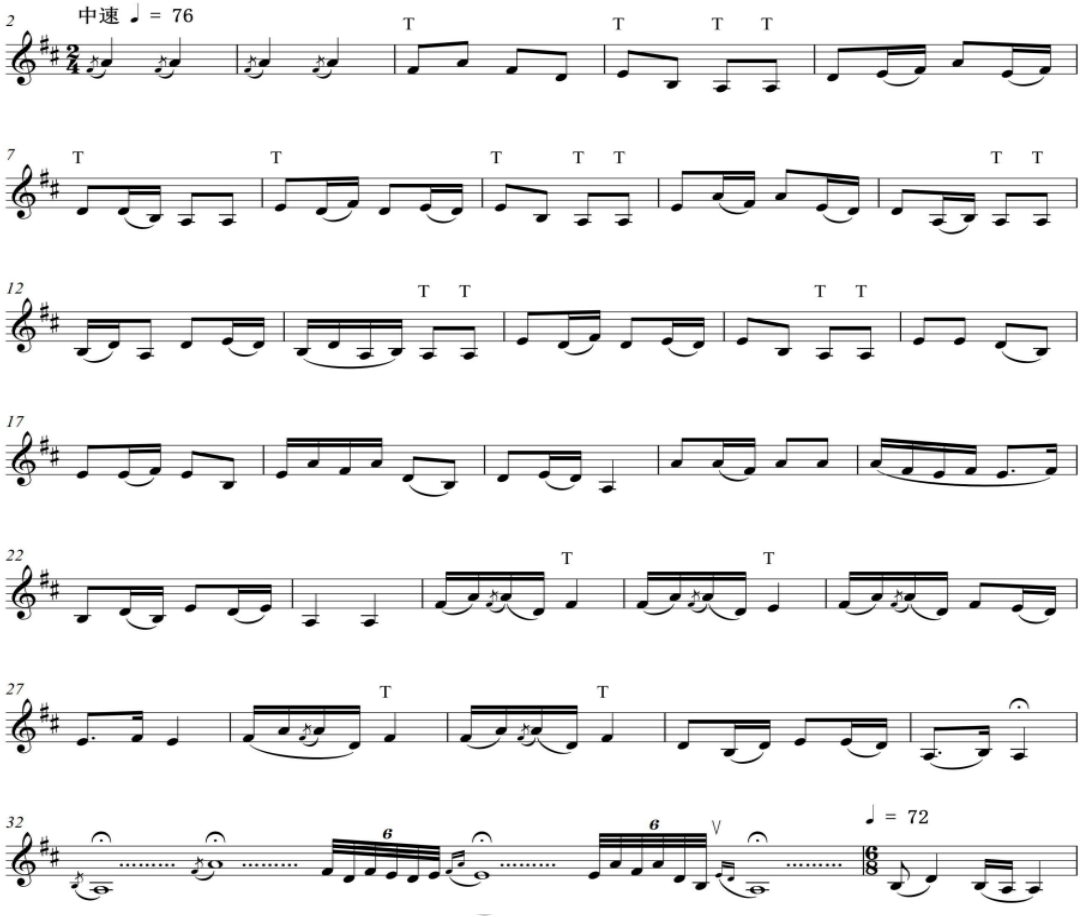
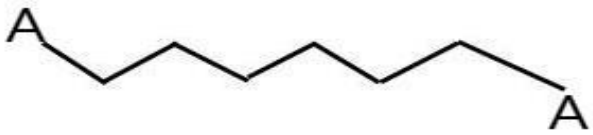


Figure 96. A period of Lahu Hulusheng Dance

Source: Xu Chang

Solo Line

Range From A to A (a eight interval)



Tempo Moderato (♩=76)

Section B is 33-50 measures, the speed is 72, and the beat has changed from 2/4 to 6/8 meters. The rhythm of 6/8 beat has a typical compound duple time, the speed is more soothing than that of section A, the melody lines are longer and more beautiful, and the triple beat dance music is elegant and smooth. The division of 3/8 nots of each measure enable the dance movements to unfold in a relatively even rhythm. Presenting a sense of continuity and relief, in 6/8 time there is usually an emphasis on the first beat of each measure. This accentuates the beginning of the movement and gives the dance a definite sense of rhythm and the smooth rhythm of triple time is often used to express soft, sensual emotions. The dancer can convey emotion through undulating movements and soft gestures that complement the beat of the dance. There are fewer notes on the score than in paragraph A, which requires the player to breathe more smoothly, with very precise ups and downs.

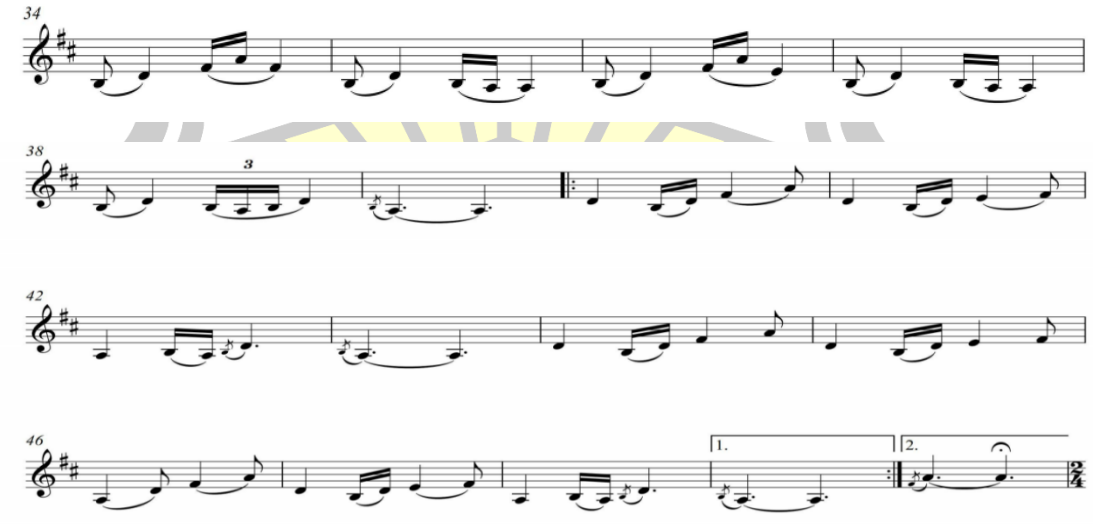
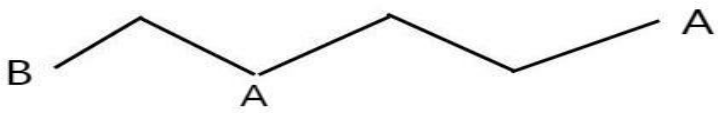


Figure 97. B period of Lahu Hulusheng Dance

Source: Xu Chang

Solo Line

Range From A to A (a eight interval)



Tempo Moderato (♩=72)

The last paragraph A 'is measures 51-81, which is the reproduction of A, also containing two transitional measures, and the notes and rhythm after it are basically the same as that of A, and the speed is returned to 100, faster than that of B, emphasizing the theme, and the reproduction of the paragraph by reintroducing the musical material that has already appeared before. It creates a sense of unity, strengthens the theme, aftertastes the emotion and increases the effect of variation, enriches the connotation and expression of music works. It ends with a fast, rhythmic dance.

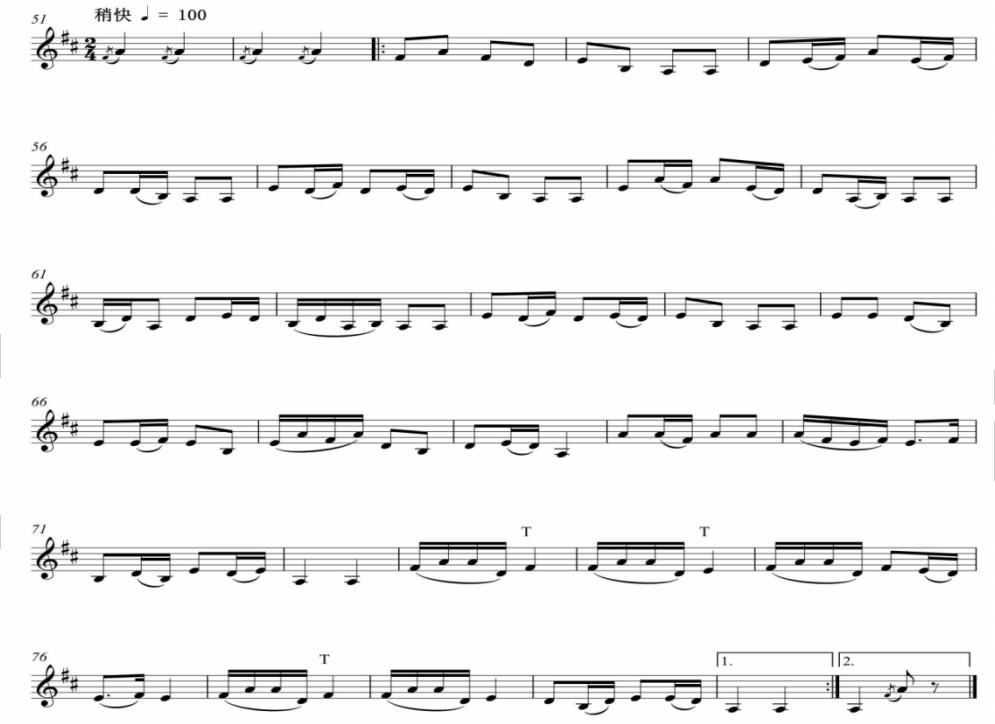


Figure 98. The last period of Lahu Hulusheng Dance

Source: Xu Chang

Solo Line

Range From A to A (a eight interval)

Tempo Allegretto (♩=100)

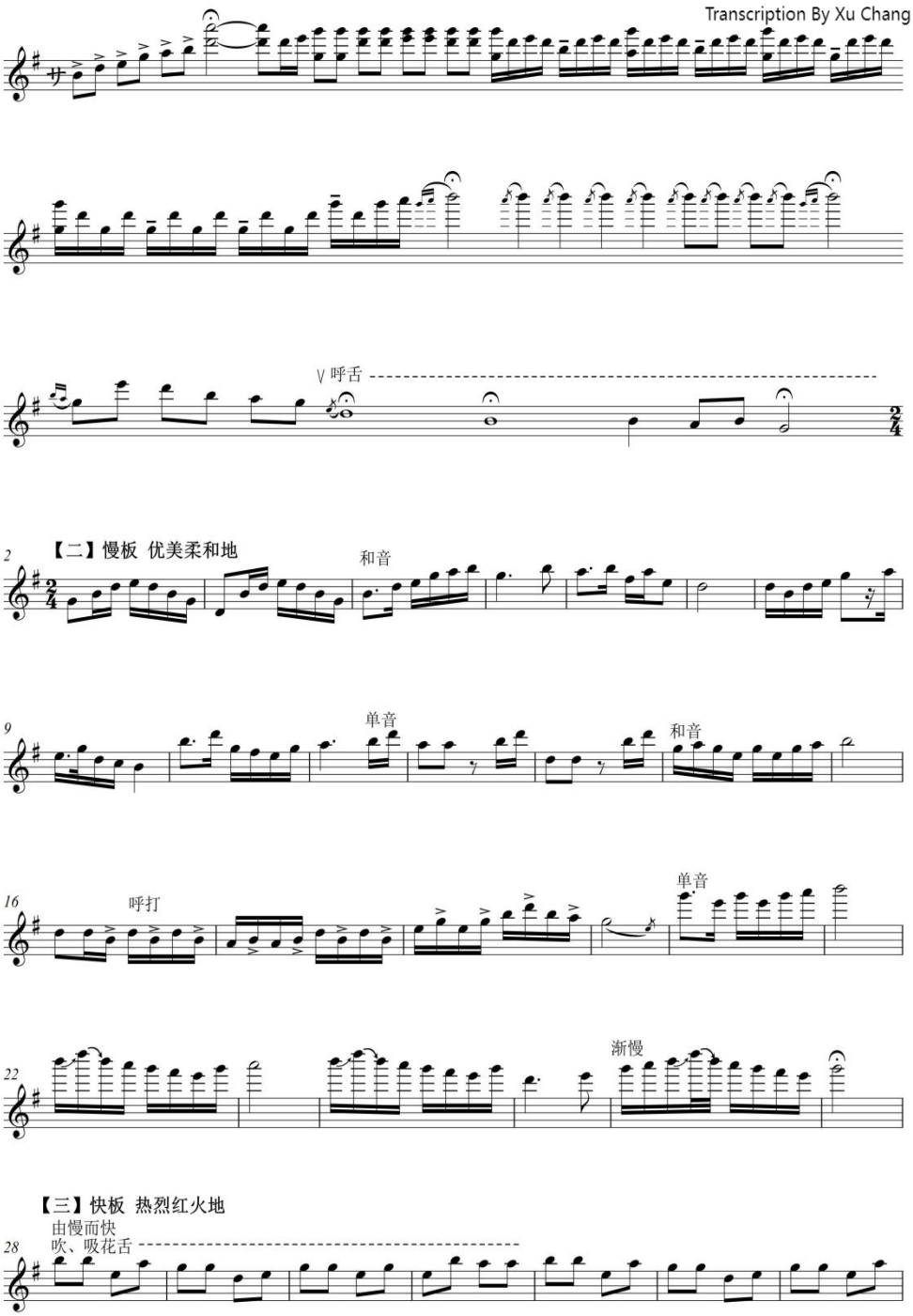
2) "Dragon and Phoenix Becoming Lucky"

“Dragon and Phoenix Becoming Lucky" is a happy music composed of folk Qupai, which is popular in the Central Plains of China. This work uses the free melody and the changing rhythm to reflect the yearning and symbol of the Chinese people for happiness and auspice. The musical score is shown below.

龙 凤 呈 祥

Dragon and Phoenix Becoming Lucky

Transcription By Xu Chang



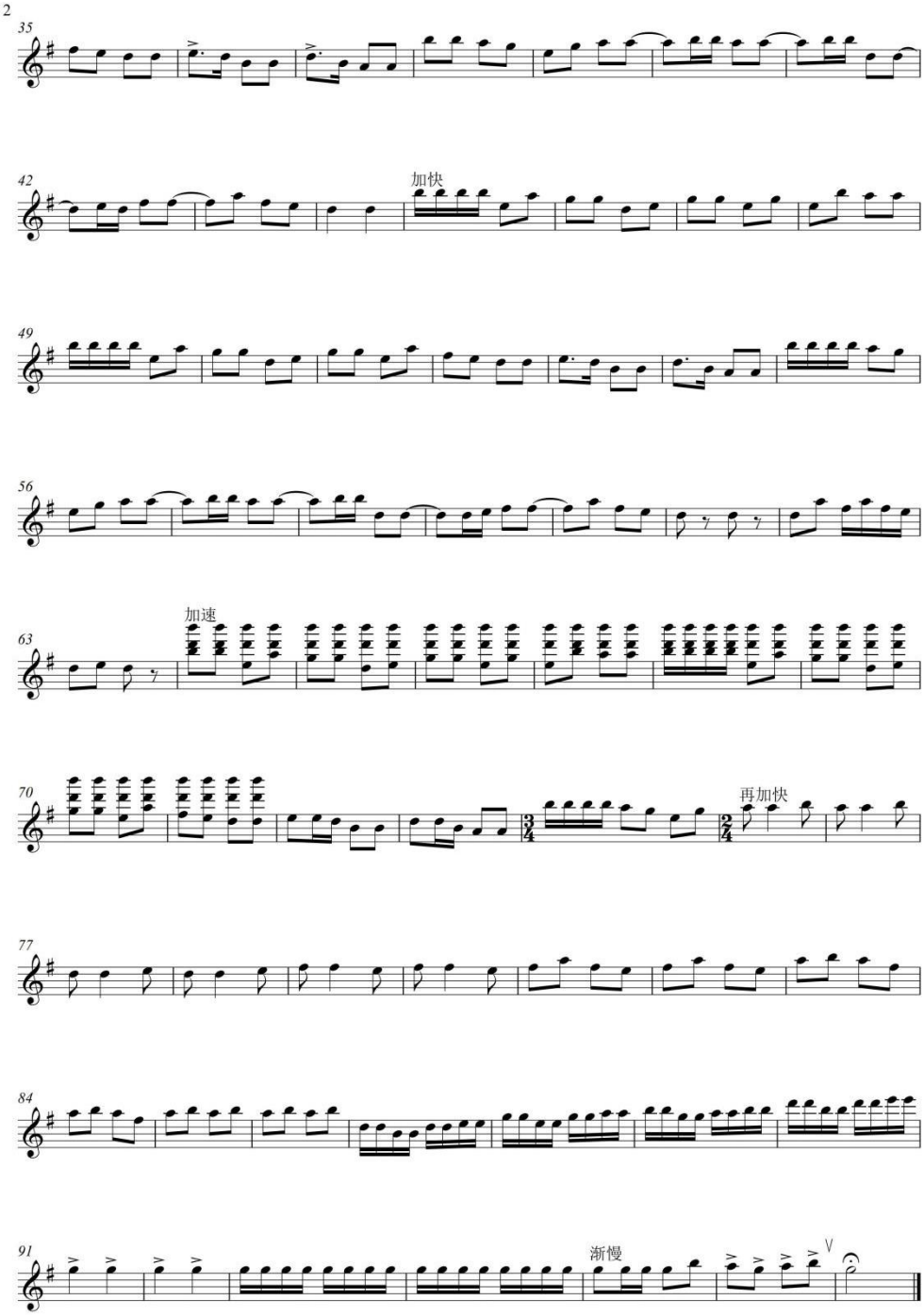


Figure 99. “Dragon and Phoenix Becoming Lucky"
Source: Xu Chang

"Dragon Phoenix Cheng Xiang" is an intermediate work, in addition to the variety of musical mood, techniques also include stress, decorative notes, Hu-she,

harmony, Hua-she, glissando, Da-yin and other techniques. The whole work is 97 measures, divided into prelude, A, B.

Table 7. The Musical sections of “Dragon and Phoenix Becoming Lucky”

Section	1	2	3
Measures	1	2-27	28-97
Form	Introduction	A	B

Source: Xu Chang

The prelude is the first measure (the first three lines), and the tempo is relatively free. It starts with a pentatonic accent scale, pushing straight up to the high notes for a series of rapid blows, then includes decorative notes and Hu-she, straight to the point. The mood is very hot, need to pay attention to the use of breath.

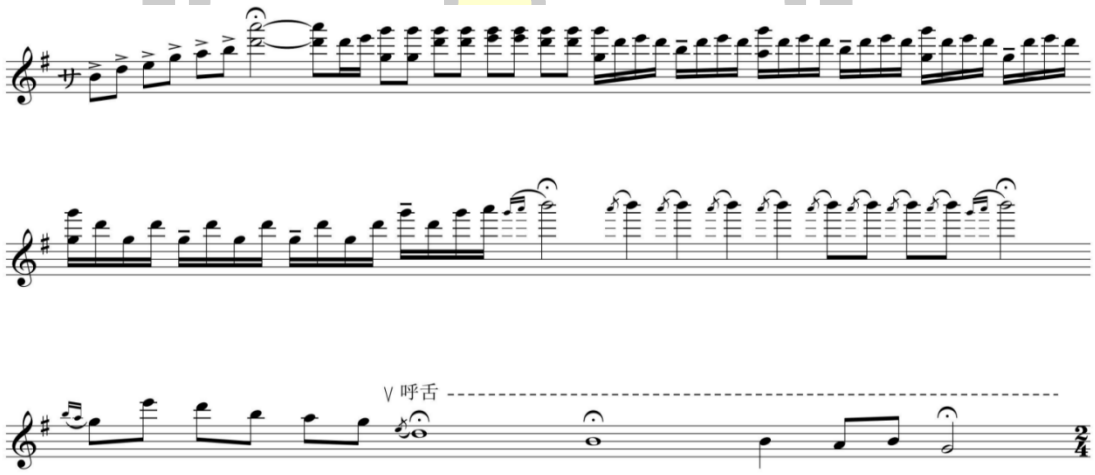
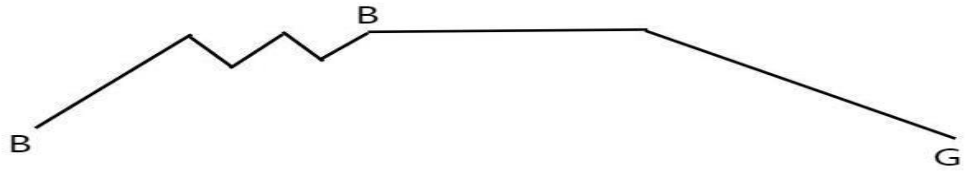


Figure 100. The prelude of Dragon and Phoenix Becoming Lucky

Source: Xu Chang

Solo Line

Range From G to B (a seventeen interval)



Tempo ad libitum

A is the adagio of the whole song, which needs to be played beautifully and softly. From measure 2 to measure 27, the playing of this section needs to be full of emotion, so we should pay attention to expressiveness when playing. Using music to express emotion conveys musical emotion through slight timbre changes, lengthening and shortening of intervals, and coherence of notes. When playing this part, dynamic changes can be properly carried out, that is, changes in the severity of the volume. This helps to create emotional highs and lows that enhance the expressiveness of the music. Riff A requires careful skill and emotional commitment, so repetition is important. First, get familiar with the tone and rhythm of the piece, and then gradually increase the expressiveness in order to better convey the emotion of the music.

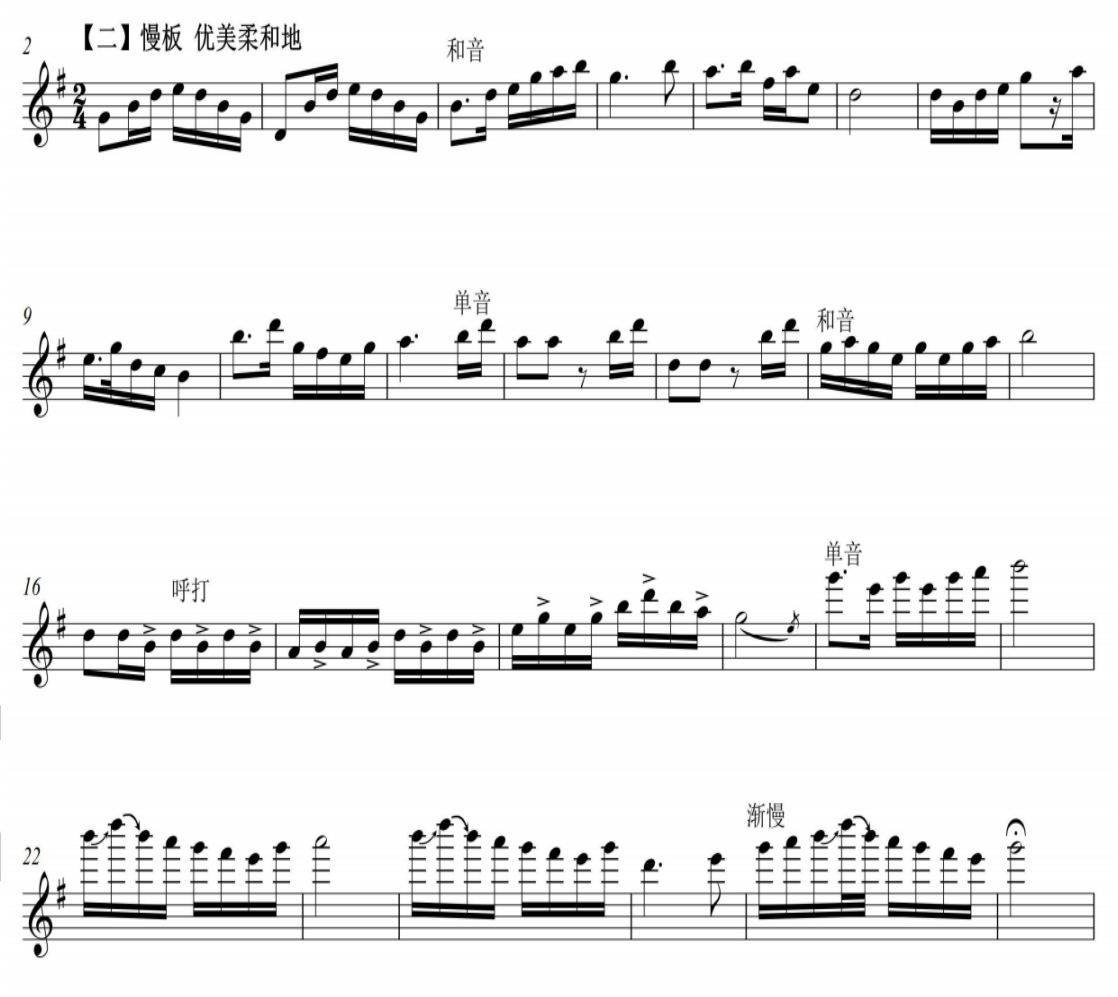
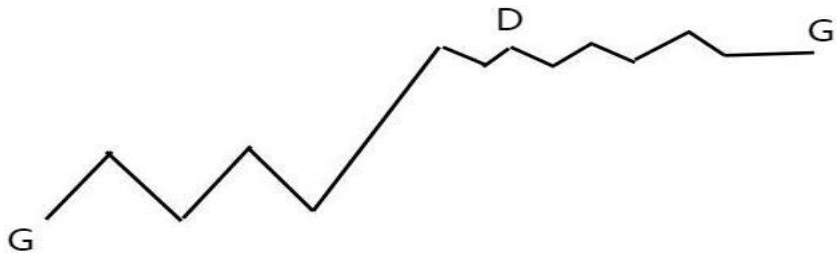


Figure 101. A period of Dragon and Phoenix Becoming Lucky

Source: Xu Chang

Solo Line

Range From D to D (a twenty two interval)

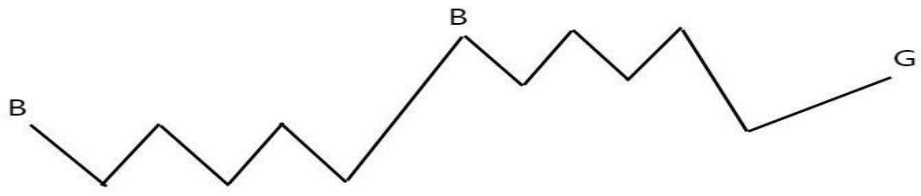


Tempo Lento （♩=52）

B is measures 28-97, which has five speeds and is the difficulty of this piece. From measures 28 to 44, the performer is required to make a wide range of accelerants from slow to fast, requiring very strong musical tension and slowly rising emotions, and cooperating with Hua-she, which is more difficult. measure 45 to 63 is the second speed, continue to accelerate, add a continuous sixteenth note playing, the overall pitch is also significantly higher than before, the playing of this section needs to pay attention to the sixteenth note clear playing, can not drop the note. measure 64 to 74 is the third speed, faster than before, the mood is higher than before, and the use of a large number of long-span three-tone chords to emphasize this warm atmosphere, like a dragon flying phoenix dance, very gorgeous. measures 75 to 94 are the fourth speed, the climax of the whole piece, when the speed reaches the fastest speed of the whole piece, the composer uses syncopation to represent the scene of people cheering, singing and dancing, looking forward to a better life. measures 95 to 97 are the last speed, and in the slow down the whole piece ends, and the aftertaste is endless.

Solo Line

Range From A to B (a sixteen interval)



Advance technique works:

1) "Blowing Lusheng and Singing Harvest"

2) "Miao Ling connects with Beijing"

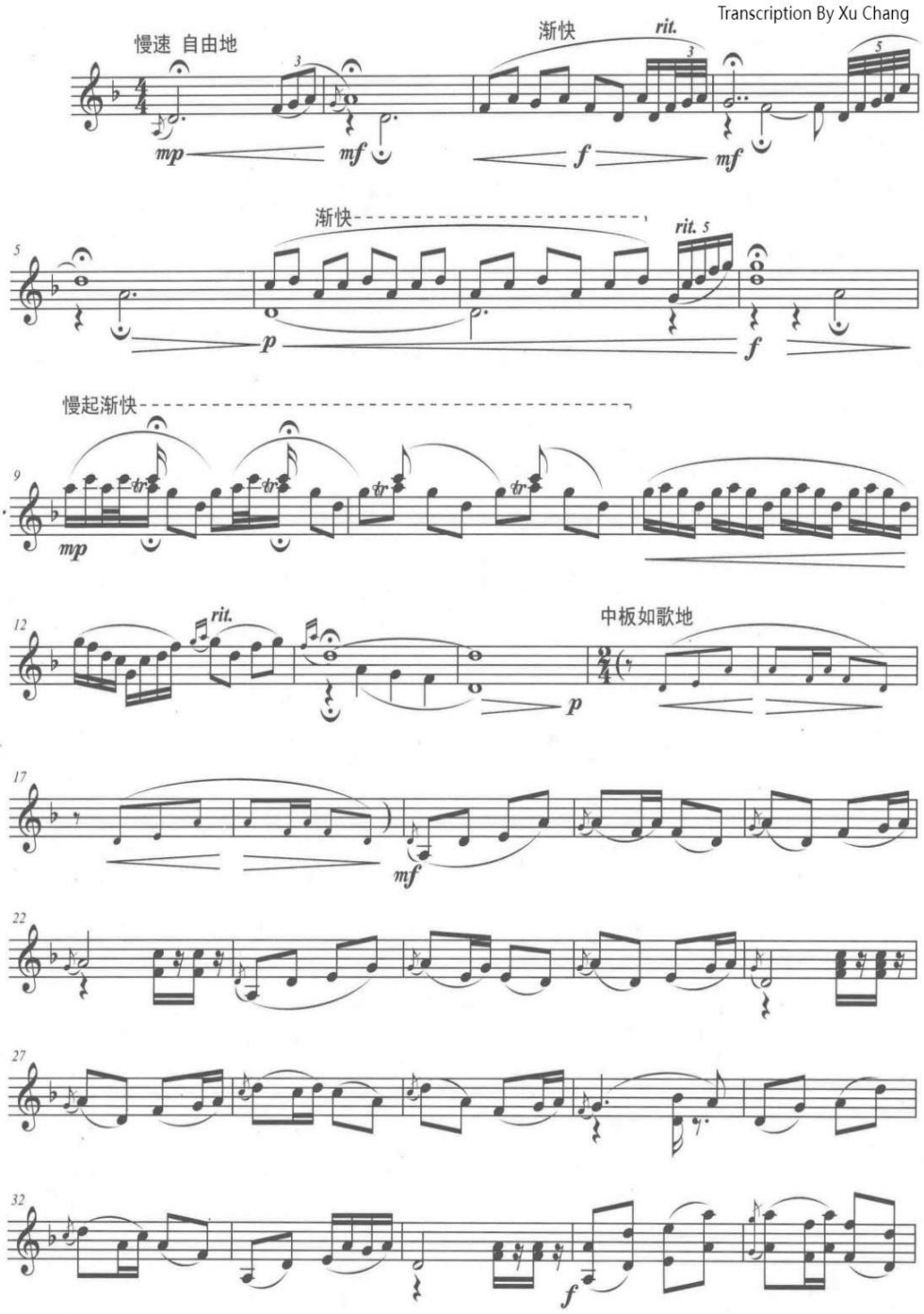
1) "Playing Lusheng and Singing Harvest"

"Playing Lusheng and Singing Harvest" is a solo Lusheng composed by Xu Chaoming, the sheng player and composer of Shanghai Conservatory of Music, and Lu Zaiyi, the composer. This work describes the scene of the minority nationalities singing and dancing in the festival. It shows the simple, warm and vibrant rhythm of minority music. The music uses Lusheng's powerful acoustic simulation effects to echo the high, medium and low multi-part sheng, and the happy scene of Chinese people's harvest seems to be in front of them. The more difficult parts of the music are the introduction and Da-yin parts; The easier part is in the back. The strength of the wind should be grasped well, and the practice way should be from strong to weak to strong to practice the breath. The body cannot be shaken. The score is as follows.

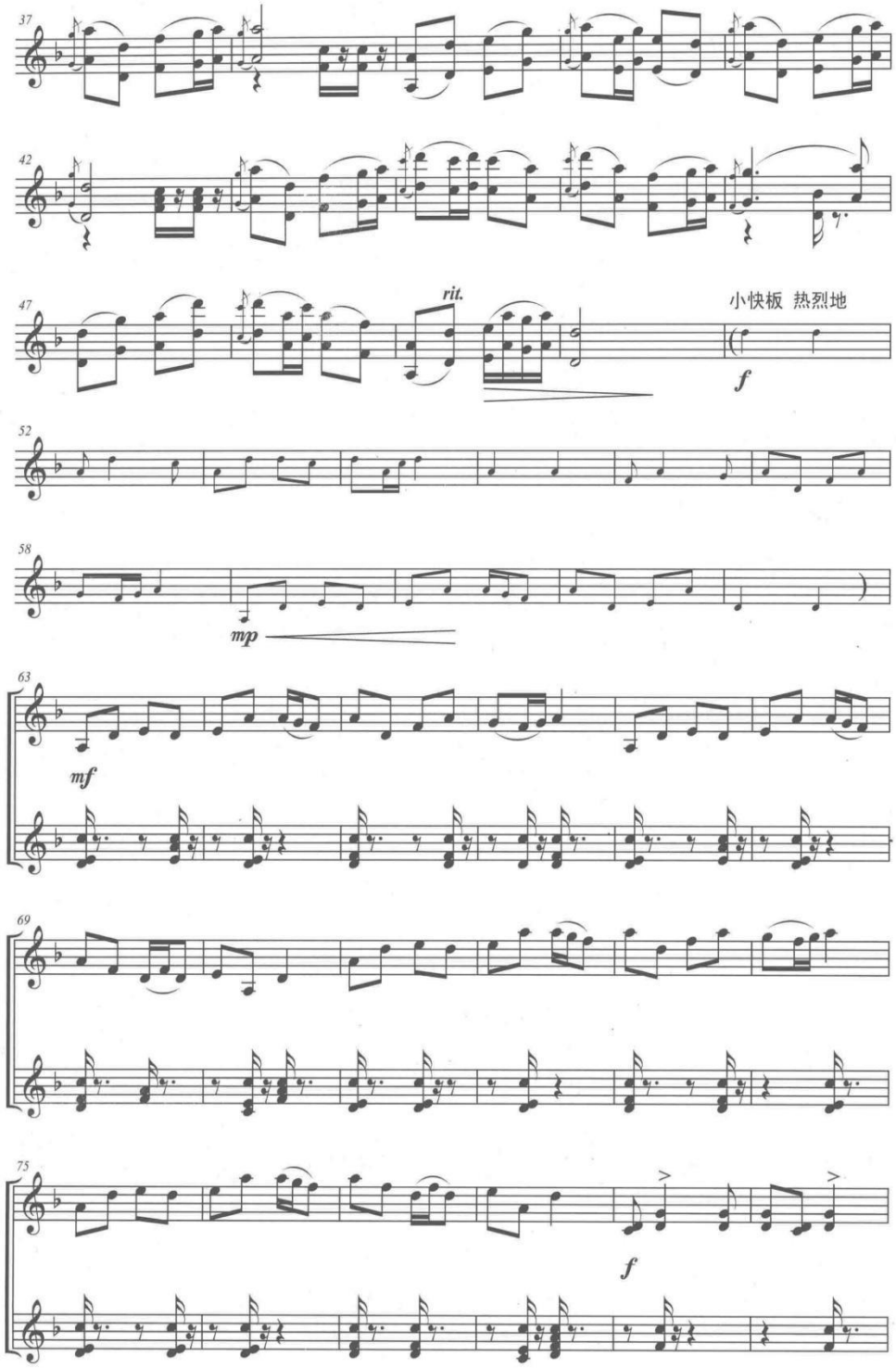
吹起芦笙唱丰收

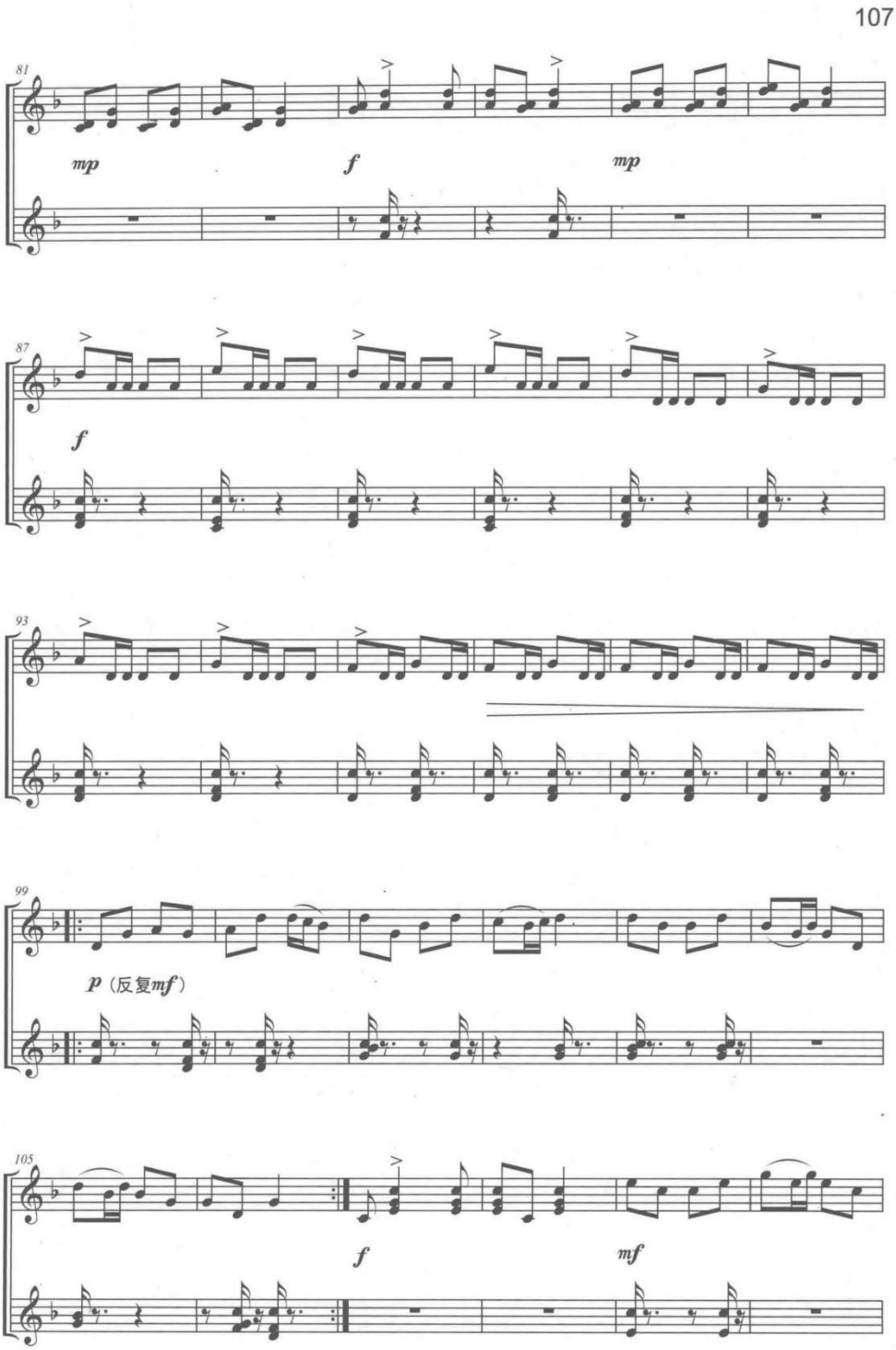
Blowing Lusheng and Singing Harvest

Transcription By Xu Chang



106

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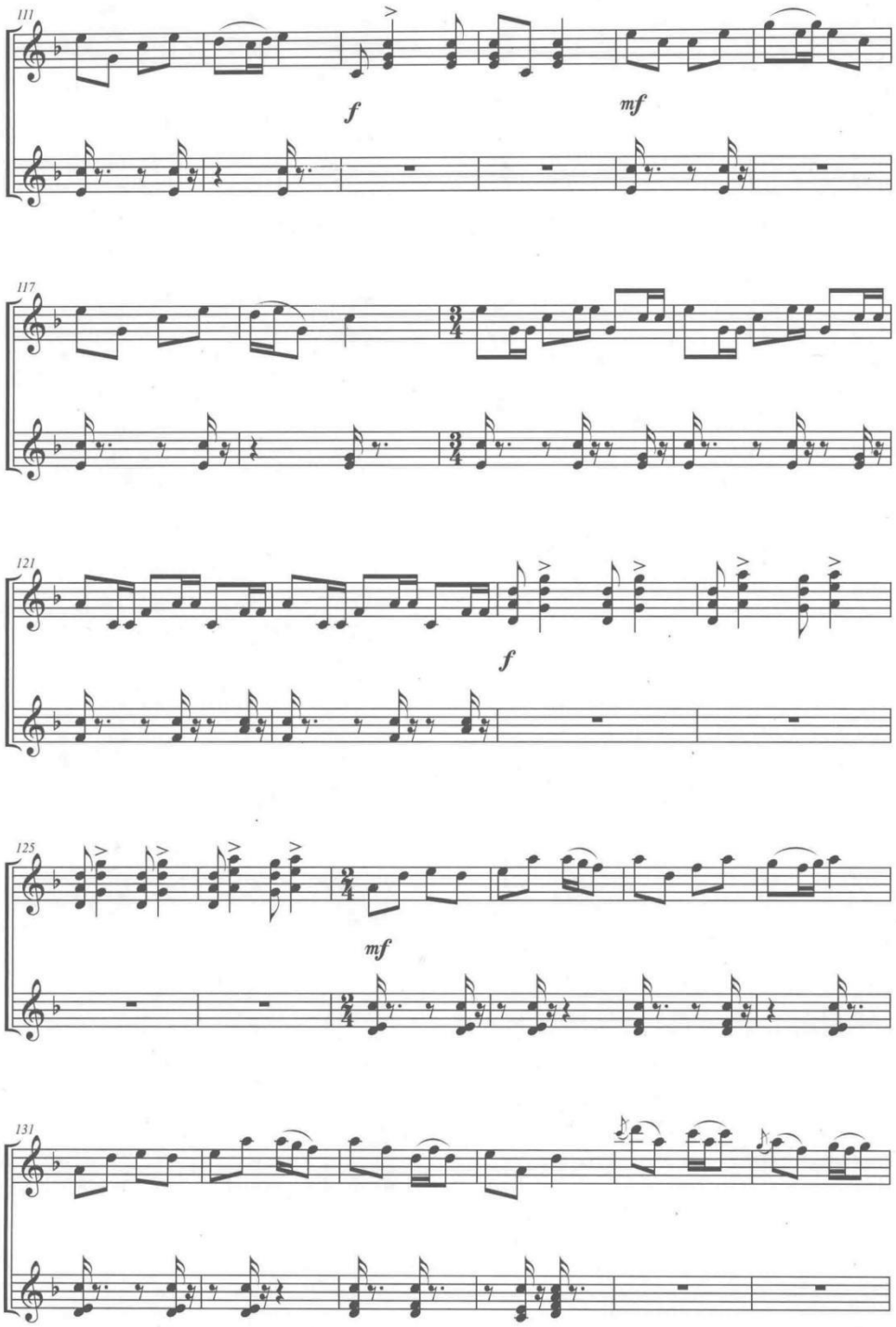
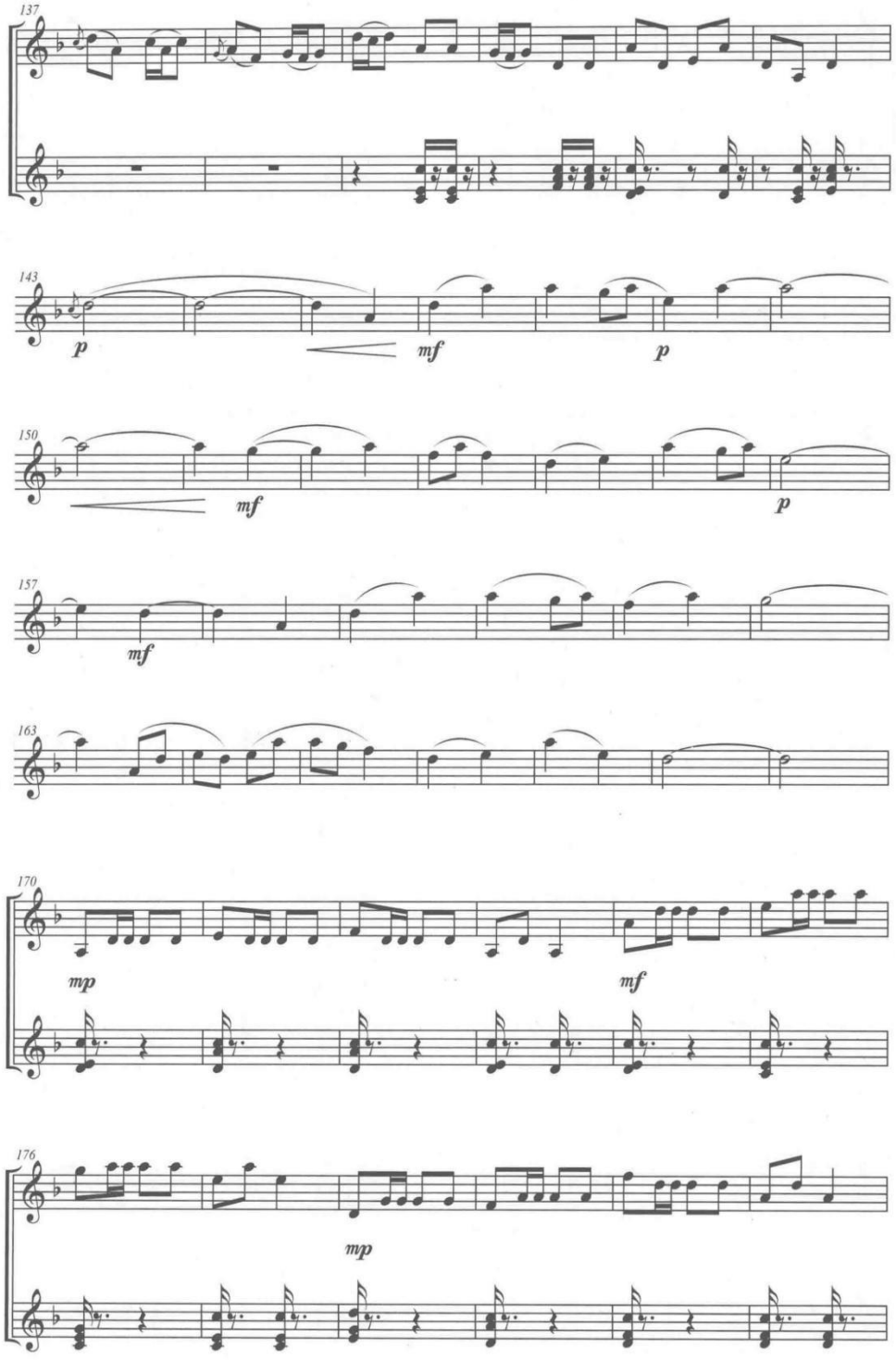
81
mp
f
mp
87
f
93
99
p（反复mf）
105
f
mf

108

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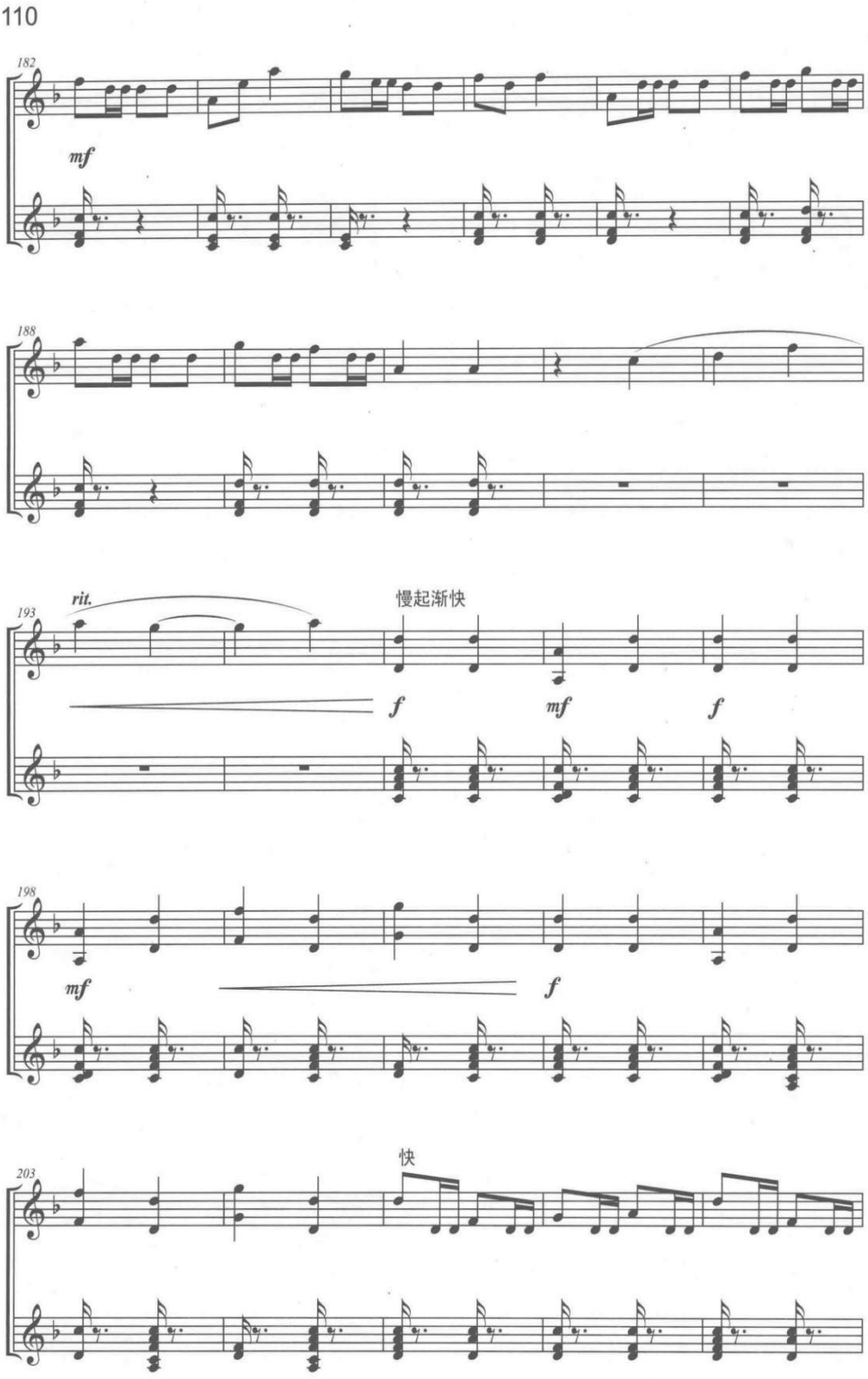
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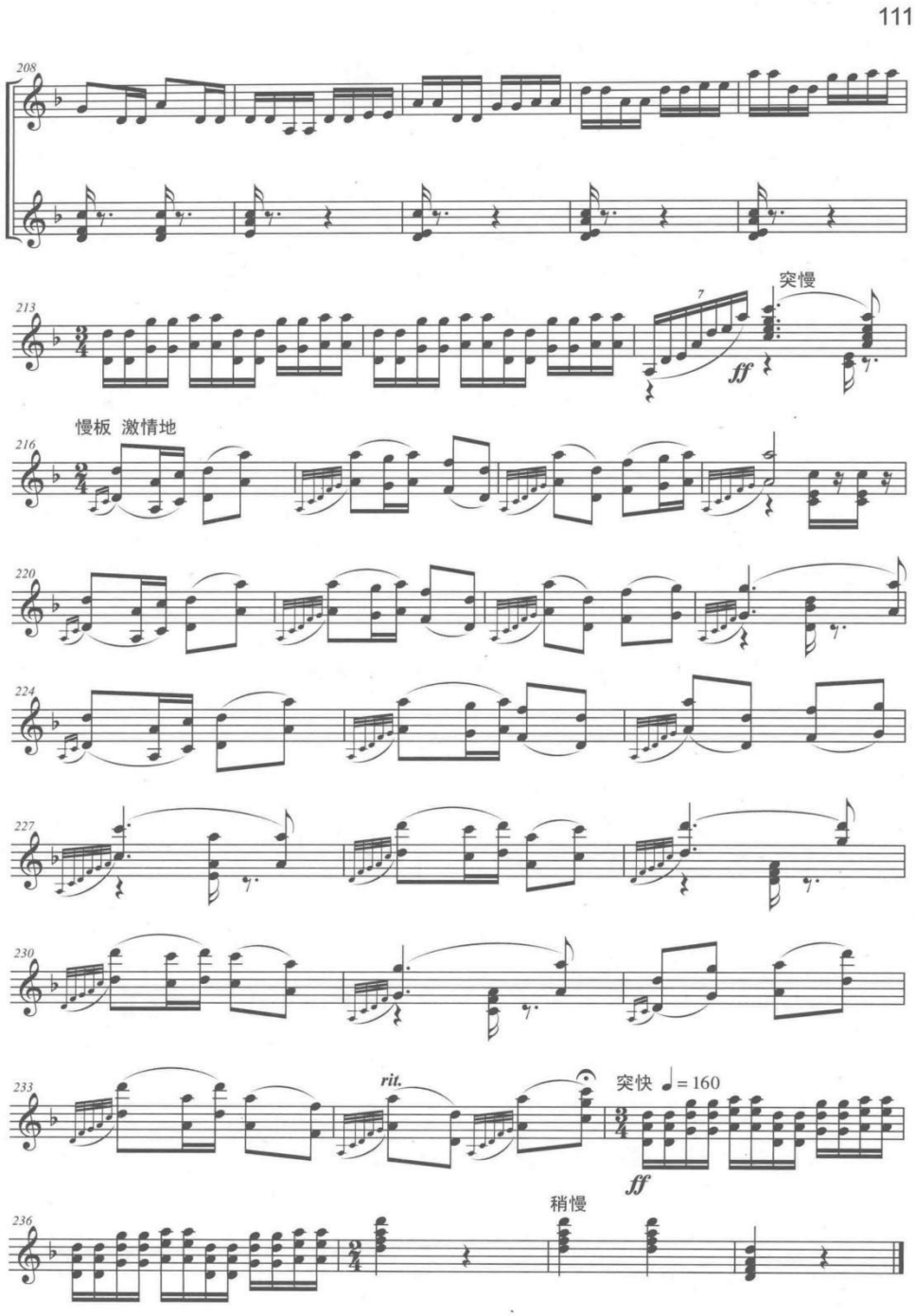


Figure 102. “Blowing Lusheng and Singing Harvest"
Source: Xu Chang

This piece of music is a highly difficult piece in Lusheng music. The whole piece is long, each paragraph has different thoughts and feelings, great emotional

fluctuations, obvious emotional contrast, and many playing techniques and difficulties, which poses great challenges to players' playing techniques and physical strength. The whole piece is 239 measure, divided into 9 sections. In the key of d minor. Below is a table of the musical forms of this piece.

Table 8. The Musical sections of “Blowing Lusheng and Singing Harvest"

1-14	15-18	19-50	50-62	63-142	143-169	170-215	216-234	235-239
Introduzione	transitionalparagraph	A	transitionalparagraph	B	C	D	E	coda

Source: Xu Chang

The Introduzione is 1 to 14 measure, and the tempo is mainly slow, but the beat is more free, with a lot of free extension symbols and fast and slow blowing symbols. It is as if the Miao people have just woken up from their sleep and have not yet entered into work life. Notes also range from sparse half notes and triplets to dense sixteenth notes. From the ninth measure on the pace gradually picks up and the notes become more dense, with the introduction of the vibrato heralding the main theme.

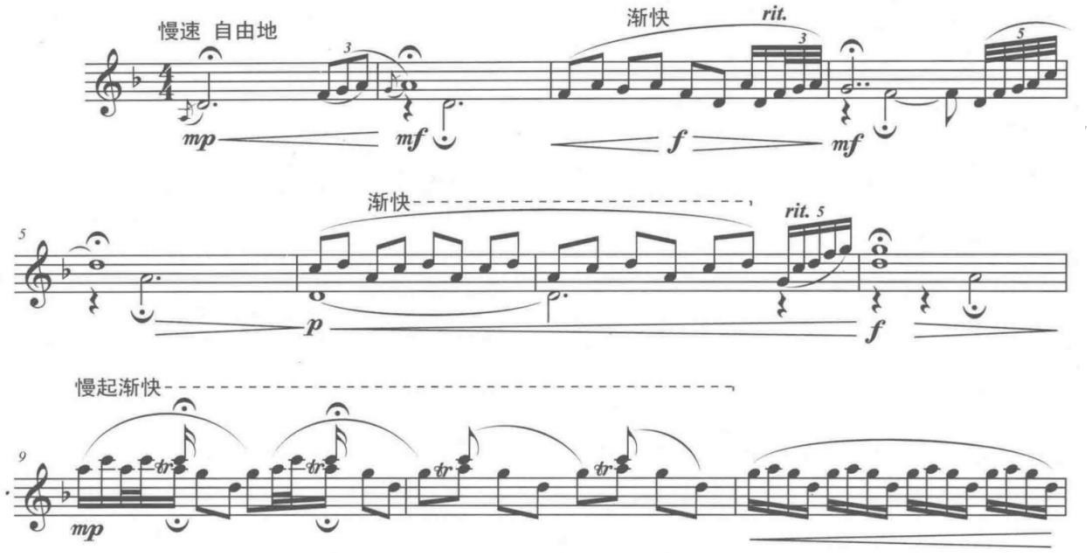
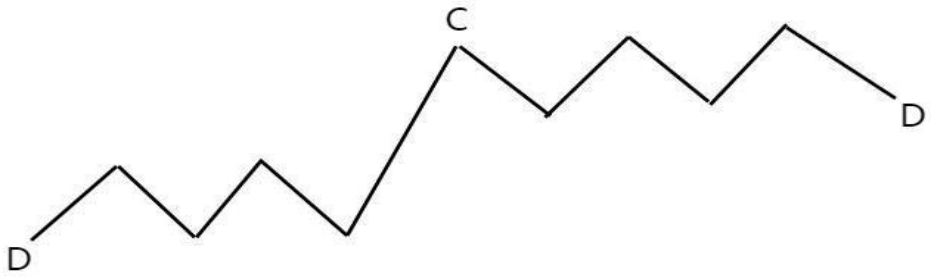


Figure 103. The Introduzione of Blowing Lusheng and Singing Harvest

Source: Xu Chang

Solo Line

Range From D to C (a fourteen interval)



Tempo ad libitum

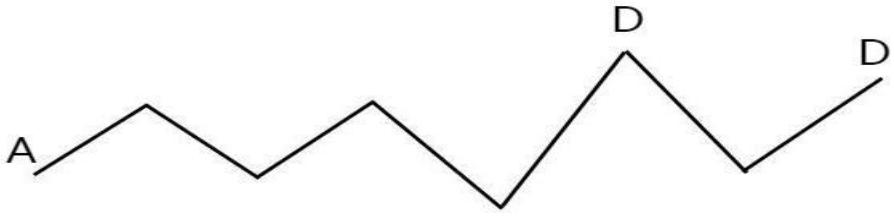
Measure 15-18 is a small interlude, the speed is the middle plate, it should be noted that the same melody should be played twice in a row very beautiful like a song, paving the way for the later melody.

Measure 19 to 50 are the theme of the work, which uses a large number of eighth notes and first eight and then sixteen rhythmic patterns. It should be noted that there are a large number of decorative notes in the theme, and each grace note needs to be played clearly in practice, and the entry of grace note should be just right in the rhythm. When playing the "Da-yin" technique, it is necessary to press multiple fingers on the drawing holes of the fingering at the same time so that the sound is clean and pure. This piece of music is active and beautiful, describing the happy mood of the Miao people. A large number of octaves began to appear in measure 35, which was not a small challenge for the breath control of the player. The fingers should be pressed vertically and attention should be paid to the breath control when blowing. 49

The slowing down before the end of this paragraph also signals the coming of the next paragraph.

Solo Line

Range From A to D (a eighteen interval)



Tempo Moderato（♩=52）

Measure 50 to 62 are also a small interlude, different from the previous, the speed becomes a small allegro, the mood is more intense, the use of syncopation and the first eight and then sixteen rhythm to add to the lively atmosphere.

Measure 63 to 142 are the B of the piece, of which measure 63 to 86 are the first short, fast and emotional. At the beginning, two melodies with the same theme but different pitch are played twice, which reflects the joyful atmosphere of the work. In terms of rhythm, it mainly uses eighth notes and first eight and then sixteen rhythms and adds accompaniment chords for accompaniment. measure 79 adds a lot of syncopation and stress, and the musical language is full of songs and dances, depicting the happy scene of the Miao people dancing to celebrate the harvest. measure 87 began to enter a large number of first eight and then sixteen rhythm patterns, emphasizing the melody, and the happy atmosphere to a new climax. As shown in the following picture.

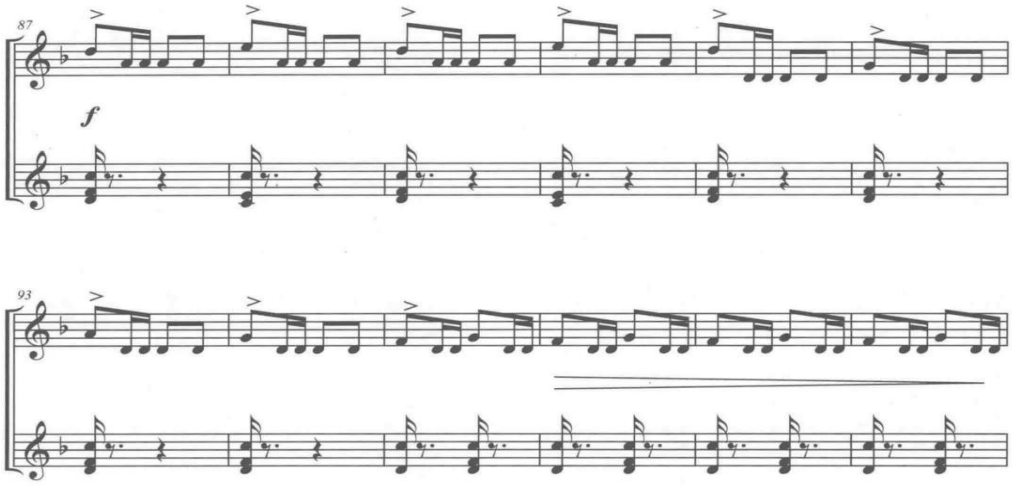
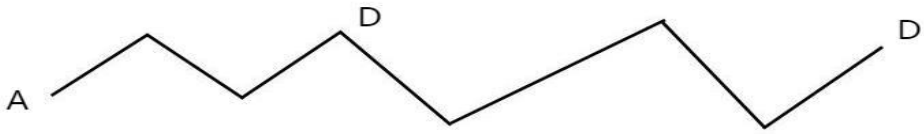


Figure 104. 87-98 bars of Blowing Lusheng and Singing Harvest

Source: Xu Chang

Solo Line

Range From A to D (a eighteen interval)



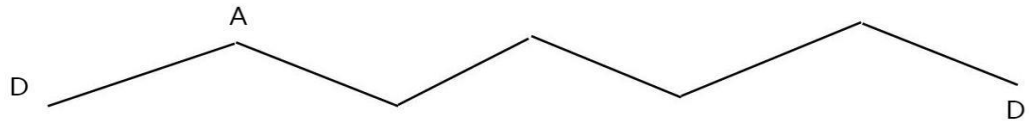
Tempo Allegretto（♩=108）

Measure 99 begins by repeating the theme of measure 63 but in order to emphasize this repetition, the composer changes the key. After changing the key, it develops until measure 142 brings the melody to its peak.

Measure 143 to 169 is a lyric passage, very singing, using long lines to describe the Miao people's joy of harvest and singing and praising the country and the nation. Strong and weak changes are very large, each phrase starts from p (weak) and gradually strengthens to mf (medium strong), continuous phrases. When playing, pay attention to the coherence of the breath and the fluency of the melody. Exaggerated performance, pay attention to speed control, the melody line should be ups and downs, there must be a certain emotion in it,

Solo Line

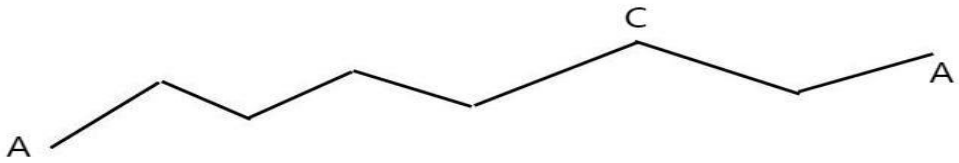
Range From A to A (a eight interval)



Measure 170 to 215 are a fast passage, using the motivation of the previous main melody for small variations, starting in measure 209 with a rapid succession of sixteenth notes that gradually increase the pitch and lead to the next gorgeous adagio.

Solo Line

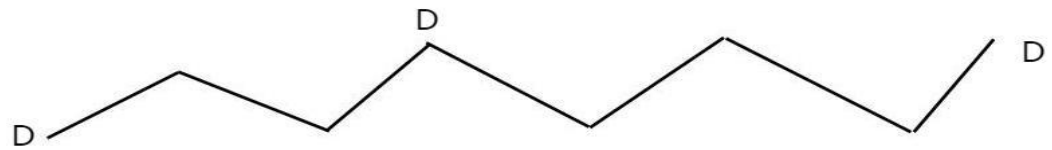
Range From A to C (a ten interval)



Measure 216 to 234 are adagio sections, which use a large number of grace notes with octaves, slow and passionate performance, full of emotions, expressing people's infinite yearning for a better life in the future. It's the beginning of the end of the piece. The last measure 235 to 239 are the end of the five measure, and the speed is very rapid, the speed of the quick plate begins to signal the end of the piece, and the final four main chords are used to finish the piece. The whole work is full of vitality, giving the audience infinite reverie.

Solo Line

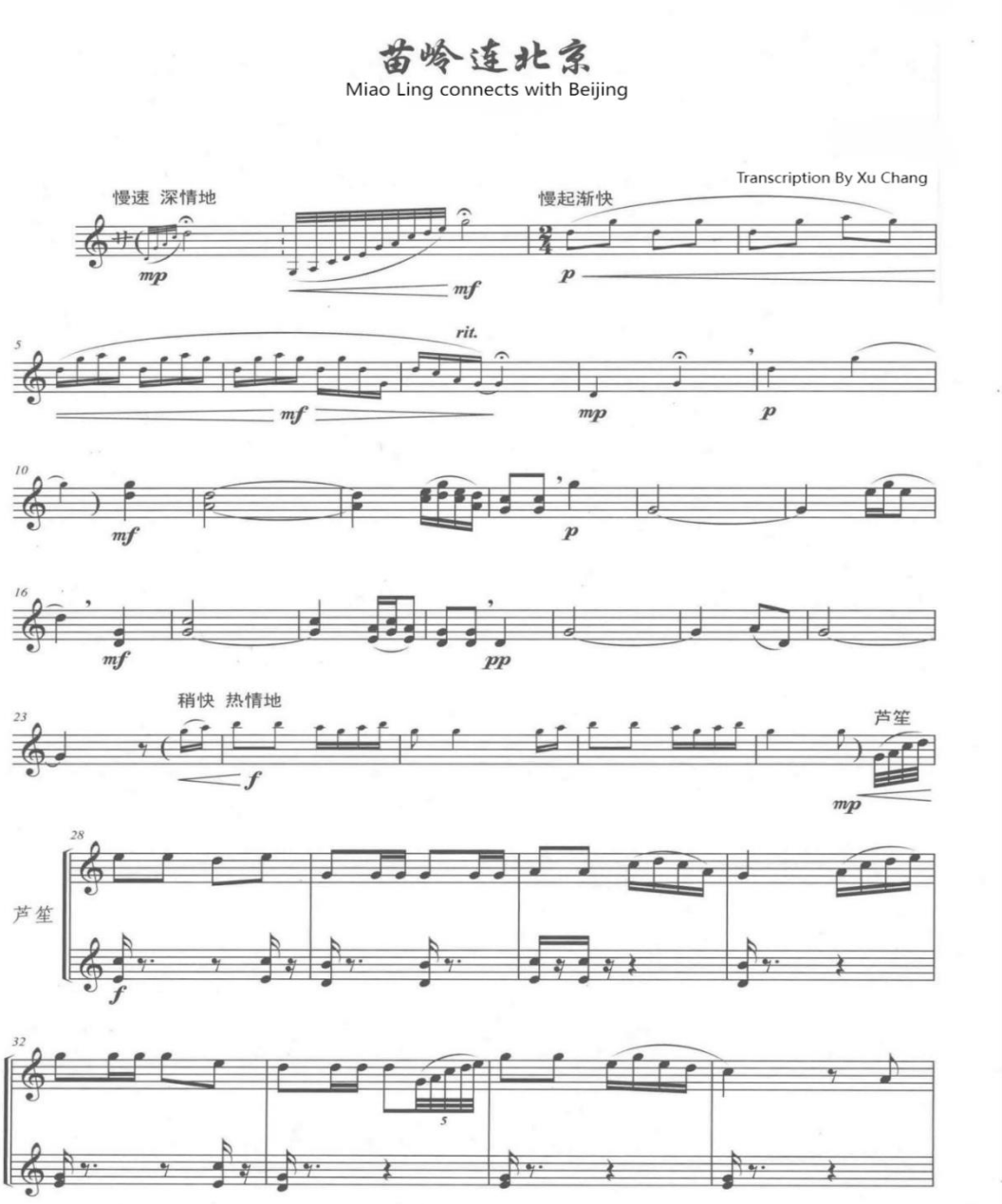
Range From D to D (a fifteen interval)



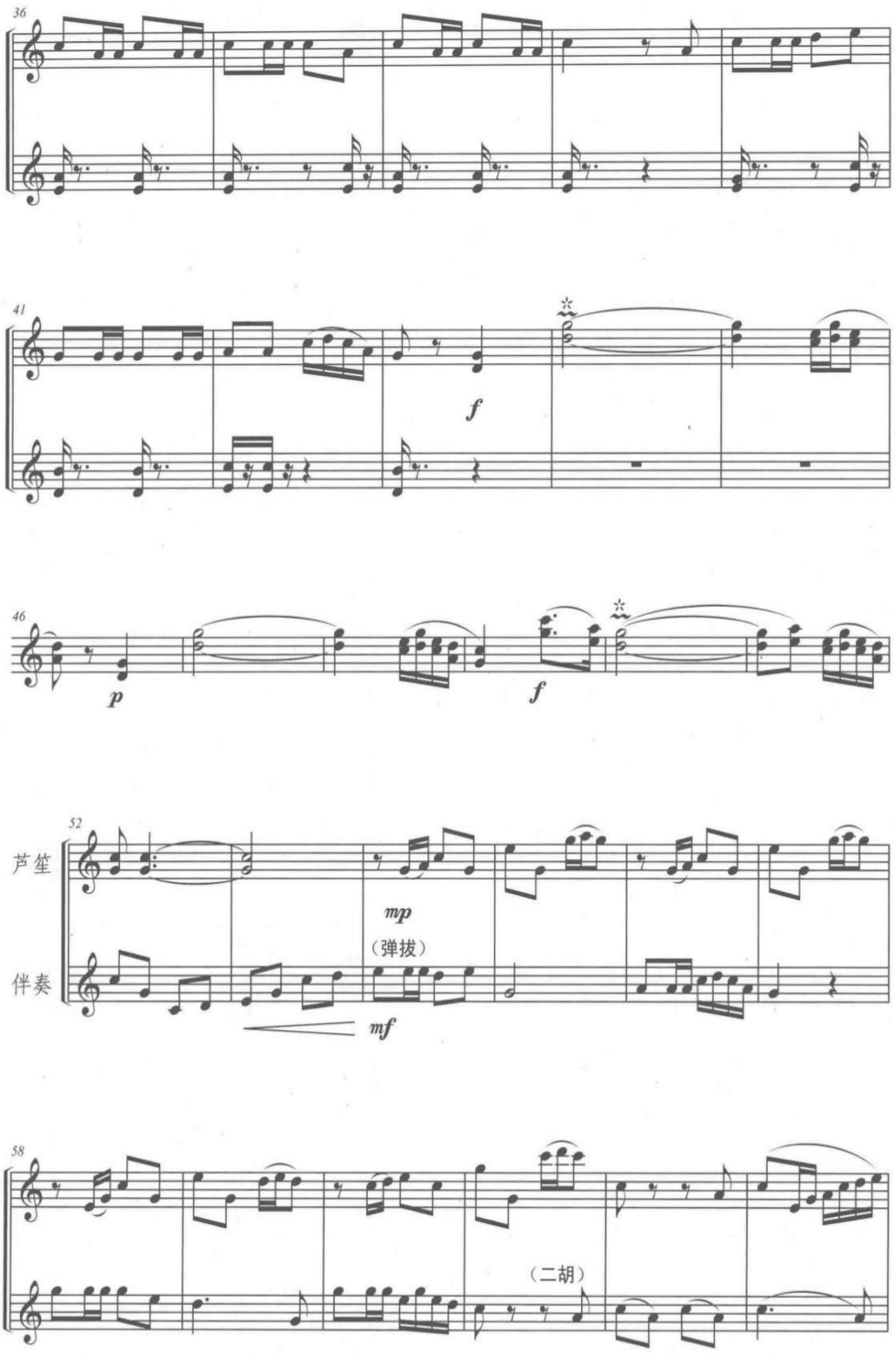
2) "Miao Ling connects with Beijing"

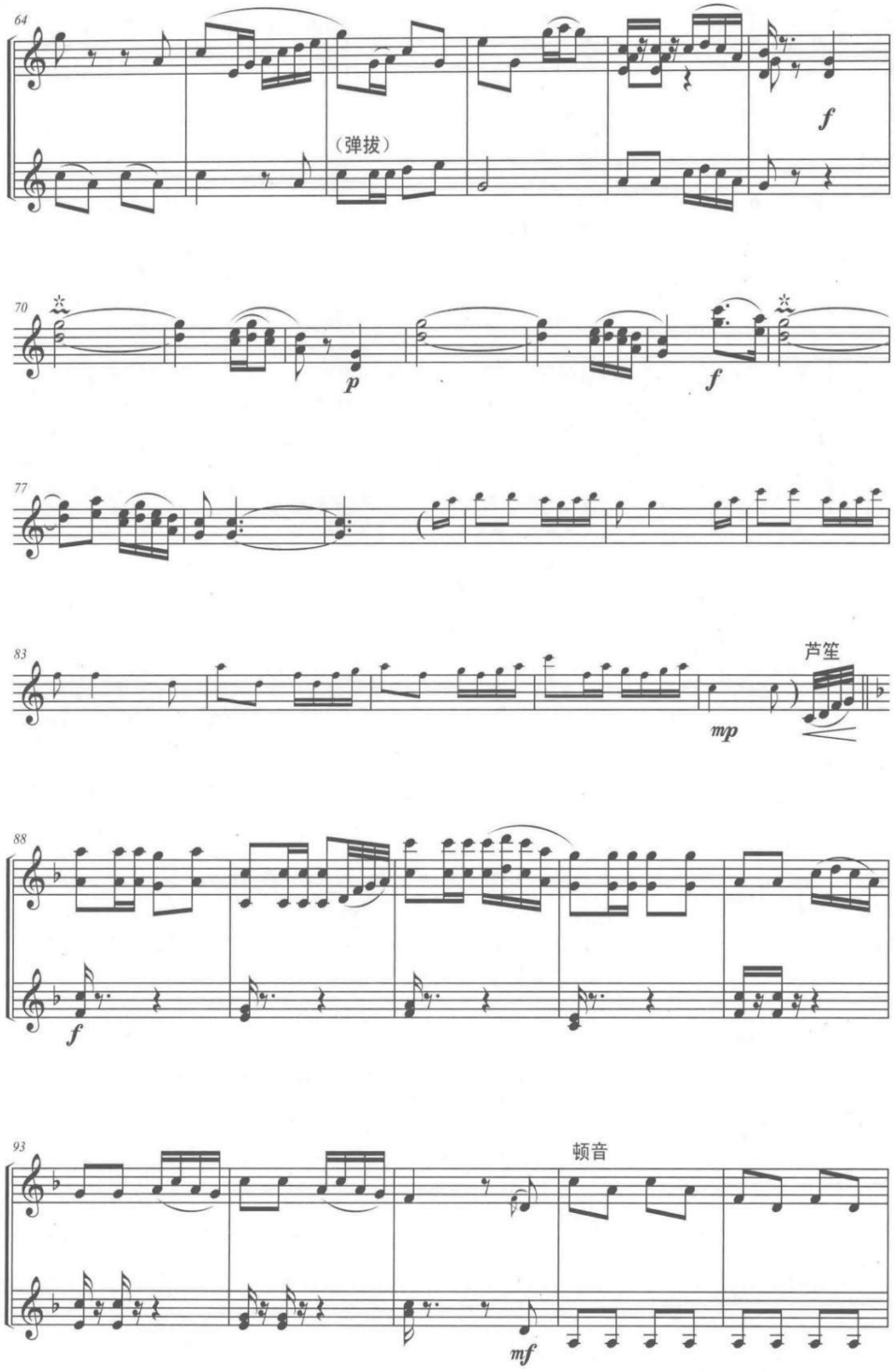
"Miao Ling connects with Beijing" is a Lusheng solo piece. It is a Lusheng solo piece adapted from the Miao folk song by Xu Chaoming, Sheng player and

composer of Shanghai Conservatory of Music. From beginning to end, this piece has strong emotional changes, strong and weak fluctuations, speed changes, and rich playing techniques. It is a relatively difficult Lusheng solo work. The music sheet is shown below.

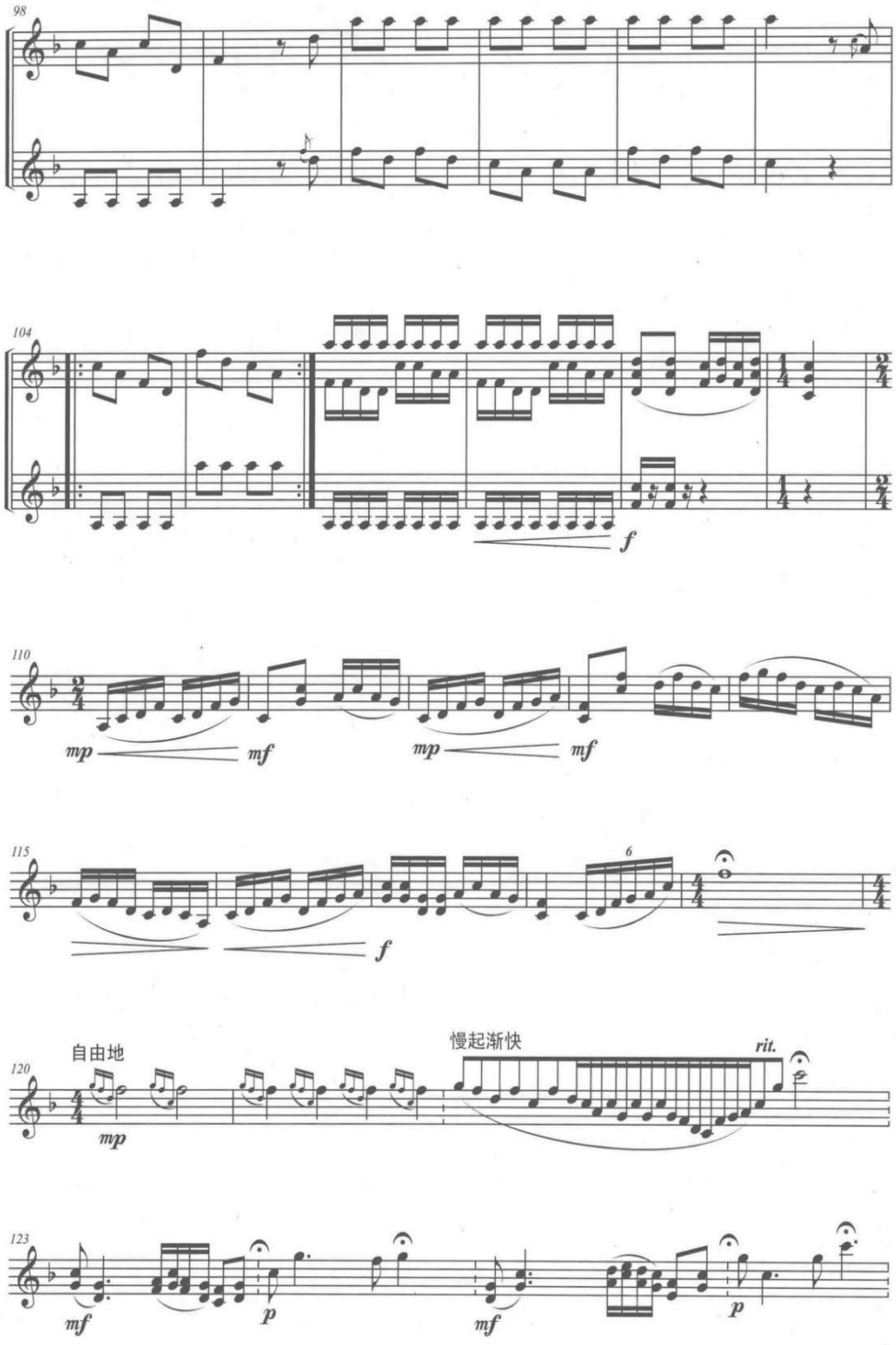


120




64
(弹拔)
f
70
p
f
77
83
芦笙
mp
88
f
93
顿音
mf

122



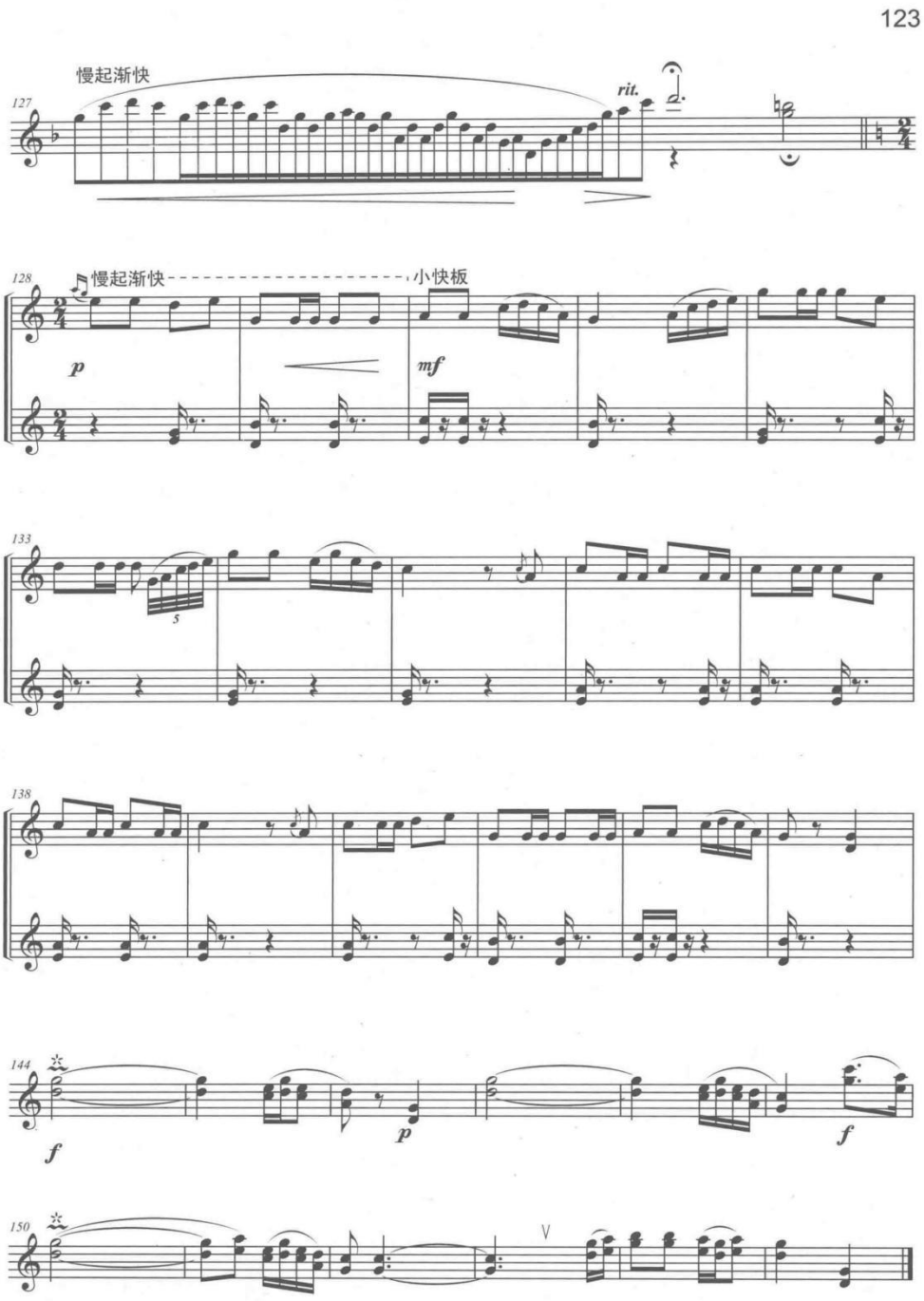


Figure 105. “Miao Ling connects with Beijing"
Source: Xu Chang

The total length of the piece is 155 measure, which is a typical double trilogy with a reproduction, and has a beautiful prelude. A large number of Da-yin and Hua-

she techniques are used in the works, reflecting the ethnic minorities' love for the motherland and their longing for Beijing. The musical form analysis table is shown below.

Table 9. The Musical sections of *"Miao Ling connects with Beijing"*

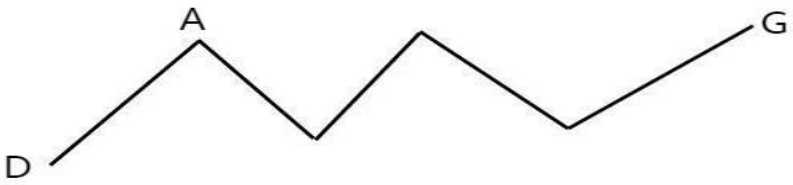
1-27	28-87	88-119	120-127	128-155
Introduzione	A	B	interlude	A’

Source: Xu Chang

Measure 1 to 27 are the Introduzione to the whole piece, the pace is slow and the rhythm is relatively free, and the score has a large number of free extension marks. The first two consecutive upward ornately decorated notes finally fall to the tonic and extend freely, requiring accurate and soulful playing, as if it were a feeling of looking out into the distance. The third measure begins to move into the four-two beat, but at a slow pace and quickens, then slows down after playing a series of sixteenth notes. measure 8 to 23 use a wide span of notes to describe the melody, measure 24 to 27 are the end of the prelude, the speed becomes slightly faster, to prepare for the main melody.

Solo Line

Range From G to A (a sixteen interval)



Tempo Large（♩=50）

Paragraph A, from measure 28 to 87, is the first appearance of the theme. measure 28 to 31 are the first verse of the whole melody, which is also the rhythmic

motive, two eighth notes and the first eight and then sixteen rhythm, and with Da-yin, as shown below.

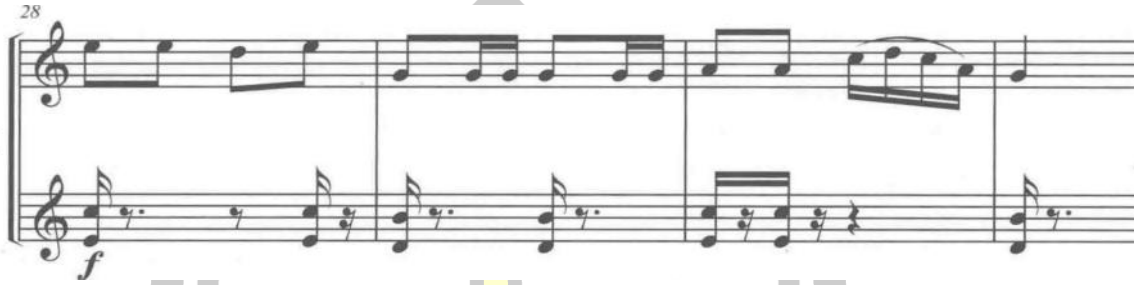


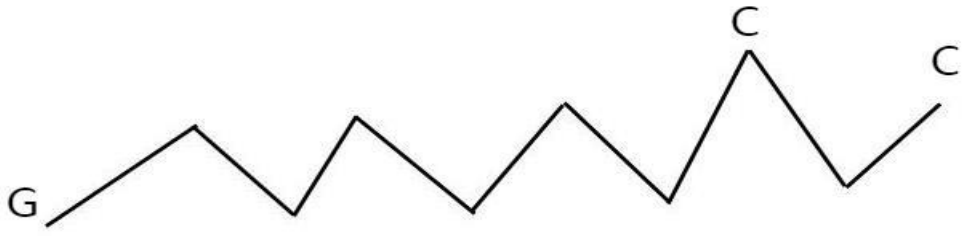
Figure 106. 28-31 bars of Miao Ling connects with Beijing

Source: Xu Chang

The theme of section A is the image of the happy singing of the Miao people, which absorbs the characteristics of the Miao folk songs, and the playing should be jumping, clever and confident. Da-yin and stress can be exaggerated. No matter sliding up and down, no traces of scale can be exposed during the sliding process. Fingering also refers to sliding the abdomen up away from or down near the sound hole and gradually pushing down. As the position of the breath rises and falls, the effect will be more rounded and accurate. When section 46 enters the second subparagraph of section A, long tones and Hua-she appear, which require major emotional ups and downs and stronger contrast when playing.

Solo Line

Range From D to C (a fourteen interval)



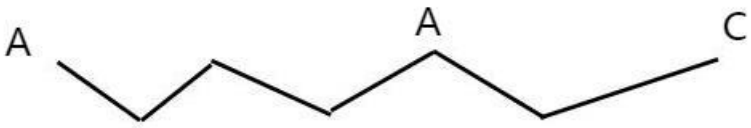
Tempo Morderato（♩=90）

B section 88 to 119 The main technical difficulty in this section is the continuous octave double notes and stops. In the continuous octave double notes, the breath needs to be balanced, and a large breath needs to be prepared in advance. The

finger press needs to be strong and the finger change needs to be extremely fast. The stop is further on the basis of stress, the playing of notes should be from weak to strong, the notes are clear and granular. It depicts the scene of the Miao people singing and dancing, and the performance should be fast and decisive. The performance of segment B should be smooth and coherent, and the whole process of singing and dancing of the Miao people is depicted vividly.

Solo Line

Range From D to A (a twelve interval)

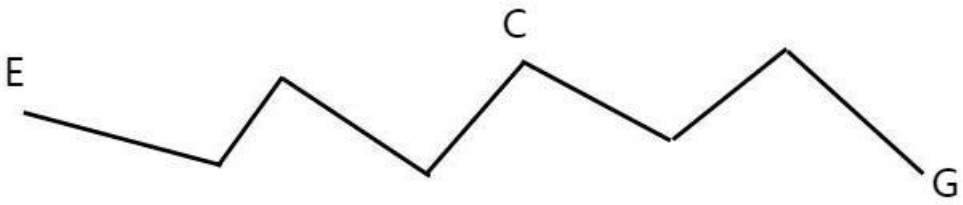


Measure 120 through 127 are a connecting segment that sets the stage for the final reproduction segment. The rhythm of this section becomes free, the notes are gorgeous, and the speed changes are very obvious. 127 measure continuous colorful phrases need the performer's breath to grasp well.

A 'is A reproduction of A, the speed is a small allegro, and the beginning is slow and fast. It should be noted that the playing of this paragraph should be more passionate than that of A paragraph. In the score, the composer added grace notes to depict a more enthusiastic scene. The final strong end indicates the people's love for the motherland and yearning for a better life.

Solo Line

Range From D to C (a fourteen interval)



Tempo Allegretto（♩=104）

Conclusion

This chapter analyze and research the playing techniques of Lusheng instrument. Among them, there are 16 kinds of playing techniques. In order to better describe the playing techniques, the researchers selected 6 pieces of Lusheng, including basic, intermediate and advanced playing techniques. To fully demonstrate the diversity and richness of Lusheng instruments. Through in-depth analysis of these works, researchers can deeply understand the characteristics and application situations of each playing technique.

CHAPTER VI

The Music Cultural Change of Luehng Instrument

After hundreds of years of inheritance and development, Lusheng instrument has undergone many changes. These changes may be the result of cultural coexistence and cultural integration of different ethnic groups over time, or they may be the result of adapting to social development. These changes come from a variety of sources, and of course the researcher can only summarize what he knows. Here, six changes of Lusheng will be expounded, mainly focusing on the analysis and study of the role of Lusheng instrument on Guizhou people.

Table 10. The Music Cultural Change of Luehng

1.Changes of Lusheng's social function	2.The Change of transmission and protection	3.The change from six-pipe Lusheng to multi-pipe Lusheng
Historical records	1.transmission by word of mouth	
Ritual function	2.School curriculum	
Entertainment function	3.Festival communication transmission	
Transfer love function	4.Multimedia communication transmission	
Educational function	5.Government protection	
6.Diversity function	6.Lusheng tourism development	

Source: Xu Chang

1. Changes of Lusheng's social function

Nowadays, the Lusheng instrument has long become the crystallization and spiritual pillar of the Miao people's thoughts and feelings. For the Miao people, knowing and inheriting the Lusheng culture of the Miao people is the identification of the Miao cultural identity and the identification of the harmonious culture. Nowadays,

Lusheng has gone beyond the value of a musical instrument in social life and has become a medium for social communication and emotional exchange. In some areas of southwest Guizhou, Lusheng is a symbol of national tourism culture and publicity of Guizhou. Such as "Colorful Guizhou", "Kaili International Lusheng Festival", "Kaili Zhouxi Town Lusheng Festival". These events are not only the festival of the Miao people, it sets the essence of ethnic customs, with "hundred cows competing", "thousand pairs of silver horns", "ten thousand Lusheng" colorful spectacular scene, integration of national culture, sports, food, craft as a whole, now become the grand event of Lusheng cultural exchange between China and foreign, investment, economic development of the big stage. With its unique status and charm, Lusheng instrument effectively promotes the harmonious development of local society, economy and culture.(Wu Huilin 2021）The development and change of Lusheng musical instrument's social function also went through the following steps.

Historical records

The Miao people are a nation with a long history and profound cultural accumulation. Since the Miao people did not have their own writing in ancient times, Lusheng became the carrier of recording the Miao people's cultural experiences, including great migration, war and settlement, through music. A simple Lusheng song or Lusheng dance contains a variety of past experiences experienced by Miao ancestors. For example, "Great Migration" can only be performed at the sacrificial ceremony held once every few years. It is a very serious and solemn national historical activity. Lusheng song and Lusheng dance simulate the reproduction of migration history. （Wen Yi 2015）Therefore, the Lusheng of the Miao nationality is not only a simple vocal instrument from the beginning of its birth, but also a sacred instrument in the history, because the Lusheng has the voice and imprint of the ancestors of the Miao nationality.

Ritual function

In the Miao area, another important function of the Lusheng is the sacrificial function. With its sound, the Lusheng can communicate with heaven and earth, the ghosts and gods, and can communicate with not only the dead but also people. Lusheng is a medium with special functions to communicate the Yin and Yang worlds, and even to let the living and the dead talk directly. The sound emitted by the

Lusheng represents the living people to tell the dead and ancestors about their living conditions, praying for the blessing of the ancestors, and bless the living people to be rich and healthy.（Wei Zuxiong 2022） In the area inhabited by Miao people in Guizhou province, the Lusheng, which plays a far more special function than the musical instrument, has become a ritual instrument, which is a form of witchcraft culture of Miao people in Guizhou province.

3) Entertainment function

The Lusheng sounds melodious and graceful, affecting the hearts of the Miao people, decorate the Miao people's lives. In the life of Miao people, Lusheng enriches people's life with its own special way and expresses people's emotions with special music language. In the mind of Miao people, Lusheng is the embodiment of a sacred, pure, joyful friendship, and also the portrayal of Lusheng's integration into the life of Miao people. In Miao festivals, many festivals are named after Lusheng, such as the Fengxiang Lusheng Festival in Huangping County, the Lusheng Festival in Congjiang County on August 15, etc., all of which take the playing of Lusheng as an important festival content. In addition, Lusheng playing wedding, small celebration activities are also many. The names of this kind of Lusheng music are generally congratulatory music such as "Opening Song", "Collective Dance music", "Farewell Song" and "Drinking Song". These Lusheng songs comprehensively show the active form of Guizhou folk Lusheng.(Mr. Mo Yanxue interview)

4) Transfer love function

For Miao girls, a boy who can play a lusheng can move their hearts, which has not changed since ancient times. In order to marry their sweethearts, Miao young men have also devoted themselves to studying the playing skills and methods of Lusheng. In the Miao area of Guizhou Province, there is a place with a beautiful natural environment surrounded by mountains. The folk call these places "flower fields" and some call them "flower slopes". Generally, men perform Lusheng love music, which is a very famous music such as "Begging for Flowers", praising the girl's good looks and charm and inviting the girl to dance together. If the girl also has love for the man at this time, then she will agree to his request and dance with the boy to the lively rhythm of the Lusheng music.(Mr. Yang Guotang interview)At this time, the function

of Lusheng is no longer confined to simple instrumental music, but has become a tool to convey love and show love, connecting the hearts of young men and girls.

5) Educational function

It is also one of Lusheng's social functions to educate and educate young people, tell them the way to be a man, and cherish history to inspire future generations. With Miao society entering a period of steady development, Lusheng musical instrument plays a direct or indirect role in education. As an important tool for inheriting national culture, educating and educating young people, Lusheng musical instrument is playing an increasingly direct and indirect role. It has a unique social function in shaping individual character, passing on historical memory and inspiring future generations. As a carrier of Miao history and culture, Lusheng instrument inherits rich historical memory through music and performance. In the process of playing the Lusheng, the young people are not only playing the music, but also interpreting the historical story and traditional values. This allows the younger generation to feel the sediment of history through music and deepen their awareness of their own cultural roots. The Lusheng instrument can also inspire future generations and inspire them to pursue higher goals. By learning Lusheng, young people can feel the perseverance and fighting spirit of the Miao ancestors in the difficult situation. This kind of motivation can inspire the confidence and determination of the younger generation, encouraging them to forge ahead in their own fields and contribute to the prosperity and development of society.

6) Diversity function

With the development of society and the improvement of Chinese people's living standards, Lusheng has been given more functions by people. The first is cultural inheritance and protection. Lusheng, as a representative of Miao culture, can be inherited and protected by young people through learning and playing Lusheng. Playing the classic Lusheng repertoire allows the younger generation to understand the history, life and values of the Miao people. Educational function, learning Lusheng can cultivate young people's patience and perseverance. Mastering complex fingering and musical notes requires constant practice and persistence, which helps develop problem-solving skills and self-management skills. At the same time, learning Lusheng can also improve young people's musical literacy and creativity,

cultivate their aesthetic taste, and understand minority music. Secondly, Lusheng is also a medium for social communication and emotional exchange. Through Lusheng music, people can convey their emotions in a more direct and profound way, and they can resonate without words. Therefore, Lusheng is not only music, but also a bridge for people's emotional communication and social interaction, enriching interpersonal relations and the spiritual world. Nowadays, Lusheng is also an important part of national tourism culture, adding a unique charm to Guizhou's tourism. Visitors can enjoy the beautiful music of Lusheng in Miao villages, cultural festivals and other activities, and experience the unique charm of national culture. This not only promotes the development of local tourism, but also spreads the cultural value of Lusheng to the whole country and even the world. The playing of Lusheng has become a way to attract tourists and transmit culture, enabling tourists to have a deep understanding of local history, tradition and lifestyle while enjoying the beautiful scenery, enriching the tourism experience. To a certain extent, the Lusheng culture of the Miao ethnic group has significant ethnic cohesion and affinity, which plays a key role in shaping the self-confidence and self-esteem of the ethnic group, and is also an important link to maintain the vigorous development of the Miao ethnic group and other ethnic groups. This way of cultural inheritance not only deepens ethnic identity, but also plays a positive role in promoting inter-ethnic communication and integration. Lusheng music is not only music, but also a tool to convey emotion, history, values and other multi-faceted information through music. It inspires people's interest in traditional culture, guides ethnic groups to confidently show their unique charm, provides a common cultural identity and cohesion point for the whole ethnic group, and builds a diverse and harmonious social structure.(Mr. Yang Guotang interview)

2. The Change of transmission and protection

With the acceleration of the modernization process, the national Musical Instruments have been greatly impacted, and the protection and development of Lusheng production skills are in a serious situation. At present, Lusheng production skills are facing extinction, no one to take over. If we do not rescue and protect the

craft, this unique craft will soon disappear. The spread and protection of Lusheng instrument is urgent.

As a traditional musical instrument of the Miao nationality and other ethnic minorities, Lusheng is deeply loved by the people for its unique tone and profound history and culture. In the early days, the inheritance of Lusheng was mainly carried out through oral transmission, and the elders passed on the production, playing skills and repertoire of the instrument to their descendants, so that it was passed down from generation to generation. Although this way of inheritance has intimacy and directness, it has a limited range of transmission due to limited information. At present, Lusheng has set up specialized courses in some primary and secondary schools and even universities. The establishment of these courses marks the importance and recognition of the heritage of Lusheng culture, and also injects new vitality into the dissemination and protection of Lusheng. Through the introduction of Lusheng in schools, the younger generation has been able to experience and learn this traditional instrument first-hand, enhancing their awareness and interest in the national culture. These courses not only teach playing skills, but more importantly, convey the history, values and emotions behind Lusheng. In the performance, students can feel the emotion and national spirit contained in the instrument, so as to get a comprehensive physical and mental training. In addition, the Lusheng course has also injected new vitality into the protection of Lusheng culture. As an important place of socialization education, school provides a valuable platform for the inheritance of traditional culture. This not only helps the younger generation to understand and respect the traditional culture, but also creates a broader space for Lusheng's future development. Schools can hold performances, competitions and other activities to show Lusheng culture to a wider range and attract more people's attention and participation. Lusheng Course is not only the inheritance and protection of traditional culture, but also an effective way to cultivate the cultural confidence, emotional expression ability and creativity of the young generation. This way of education will make Lusheng culture glow with new vitality, and provide beneficial exploration and practice for the transmission and inheritance of traditional culture in contemporary society.

Before, the spread of Lusheng mainly depended on the activities between Miao ethnic groups, such as festivals, weddings, funerals, etc., which was very limited. With the development of modern media technology, Lusheng communication has gradually changed from traditional activity communication to diversified media communication. TV, radio, Internet and other media channels provide a broader platform for the dissemination of Lusheng. Documentaries and Lusheng playing videos on Internet platforms enable more people to understand, appreciate and even learn Lusheng. (Mr. Yang Guotang interview)This mode of communication makes the sound of Lusheng more international, and also makes more people understand the cultural value represented by Lusheng. In addition to the above modes of communication, more trans-regional and cross-cultural channels of communication have emerged. Music festivals, cultural exhibitions, folk performances and other activities have become important stages for the spread of Lusheng, attracting audiences from different backgrounds. This diversified communication mode enriches the connotation of Lusheng, making it a cultural symbol connecting different groups and conveying multiple values. At the same time, cross-cultural communication also makes more people know Lusheng, further expanding its influence.

In the protection of Lusheng culture, the government has also formulated a series of policy measures. Including Lusheng in the national intangible Cultural heritage list, providing training and financial support for inheritors, and promoting the development of Lusheng based tourism industry are all important measures to protect Lusheng culture. In the 1990s, thanks to government guidance, some Miao villages in Guizhou began to explore the development of tourism to boost economic growth and raise the income level of Miao residents. In 1986, with the support of Guizhou Provincial Culture and Tourism Bureau, Langde Miao Village actively invested in the village renovation project and began to open to tourists, and was known as one of the earliest villages in Guizhou province to develop rural tourism. Village residents warmly welcomed the first group of tourists to visit with the highest forms of Miao etiquette, such as setting off firecrackers, playing lusheng and holding wine ceremonies. (Wu Linhui 2021）The following picture is the landmark building at the entrance of Paiya Village in southeast Guizhou Province. The text means Paiya, the first village of Lusheng in China.(Mr. Mo Yanxue interview)

Figure 107. Paiya Village

Source: Xu Chang

The following picture shows the construction of a Lusheng in Paiya village, Qiandongnan Prefecture, Guizhou province.

Figure 108. The construction of a Lusheng in Paiya village

Source: Xu Chang

In addition, the government has invested in the Lusheng Museum to attract more tourists. The museum carefully displays the historical origin of Lusheng, its production techniques, playing skills and its important position in Miao culture. Visitors can deeply understand the unique features of Lusheng instrument through exhibits, multimedia displays and other forms, and feel its heritage value and musical charm. Lusheng Museum has become a window for tourists to better understand and appreciate Lusheng culture, and also provides solid support for the inheritance and protection of Lusheng. The picture below shows the museum built by the government of Paiya Village in southeastern Guizhou province.

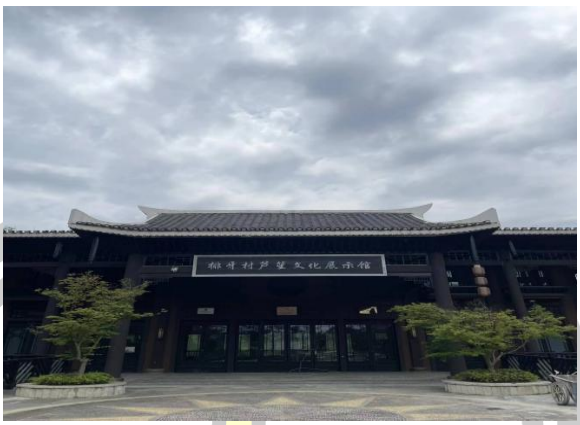


Figure 109. The museum in Paiya village

Source: Xu Chang

In addition, international cultural exchanges also provide opportunities for the spread of Lusheng, so that more people can understand the traditional Chinese music culture, but also for Lusheng to win a place on the international stage. International cultural exchanges also provide a broad platform for the spread of Lusheng. By participating in international music festivals, cultural exhibitions and other activities, Lusheng is able to show its unique musical style on the international stage. This kind of cross-cultural communication not only allows more people in the world to understand the traditional Chinese music culture, but also promotes the exchange and cooperation between different cultures. Although certain achievements have been made, protecting Lusheng culture still faces some challenges. How to balance innovation and tradition in inheritance, and how to integrate modern and ancient in communication are all problems that need to be seriously considered and solved. The government, academia and all sectors of society need to work together to formulate a more comprehensive conservation strategy, so that the Lusheng culture can continue to inherit and develop.

3. The change from six-pipe Lusheng to multi-pipe Lusheng

After the reform of the traditional six-pipe Lusheng, it has undergone different stages and characteristics of evolution, and has been shaped into different kinds of multi-pipe lusheng. Under the guidance of the concept of maintaining the characteristics of national instruments, the older generation of Lusheng players and

Lusheng producers used their own wisdom to add bamboo pipes to the traditional six-pipe Lusheng, expand the vocal range, free the fingers, and innovate and reform this instrument. Among them, the multi-pipe Lusheng has nine pipes, eleven pipes, twelve pipes, thirteen pipes, fourteen pipes, fifteen pipes, eighteen pipes of twenty-one tones, nineteen pipes of twenty-two tones, twenty-six reed keys, twenty-seven pipes, twenty-eight pipes of chromatic scales, twenty-nine pipes, etc.(Mr. Yang Guotang interview)

In 1949, the nine-pipe Lusheng was made by Yu Qiao, and was transmitted to Sandu County by the Mo family of Sandu County

It was introduced into Qiannan in 1958, and since then the modern Lusheng in Qiannan has started its own development track. Therefore, the traditional six-pipe Lusheng in Danzhai County was reformed in 1949 by Yu Qiao, a lusheng maker, namely, the nine-pipe Lusheng. It is a symbol of the reform of Lusheng of Miao nationality in southeast Guizhou.

The 11-pipe, 12-pipe, 13-pipe and 14-pipe Lusheng are the drawings designed by Lusheng player Dong Dangan and made by relevant Lusheng maker. According to the author in the fieldwork interview, Dongdanggan teacher in order to improve the Lusheng, painstaking efforts, visited the whole southeast Guizhou lusheng production master. Such as Leishan County's Mo Bixue, Zhouxi Town's Pan Bingwen, Huangping County's Fu (Shi Chaosheng) and Danzhai County's Lusheng makers. In addition, he also visited Wang Guanghua, the master of Lusheng, in Duyun, and was influenced by Zhang Zirui, the musical instrument reformer of Suzhou Musical Instrument Factory, and assisted by Zhang Akun and Xu Shanshu, the production technicians of Shanghai Folk Musical Instrument Factory.

The 15-pipe Lusheng, designed by Lusheng player Yang Changshu, is an addition to the traditional six-pipe Lusheng and retains the habit of playing the traditional Lusheng with two hands and three fingers.

Duyun 16-pipe and 18-pipe Lusheng were developed by Liu Zhonggui of Sandu County after the improvement of the traditional six-pipe Lusheng and nine-pipe Lusheng, with only one variation of the scale.

The 18-pipe 21-tone Lusheng was developed from the 14-pipe lusheng in Dongdangan in the early 1960s, and based on the traditional 6-pipe Lusheng in Danzhai, it was increased from the original two-handed 3-finger playing to two-

handed 4-finger playing. The phoneme arrangement is scientific and reasonable, the finger order is flexible and convenient, and it is easy to transfer and shift the key.

The 19-pipe Lusheng is the most widely used multi-pipe lusheng in Guizhou Province, which is mostly used by students majoring in Lusheng performance and professional teaching. Mu Master (Fan Yuanzhu) is a set of scientific and standardized reed sheng with 26 springs and keys, which is designed on the basis of Mr. Dongdangan's 21 pipes, keys and sounds.

The 28-pipe Lusheng was designed by Wei Zuxiong on the basis of the 15-pipe Lusheng in C tone, and made by his father Wei Wenfang. The twenty-seven-pipe and twenty-nine-pipe Lusheng are also designed on the basis of the eighteen pipe lusheng in Dongdangan. Its principle is similar to the 19-pipe Lusheng, which solves the problem of incomplete middle tone of the scale, convenient modulation and fingerings, expands the playing range, and can play western classical music.(Mr. Yang Guotang interview)

After a variety of reforms and changes, the multi-pipe Lusheng inherits and develops traditional culture while following the spirit of traditional culture and continuing its cultural gene. Lusheng culture, which is invented and innovated on the basis of renewal, adapted to the needs of The Times and applied to the needs of local culture, is deeply rooted in the lives of local people.

Conclusion

This chapter research the music cultural change of Luehng Instrument. The change of Lusheng music culture is mainly manifested in the following three aspects: 1) the change of Lusheng social function, 2) the change of Lusheng communication and protection. 3) The change from six-pipe Lusheng to multi-pipe Lusheng. The changes of social functions are as follows: historical recording, sacrificial function, entertainment function, transmitting love function, education function and compound function. The above changes are not necessarily carried out stage by stage, they may be carried out simultaneously, and they may also retain the functions of Lusheng instruments until today. These changes in social functions reveal the rich history of Lusheng music culture. The change of Lusheng communication and protection has changed from the initial word-of-mouth transmission and the spread of activities among Miao ethnic groups to formal school teaching, diversified media

communication, music festivals, cultural exhibitions, folk performances and other ways. In the protection of Lusheng, from the discovery of the need for protection, the government formulated a series of protection measures, included Lusheng in the national intangible cultural heritage list, promoted the development of Lusheng tourism industry, and renovated Lusheng Museum. After the reform of the traditional six-pipe Lusheng, it has undergone different stages and characteristics of evolution, and has been shaped into different kinds of multi-pipe Lusheng.

CHAPTER VII

Conclusion, Discussion and Suggestion

This research takes the traditional six-pipe Lusheng instrument as the research object, and study the production process, performance techniques, and cultural changes of the traditional six-pipe Lusheng instrument.

1. Conclusion

The production process of Lusheng is divided into three major processes: preparing materials, making Lusheng and adjusting pitch. There are many detailed steps in each process. The process takes about 23 steps, but it's not absolute. Sometimes steps may change for different product types or for different instrument makers. This dissertation only studies the production of the most commonly used traditional six-pipe Lusheng product category, and the whole process is carried out according to the production steps of Mr. Mo Yanxue, a key informant. Of all the steps, preparing materials and adjusting pitch are the most important, they determine the quality of the Lusheng instrument. The intermediate step of making a Lusheng is the most difficult because it requires skillful operation by hand. You can't do it without decades of production experience. Now only the inheritors can do it well. The quality of each process will ultimately affect the quality and timbre of the Lusheng instrument. Therefore, every process must be carried out in strict accordance with the standards. So you can make high quality instruments. The researchers used the following table to summarize the conclusions of the first objective:

Table 11. The whole making process and tools of traditional Lusheng

Processes	Detailed steps	Tools
Bamboo processing	1.Cut bamboo	Lian Dao (Sickle)
	2.Wash bamboo	Lu Hui (Stove ash)
	3.Storage bamboo	Stash
Production of sound pipes	1.Choose bamboo	Ka Chi (calliper)
	2.Straightening bamboo	The furnace, the tree pier
	3.Break through a bamboo knot	Tie Bnag (Iron bar)
Production of Sheng Dou	1.Preliminary setting	Kan Dao (chopper)
	2.Get through the sheng Dou	A threaded iron bar
	3.Positioning the sound pipe opening	Hexagonal mold
	4.Chiseling hole	Yuan Mu Cuo (Round wood file)
	5.Revise and polish the Sheng Dou again	Scraper, sandpaper
	6.Painting Sheng Dou	Varnish, tung oil
Copper reed production	1.Clean impurities from the crucible	detergent
	2.Smelting copper material	Coarse charcoal, crucible
	3.Striking copper material	Hammer
	4.Cutting copper reed	Xiao Zao Dao(Small chisel)
	5.Adjusting the pitch of the reed	tuner
Resonant tube production	1.Cutting bamboo pipes	cutting machine
	2.Adjusting the resonance tube	tape measure
assemble	1.Grooving of sound pipes	knife
	2.Install the reed	adhesive
	3.Install the sound pipe to the Sheng Dou	None
	4.Drill sound hole	Burning Red Iron Rod

Source: Xu Chang

The second research objective of this research is to analyze and research the playing techniques of Lusheng instrument. Among them, there are 16 kinds of playing techniques. In order to better describe the playing techniques, the researchers selected

6 pieces of Lusheng, including basic, intermediate and advanced playing techniques. To fully demonstrate the diversity and richness of Lusheng instruments. Through in-depth analysis of these works, researchers can deeply understand the characteristics and application situations of each playing technique. These techniques include the control of the force of the wind, the extension and variation of the notes, the vibrato, the jump, the glissando, and so on, each of which is fully demonstrated in a different piece of music. As a traditional national instrument, Lusheng can convey joy and pleasant rhythm in music, and also express emotion in soft and lyrical melody. Its unique timbre and performance characteristics make it an indispensable music for folk celebrations, ceremonies, and other occasions. The selection of researchers integrates basic, intermediate and advanced playing techniques into different works, not only enriching the presentation of playing methods, but also demonstrating the expressive power of Lusheng instruments at different levels. Through the detailed study of these works, researchers can reveal the internal laws and development trends of Lusheng playing techniques, and provide useful references for protecting and inheriting traditional music culture. In addition, in-depth exploration of the application of these techniques can also provide inspiration for modern music creation, combine tradition with innovation, and promote the development and dissemination of Lusheng music in contemporary times. The following table summarizes the playing techniques of Lusheng instrument.

Table 12. The common playing techniques of Lusheng instrument

No.	Name	Mark	No.	Name	Mark
1	Single-tonguing	T	9	“Dun-yin”	▼
2	Double-tonguing	TK	10	“Qi Rou yin”	~~~~~~~
3	Triple-tonguing	TTK TKT	11	“She Rou yin”	≈≈≈≈≈≈
4	“Da-yin”	⊤	12	“Hu She”	///
5	“Xiao Hua-she”		13	“Dan Ku yin”	⊙
6	“Da Hua-she”		14	“Chan Zhi yin”	
7	“Bao Hua-she”		15	“Yi Yin”	ㄒㄒ
8	“Shuang She yin”	⊗	16	harmony	

Source: Xu Chang

The change of Lusheng music culture is mainly manifested in the following three aspects: 1) the change of Lusheng social function, 2) the change of Lusheng communication and protection. 3) The change from six-pipe Lusheng to multi-pipe Lusheng. The changes of social functions are as follows: historical recording, sacrificial function, entertainment function, transmitting love function, education function and compound function. The above changes are not necessarily carried out stage by stage, they may be carried out simultaneously, and they may also retain the functions of Lusheng instruments until today. These changes in social functions reveal the rich history of Lusheng music culture. In the function of historical record, Lusheng, as the carrier of music, has witnessed the development and changes of society. The function of sacrifice makes it an important musical tool closely related to religious ceremonies. The rise of entertainment function makes Lusheng enter people's life and become an indispensable part of celebrations and entertainment activities. The function of transmitting love closely links the Lusheng with emotional communication and becomes a window to express love. With the passage of time, the

addition of educational functions has made it play an important role in school education, passing on and training a new generation of performers. Finally, the composite function of Lusheng enables it to maintain multiple roles in today's society, which is not only the representative of traditional culture, but also the source of inspiration for modern creation. The evolution of these functions is not linear, but mutual penetration and coexistence. Lusheng music culture retains its foundation in the change, but also ADAPTS to the needs of different times, and presents a new look while continuing the tradition. This multi-dimensional development path enriches the musical value of Lusheng and provides a solid foundation for its inheritance and development.

The change of Lusheng communication and protection has changed from the initial word-of-mouth transmission and the spread of activities among Miao ethnic groups to formal school teaching, diversified media communication, music festivals, cultural exhibitions, folk performances and other ways. In the protection of Lusheng, from the discovery of the need for protection, the government formulated a series of protection measures, included Lusheng in the national intangible cultural heritage list, promoted the development of Lusheng tourism industry, and renovated Lusheng Museum. The implementation of these protection measures not only contributes to the preservation of Lusheng music culture, but also contributes to the development of local economy and tourism. However, continuous efforts and cross-sectoral cooperation remain important factors in ensuring the heritage of Lusheng culture in order to retain its unique place in cultural diversity.

After the reform of the traditional six-pipe Lusheng, it has undergone different stages and characteristics of evolution, and has been shaped into different kinds of multi-pipe lusheng. Under the guidance of the concept of maintaining the characteristics of national instruments, the older generation of Lusheng players and Lusheng producers used their own wisdom to add bamboo pipes to the traditional six-pipe Lusheng, expand the vocal range, free the fingers, and innovate and reform this instrument. Among them, the multi-pipe Lusheng has nine pipes, eleven pipes, twelve pipes, thirteen pipes, fourteen pipes, fifteen pipes, eighteen pipes of twenty-one tones, nineteen pipes of twenty-two tones, twenty-six reed keys, twenty-seven pipes, twenty-eight pipes of chromatic scales, twenty-nine pipes, etc.

2. Discussion

1) The Process of Making traditional Lusheng

In scholar Yang Yunhui's opinion, the Lusheng Sheng Dou uses a whole piece of Chinese fir to cut it in the middle, hollow it out, and then glue it together and bind it with bark.

In addition, researcher has the different viewpoint with scholar Yang Yunhui. Researcher interviewed Mr. Mo Yanxue, a key informant. His production method is very different from the scholar Yang Yunhui. He uses a whole piece of Chinese fir, first shapes out the basic shape, and then uses tools to hollow out the inside of the wood to form a whole sound Sheng dou. The advantage of doing this is that the Sheng dou is very strong and not easy to crack under any temperature and humidity.

Of course, there are still some shortcomings in this research, that is, there is no comprehensive comparison and rational analysis of the Lusheng produced by different producers. Because the Lusheng produced by different producers has not been comprehensively compared and in-depth rational analysis, it may not be able to accurately reveal the production style, technical characteristics and innovation. In order to evaluate the diversity of traditional lusheng production more comprehensively, future studies may consider collecting more data of producers and using systematic methods for comparison and analysis, so as to deepen the understanding of traditional production techniques and further promote the inheritance and development of traditional culture.

2) Playing Techniques of traditional Lusheng

The scholars Khomkrit Karin and Li Xingchen's opinion the most basic exercises, inhalation and exhalation, require a lot of time to practice, and the most difficult technique is circular breathing. For wind instruments, the most important thing is to practice the coordination of exhalation, inhalation and fingers, which is the premise of playing good wind instrument.

In addition, researcher has the same viewpoint with scholars Khomkrit Karin and Li Xingchen., because they directly affect musical expression and emotional communication. In particular, mastering circular breathing techniques requires long-term persistence and concentration to ensure the coherence and stability of music performance. This process may encounter many technical challenges, but through

continuous practice and refinement, players can gradually break through difficulties and reach a higher level of performance.

The researchers studied the process from beginner to intermediate to advanced. In terms of playing techniques, the researchers believe that the most difficult part is to master the basic techniques. To play any piece of music, you must have basic technical support if you want to play it well. Therefore, in the process of playing techniques of Lusheng instrument, the researchers studied basic techniques in the early stage. Of course, when performing a piece of music, simply focusing on playing techniques is not enough to meet the requirements. More important is a deep understanding of music. How to interpret musical works with the most appropriate emotions can also be seen as a challenging technical subject. This requires a considerable degree of musical literacy. Musical literacy is built on the basis of rich experience.

3）The Music Cultural Change of Luehng Instrument

In scholar Li Wenzhe’s opinion, it is recommended to standardize the Lusheng market, train Lusheng talents, set up industry associations to standardize industry standards, strengthen talent training and promote cultural inheritance. All these measures have positive effects on the protection and inheritance of traditional music culture. Through the establishment of industry associations and the formulation of industry standards, we can standardize the market order, improve the production and performance level of Lusheng, and enhance the sustainable development of the market. Training Lusheng talents is the key to ensure the inheritance of traditional techniques. Through systematic training and education, the new generation of Lusheng players can develop and innovate on the basis of tradition, and inherit the music culture more vivid. These efforts will help preserve and pass on Lusheng culture in modern society, keep it up to date and last, and contribute to the prosperity of our cultural diversity and traditional arts.

In addition, researcher has the same viewpoint with scholar Li Wenzhe. the researchers have studied the changes of music culture and the changes of communication protection. First of all, the research examines the change of Lusheng music's cultural function, the evolution process from tradition to modern, and reveals the influence of social, technical and cultural background on music. Second, the

research focuses on the evolution of music communication and conservation strategies, exploring how to effectively disseminate music culture in the information age while preserving its traditional values. Through comprehensive analysis of these two aspects, the researchers have conducted an in-depth analysis of the development track and adaptive changes of music culture, which provides a beneficial perspective for us to better understand the importance and significance of music in different cultural environments.

3. Suggestion

1. Suggestions for further research

1.1 In this research, the researchers explored the production process, playing method and the evolution of music culture of Lusheng instrument respectively. Looking forward to the future, I hope that future researchers can deeply research the historical origin of Lusheng, the evolution of production techniques, the differences between different inheritors and the advantages and disadvantages of each production method. This helps to inherit and carry forward Lusheng culture and further highlight its important position in the musical tradition.

1.2 The performance characteristics and unique techniques of Lusheng performance should also be deeply studied and analyzed, and the innovative technologies emerging with the evolution of The Times should be discussed. At the same time, the dissertation explores the potential opportunities for Lusheng to cooperate with other instruments and even western symphony orchestras, speculates on its role and fusion possibility in the multi-musical environment, and provides a new perspective for the exchange and mutual learning of musical culture.

1.3 The role and function of Lusheng musical instrument in society should be studied to find its accurate positioning in the rapidly developing contemporary society. This research can focus on how Lusheng plays an important role in cultural inheritance, entertainment and social interaction in different social environments. In addition, consideration should be given to the potential of Lusheng in today's music creation, education and performance, and how it can be integrated into a modern multicultural scene. Through in-depth analysis, we can explore how the Lusheng instrument can maintain its traditional value in the contemporary society while

adapting to the emerging cultural needs, so as to provide comprehensive guidance and support for its development in music, culture and society.

2. Suggestions for applying the research results: The research results of this research have important reference value for those who are interested in the production of Lusheng Musical Instruments in Guizhou Province. By deeply exploring the production process of Lusheng, playing techniques and the historical evolution of music culture, this research provides useful information resources for people who are interested in understanding the traditional culture of Guizhou Province. Especially for students and teachers who plan to study Lusheng in Guizhou Province, this dissertation can serve as a valuable reference material, providing them with an opportunity to deeply understand the Lusheng instrument and the cultural connotation behind it. The research results of this dissertation not only enrich the knowledge of Lusheng in theory, but also provide guidance for practical application. From production techniques to performance techniques, these research results can provide specific guidance for interested people to promote the inheritance and development of Lusheng culture. By combining research results with practical applications, we can expect Lusheng to play a greater role in the cultural inheritance of Guizhou Province and wider, while also providing practical cases and experiences for cross-disciplinary education and research.

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