GENES AND GENESIS: A STUDY ON PIANO MUSIC COMPOSITION OF ETHNIC MINORITIES IN SOUTHWEST CHINA

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ABSTRACT

This study, "Genes and Genesis: A Study on Piano Music Composition of Ethnic Minorities in Southwest China," examines how the musical genes of Southwest China's ethnic minorities have been inherited and transformed in contemporary piano composition. The study addresses two primary objectives: (1) to analyse the genetic characteristics of folk music in the Southwest region, with particular focus on how ethnic musical identity is at risk of erosion within contemporary piano curricula; and (2) to investigate the compositional techniques employed by Chinese composers in integrating these musical genes into piano works, thereby offering a theoretical framework for culturally informed composition practice. This study employs a qualitative research design using four data collection and analysis methods: literature review, field investigation, ontological analysis, and cultural interpretation. A purposive sample of 20 piano works representing key ethnic and regional traditions of Southwest China was selected and systematically analysed. The findings reveal that: (1) the musical genes of ethnic minorities—encompassing melodic, tonal, rhythmic, and instrumental dimensions—have been replicated and regenerated by Chinese composers and applied in the creation of piano works; and (2) the application of these musical genes exhibits national, regional, and integrative characteristics, offering composers a structured framework of creative ideas grounded in pentatonic scales, compound rhythmic patterns, and modal structures specific to Southwest China.

In conclusion, the study examined four major cultural regions of Southwest China—the Dian culture of Yunnan, the Qian culture of Guizhou, the Ba-Shu culture of Sichuan, and the Wuling Corridor culture—through source analysis, musical score analysis, and creative practice analysis. The results demonstrate that

the systematic identification and application of ethnic musical genes can serve as a vital mechanism for preserving intangible cultural heritage, enriching the musical language of contemporary piano composition, and strengthening ethnic cultural identity within music education.

Keywords: Southwest ethnic minorities, Piano, Musical genes, Genesis

INTRODUCTION

With the rise of "cultural confidence," increasing attention has been given to the study of traditional music of China's ethnic minorities in recent years. Field research has become more extensive, and concerns over the transmission and education of traditional music culture have grown significantly. The ethnic minorities in Southwest China, as a gathering place with a large number of ethnic minorities in our country, their ethnic music has been more adapted and integrated with new vocabularies.

With the acceleration of globalization and the diversified development of culture, experts and scholars have made more explorations and gained a deeper understanding of the integration of ethnic music elements into different types of works. As a foreign instrumental music, how do piano music creation works reflect their Sinicization? The author believes that it is mainly a matter of the application and creation of the genes of traditional Chinese music culture. At present, there are fewer studies on the application of the cultural genes of Southwest ethnic music in piano works, mostly using a piece of music as a point of analysis, such as Pan Changyu's "Exploration of the Intermingling of Southwest Ethnic Minority Elements and Modern Compositional Techniques" - using the song "In the Verdant Valley" as an example, Ye Ying's "The Embodiment of Ethnic Musical Elements in

Piano under the Perspective of Cultural Roots Searching" - using the song "Impromptu- -Dong Country Drum Tower‖ as an example and other articles. Chen Hongqun (2019), in his article "The Hundred-Year Development of Piano Music Creation in China and Reflection", reviewed the history of the development of piano music creation in China, put forward the current development status of piano music creation, reflected deeply on the Chinese piano music taking the Chinese road, and advocated for the internationalisation and personalisation of Chinese piano music creation . Chen Hongduo (2017) discusses "Chinese piano music" as a concept, and reflects on the "Chineseisation" of piano music created by Chinese composers. It is pointed out that today, when the development of human society has become more and more globalised, Chinese composers should have the mindset of "global citizenship".

Taking the folk music forms in the piano works of Southwestern ethnic groups as a research point, the author sorts out, analyses and culturally interprets the genes of these music forms, which is of theoretical significance for the creation of piano music of Southwestern ethnic groups at the ecological level; at the same time, it is also of some significance for the promotion of the development of the Chineseisation of piano music, as well as for the productive preservation, living inheritance, innovative development and creative transmission of the ethnic music. The significance of studying “musical genes” is particularly pressing in the current context, where the dominance of Western classical pedagogy in conservatory curricula poses a tangible risk to ethnic cultural identity. When students are exposed primarily to Western harmonic systems and compositional structures, the internalized knowledge of ethnic modality, timbral aesthetics, and rhythmic traditions risks gradual erosion. By identifying, systematising, and applying these musical genes, this study provides composers, educators, and curriculum

designers with a concrete framework for recentering ethnic musical identity within contemporary piano practice.

OBJECTIVES

1. In order to study the genetic characteristics of folk music in the southwest region.

2. In order to study the creative techniques of the piano works of the ethnic groups in Southwest China.

LITERATURE REVIEW

1. The conceptual definition and theoretical evolution of cultural genes

Richard Dawkins, said in his 1976 treatise The Selfish Gene, “They have come a long way, those replicators.Now they go by the name of genes,and we are theirsurvival machines.”The biological genes in nature have the meaning of repeated replication. As a new replicator, the treatise proposed a word 'meme'. As a symbolic structure in the social domain, this symbolic composition has characteristics similar to the replication, transmission, selection, and mutation of biological genes during the process of being passed down. Therefore, the term "meme" invented is a cultural gene concept in contrast to "gene". Cultural genes are traces that have been passed down, replicated and rewritten throughout history, and can even be found in other combinations in the future. Domestic research scholar Liu Changlin (1988) believes that cultural genes are those psychological underlying structures and ways of thinking that have had a profound impact on the culture and history of the nation. Bi Wenbo (2001) suggests that

the basic concept or spirit that is embedded in various cultural phenomena and has the ability to be passed on and unfolded in time and space, as well as the basic style of cultural expression or manifestation that has this ability, are called cultural genes. Wang Dong (2003) suggests that cultural genes are the basic factors and elements that determine the transmission and change of a cultural system. Wu Qiulin (2013) argues that from the base of the concept, the term cultural gene is to equate certain constructs in culture with the concept of genes in genetics, arguing that there is a most basic unit in cultural anthropology called cultural gene and has a fundamental influence on culture in its internal movement. Zhang Xiao (2014) proposes that cultural genes are the most basic ideological elements for the existence and development of a culture, determining the direction of the development and change of that culture, as well as the essence of various cultural phenomena. Zhang Zongming (2015) proposed that cultural genes and biological genes have the characteristics of sociality, multidimensionality, selectivity, intangibility, and variability. Liu Zongming (2017) believes that cultural genes have a regulating effect on regional or national cultures showing obviousness and continuity characteristics. Zhao Haiying (2021) proposed that cultural genes are the basic information patterns with stability, mutability and inheritance formed in a specific space-time and cultural environment; it contains the essential connotation of culture, has the characteristics of quantifiable, connotative and inheritable, and reflects the law of cultural evolution in space-time.

2. The Theory of Music Genes and Chinese Ethnic Music

The Theory of Music Genes: Liu Zhengwei (2004), in "Genetics of Music: The Five States, Four Paths and Three Lines of Traditional Music," proposes that the genetic inheritance of music consists of a number of figurative elements, i.e., they are made up of a number of basic components belonging to the morphological aspect. Chen Qishang (2012), in "The Genetic Inheritance of Music:

Five States, Four Paths and Three Lines of Traditional Music," further develops this framework. In a second article, Chen Qishang (2012), in "On the Genetic Inheritance of Traditional Chinese Folk Music," proposes to explore traditional Chinese music from seven aspects: genetic inheritance of pitch organization patterns, genetic inheritance of pitch value expression styles, genetic inheritance of structural principles, genetic inheritance of musical expression, genetic inheritance of musical thinking, and genetic inheritance of color traits. Zhao Dongmei (2023), in The Encounter of Western and Eastern Musical Genes: A Textbook of Song Formats that Integrates East and West , suggests how to help students eliminate the inertia of Western modes of thinking, and evoke a new sense of the Chinese traditional music that flows through their minds. It suggests how to help students remove the inertia of Western modes of thinking, arouse the blood in our cultural genes, and cultivate the logic of musical thinking rooted in traditional Chinese culture.

Studies in Southwestern Ethnomusicology: Research on Southwest China's folk music began in the second half of the 20th century, and the types of research in China have focused on Southwest China's folk music identity, importance, dissemination, and the application of Southwest China's folk music elements in their works. Related studies in other countries have focused on the following aspects: British scholar Helen Rees (1998) studies Naxi culture from the perspective of ethnomusicology. In her paper "Authenticity and the foreign audience for traditional music in Southwest China" in the Journal of Musicological Research, she notes that since 1988, foreign visitors have been flocking to Lijiang in southwestern China to listen to the traditional music of the Naxi people; the real "authentic" Naxi traditional music, however, is passed down in the villages, which are seldom visited by tourists. The scholar has been conducting field research in Lijiang for a long time, and her book Echoes of History: Naxi Music in Modern China

was published by the University of Oxford in 2000. Samuel R. Clarke (1911) was a Protestant missionary in Guizhou for more than 20 years in the late 19th and early 20th centuries, and in 1911 he published a book entitled Among the Tribes in Southwest China. The book is divided into two parts: the first part describes the customs of the Miao and other minorities; the second part focuses on the achievements of Protestant missionaries in the Miao region. The first part contains chapters describing Hmong festivals, including the social environment, the dress of young girls, horse races, dances, and the playing of the lusheng. (1911:63--67) Because Clarke had attended many festivals and made careful observations, the forms of lusheng playing methods are described in some detail. When foreign scholars summarise the music, culture and customs of ethnicity, they also rely on field research to do so.

3. Research Review and academic Gap

In general, foreign scholars have focused on folk melodies, folk tunes, ethnic elements and their use in musical performances, focusing on the diversity of ethnicity and adopting methods such as field surveys and oral histories, which have broadened the international perspective for the in-depth study of this topic. Domestic scholars have systematically and thoroughly studied the creation and performance of Chinese piano works, the fusion of Chinese and Western musical cultures, the application of ethnic elements in piano works, and the continuous enrichment and expansion of the fusion of ethnic and Western musical instruments, and reflecting on them from the perspective of cultural ecology. Domestic scholars' research on minority cultures and music genes has provided important inspiration and reference for the in-depth study of this topic, but as a whole, there are still some shortcomings: firstly, the research presents a sporadic and fragmented state, and lacks of systematicity; secondly, there is not enough research on the regionalised cultural gene system; thirdly, there is not enough

excavation of research on the genes of minority music forms; fourthly, there is a lack of research on the rationality and legitimacy of the concepts and practices of piano composition and practice. The fourth is the lack of empirical in-depth analyses on the study of the rationality and legitimacy of piano creation concepts and practices. Therefore, the authors intend to promote the study of folk music genes in the piano works of Southwestern ethnic groups through this study, so as to further systematise, regionalise and deepen them, and to further decipher the character traits of Southwestern ethnic music, such as local originality, poetic and philosophical, which are of more important research value.

4. Conceptual Framework

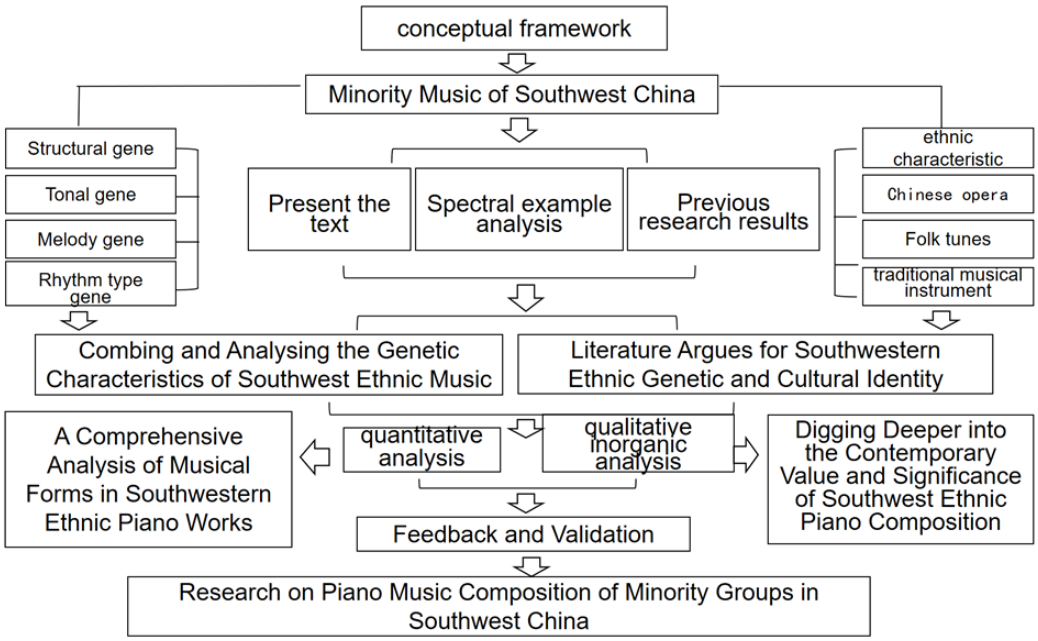

Figure 1 Conceptual Framework

METHODOLOGY

1.The population and sampling

Using the National Library of China-National Digital Library of China-National Canonical Books Museum (https://www.nlc.cn/web/index.shtml) as a search engine, the search results for "Chinese piano works" are 960 kinds of books, which can be summarized as follows: under the name of a certain Chinese composer, there are more than 70 books of piano works. Under the name of a Chinese composer, there are more than 70 collections of piano works. There are more than 40 books of piano works with the name of a certain piece. There are more than 100 volumes of Chinese piano works, including arrangements, vocal pieces and children's songs. There are also other collections of Chinese piano works, such as examination tutorials, teaching selections and prize-winning repertoire of Chinese piano works for competitions. The author consults a number of music academy teachers, pianists and composers through interviews, and the overall approach is divided into two categories, one is the selection of works from book collections, and the other is the selection of works from CNKI scholars who have already done relevant research. One is the selection of works from book collections, and the other is the selection of works from CNKI scholars who have already done relevant research. The scores selected for this collection are always checked by the composers themselves to ensure accuracy. Even in the case of composers who are deceased, the scores are confirmed by their family members or by performers who were instructed by the composers, so the scores are highly authoritative.

In order to successfully complete the research and analysis of this dissertation and improve the accuracy of the data and research results, based on the combination of various scales used by previous scholars for sampling piano works, selecting musical elements of creators and studying musical genes, we have repeatedly discussed and revised each item of the scales and interview outlines with relevant experts, teachers and classmates to ensure that the sampling of piano works is reasonable and the interview outlines are accurate to ensure the validity of the data.

The steps for selecting musical scores in the thesis: A preliminary catalogue of 20–30 piano works with ethnic themes was compiled using library/database keywords such as ‘ethnic piano’, ‘Yunnan style’, and ‘Yi music’. Following background confirmation, pre-evaluation of ethnic elements, and assessment of academic support, a final purposive sample of 20 piano works was selected for systematic musical score analysis. These works represent four major cultural regions of Southwest China and span multiple ethnic groups including the Yi, Dong, and Tujia peoples. All selected works are supported by published scores and verified through composer interviews, family confirmation, or performer testimony.

Background confirmation Check composer's biography to confirm ethnic or regional background Composer's chronology, interviews, publication notes

Pre-evaluation of elements Read the introduction to the score or listen to the audio to make a preliminary assessment of the use of ethnic elements.

Assessment of academic support Check for papers, reviews, textbooks, expert advice, CNKI/Baidu scholarship.

2. Data collection

Literature research is often carried out through theoretical interpretation and comparative analysis of existing literature in the form of figures, words, symbols, images, sound and video information, helping researchers to discover

the inner connection of things and find the regularity of social phenomena. The biggest characteristic of this approach is that it does not directly contact the research object itself, it mainly uses second-hand information for research, so it has a very obvious indirectness, non-interference and non-reaction. The literature research of this research is based on the collection of literature and the analysis and comparison of literature as the basis of the research, and on the basis of dealing with the dialectical relationship between historical materials and historical facts, it strives to provide a more reasonable description of the object of research; the literature research mainly adopts the Google Scholar and Elsevier, EBSCO, CRS core thesis database, SpecialSci State Road foreign language database and ISI and other five major Foreign Language Journal Database, China Knowledge Network and Master and Doctoral Degree Database, and ReadShow Academic Search for relevant literature, covering academic papers, electronic books, news media reports, government department reports, statistical yearbook survey research, paper books, and other online or physical materials. To collect and summarise the theoretical and empirical research results on the concepts, theories and methods of cultural genes, musical genes, work analysis and other related studies at home and abroad.

3. Interviewing

This study focuses on in-depth interviews with composers, theoretical researchers, and inheritors of folk music genes in folk piano works on the basis of theoretical compilation and empirical research. In this study, based on the main questions of the research, the interviews are used to understand the influence of music genes on the creation of Chinese folk piano works, so as to analyze the relevant attributes, dimensions and creation strategies of music genes.

4. Data analysis and interpretation

The data analysis is based on sampling and in-depth interview information to explain the confidence level and research value of the research subjects and interviews observations as well as careful analysis and documentation of melodic, rhythmic, harmonic, and structural aspects of the works were made.

In-depth interviews were conducted with theoretical researchers and contemporary composers, combined with interview outlines, descriptive summaries were made, and interview transcripts of all interviewees were compiled and combined with the analyzed data to support the research goal of " Analyzing the Characteristics of Folk Music Morphogenetics in Southwestern Ethnic Piano Works ".

Based on the analyses and interviews, based on the cultural ecology theory, we summarize and put forward the strategies for the creation of piano works, so as to achieve the research objectives of "analysis of the creation methods of folk music form genes in the piano music works of Southwestern ethnic groups" and "analysis of the creation strategies".

RESULTS

1. To analyze the genetic characteristics of folk music in Southwest China.

1.1 National character - The manifestation of Yi ethnic gene characteristics in the piano.

The Yi ethnic area is located in the southwestern part of China. The flowing rivers and the overlapping mountains separate the local people from the economic and cultural exchanges with the outside world. This ethnic group is one with numerous branches. Due to the perilous terrain and the surrounding mountains layer upon layer, the economic development level among the various

villages is relatively low, which blocks communication with the outside world. Therefore, many original and simple ethnic music have been preserved. There are songs such as the "Moon Jumping Song", the "Peacock Song" of the Dai people, and the "High-pitched Mountain Song" in the western dialect area, each with its own characteristics.

Zhang Chao's "Three Mountain Songs of Southern Yunnan" is composed of three movements: "Mountain Child", "Mountain Moon" and "Mountain Fire". The content presented in each movement's score is independent of each other. The entire piece is permeated with the cultural element of "mountain" throughout. "Shan Wa" depicts the Yi people, "Shan Yue" depicts the scenery of the Yi people, and "Shan Huo" depicts the customs of the Yi people.

1.1.1 Melodic Gene Characterisation

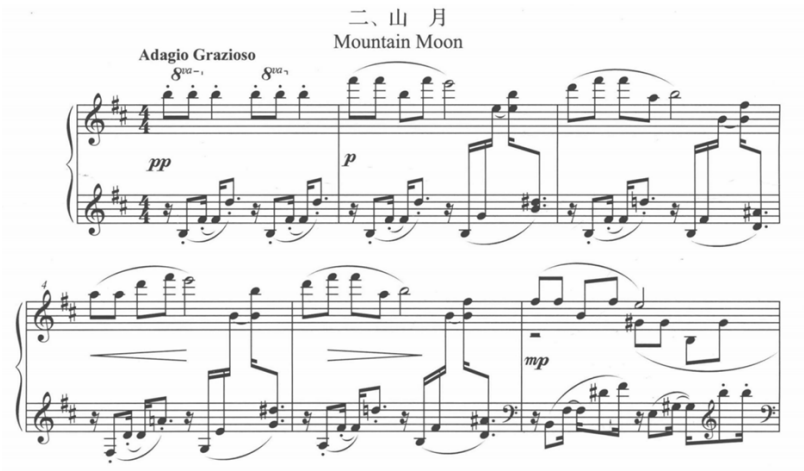

Figure 2 the melody is very characteristic in its combination of movement and static

In Zhang Chao's Three Mountain Ballads of Southern Yunnan, the theme of the second song, "Mountain Moon," is a good example of the melodic

characteristics of Yi folk songs. The melody has great ups and downs, most of which are jumps of more than four degrees, with very few smooth cascades, and the melody is very characteristic in its combination of movement and static. (Figure 2)

1.1.2 tone tonal gene characteristics

In Dian culture, the tonal modal characteristics of folk music include pentatonic modes, diverse modal changes, unique intervals and ornamental tones, frequent tonal shifts, and polyphonic and polyphonic techniques, which together constitute its unique musical style. For example, in "Shanwa" from Zhang Chao's Three Mountain Ballads of Southern Yunnan, the piece begins in the key of D-flat and moves to the key of G-flat as the melody progresses, playing the same melody at different pitches, creating a contrast of colors. (Figure 3)

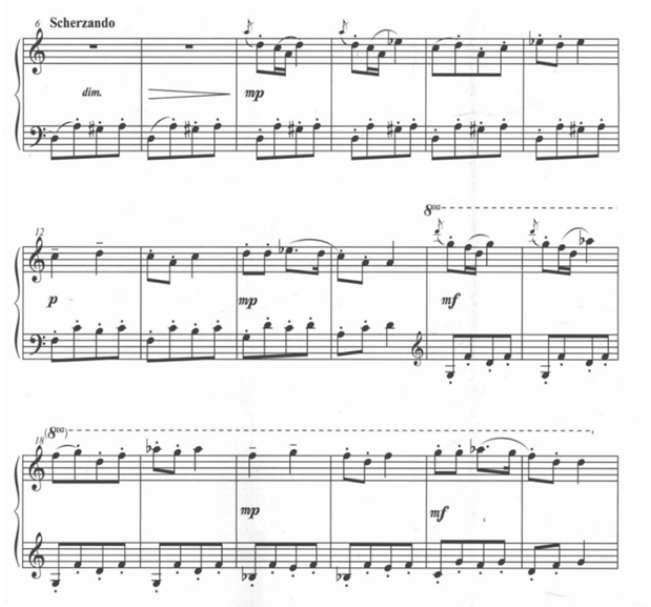

Figure 3 Score examples

We can also observe that in the use of the pentatonic scale, a unique ethnic mode of the Yi people, Yunnan works employ lowered tones.

1.1.3 Rhythm Gene Characterisation

The rhythm genes of the Yi ethnic group are manifested in the imitation of rhythm to reflect the movement of ethnic music and folk songs.In Dian culture, the rhythmic gene is shown in the rhythmic imitation to reflect the rhythm of national music and folk songs. Yunnan culture is deeply influenced by the culture of ethnic minorities, and the rhythm of music is closely related to religious ceremonies and festivals. In the Yunnan piano works created with Yi and Hani music elements, the style is mostly based on light and lively dance music, custom songs, and soft and gentle love songs and mountain songs. Most of the custom songs take syncopated rhythm, appoggiatura rhythm, triplet rhythm, forty-six rhythm, sixteen-four rhythm as the core rhythm, and on the basis of which changes are made to derive other rhythmic combinations with strong dance rhythm. Love songs and mountain songs are mostly based on smooth four-minute and eight-minute rhythms, showing the lyricism and softness of the scene. For example, in Zhang Chao's "Shan Wa", the left hand sets off the melodic lines of the right hand through the fixed rhythmic pattern of four eighth notes, and the image of the living little doll pops up on the paper. Yunnan is a place where many ethnic groups live together, and the rhythms of their music are rich and varied. For example, the music of the Dai ethnic group is light and fast, commonly used 2/4, 4/4 beat; the music of the Yi ethnic group is more complex, commonly used compound beat (such as 5/8, 7/8 beat). From this, we can summarize the ethnic characteristics of the Yi people reflected in piano works.

Table 1 The table shows the types of genes, traditional music of the Yi people, and the fusion of national genes in piano works.

Gene type	**Yi ethnic music**	**The embodiment of national genes in piano works**
Melodic gene	Yi ethnic music is generally performed in four degrees and in the form of folk song duets	The beginning of "Mountain Child" is composed of three rapid sixteenth notes, forming a fourth and fifth interval relationship. In the piece "Mountain Moon", the author presents it by using the note arrangement of "fish biting its tail" in the score The sound effect of question-and-answer is a unique form of expression in the duet of minority love songs.
tone tonal gene	The pentatonic scale and four-tone series of ethnic groups	The A-C-D-bE four-tone series is in the A feather mode and the D feather mode.
Rhythm Gene	The "Axi Moon Jump" takes three steps and two shots, which involves waving hands with both hands.Take three steps forward with your feet, then clap your hands, jump your feet and kick your legs for two steps. Make up a set of five beats	"Mountain Boy" adds layers to the piece by using a large number of staccato and the last sixteenth note, making the music full of tension and vividly depicting the lively and innocent image of the mountain boy. Used in "Mountain Fire"The combinations of 2/4, 3/4 and 3/8 alternate.

Gene type	Yi ethnic music	The embodiment of national genes in piano works
Instrumental gene	The Yi ethnic group's sanxian and Yueqin	The first five bars of "Mountain Boy" use a free-form decorative note to simulate the special sound effect presented by the Yi ethnic instrument sanxian during performance. Zhang Chao imitated the performance effect of the traditional Yi Yueqin by using tight hexavalent notes in this creative layout.

1.2 National character - The manifestation of Dong ethnic genetic Characteristics in the piano

1.2.1 Melodic Gene Characterisation

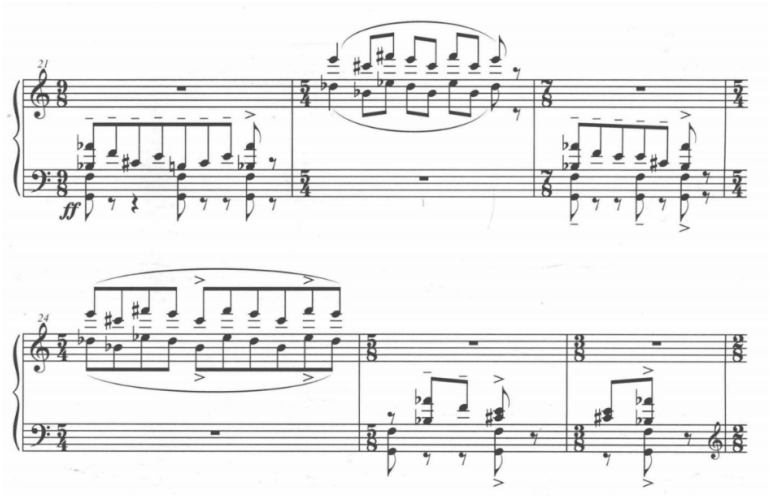

Figure 4 Score examples

The Dong ethnic group is mainly distributed in Guizhou, Hunan, Guangxi and other places. The music culture of the Dong ethnic group is very rich, featuring distinct ethnic characteristics and local styles. It is renowned for its unique harmonic system, natural and dynamic melodies, and profound cultural connotations. The most prominent feature of Dong ethnic music is its folk song form of multi-part chorus, especially the "Dong Grand Chorus", which is the most famous and is hailed as the "Heavenly music". The most notable feature is the multi-part chorus where "one leads the others in harmony". There are also genres such as labor chants, sacrificial songs, and love songs, mainly based on the pentatonic scale, but often featuring altered notes and embellishments, thus forming melodic styles with distinct regional characteristics. Glissando, vibrato and apposition are rich, and the vocal range is relatively wide. Almost all the people in Dong ethnic villages can sing. Music is an important way for the community to unite. The melody in Chen Yi's Dong ethnic work "Duoye" represents the characteristics of the Northern Dong ethnic group. "Duoye", in simple terms, "Duo" means singing and "Ye" is a common interlude in Dong folk songs. It is one of the common forms of Dong folk songs and large-scale group dances, carrying the graceful meaning of "dancing to the song". The music has a strong melodic quality, a wide range, and a high-pitched and resounding tune (Figure 4), which also reflects the characteristics of the Dong people, who are bold and unrestrained.

1.2.2 tone tonal gene characteristics

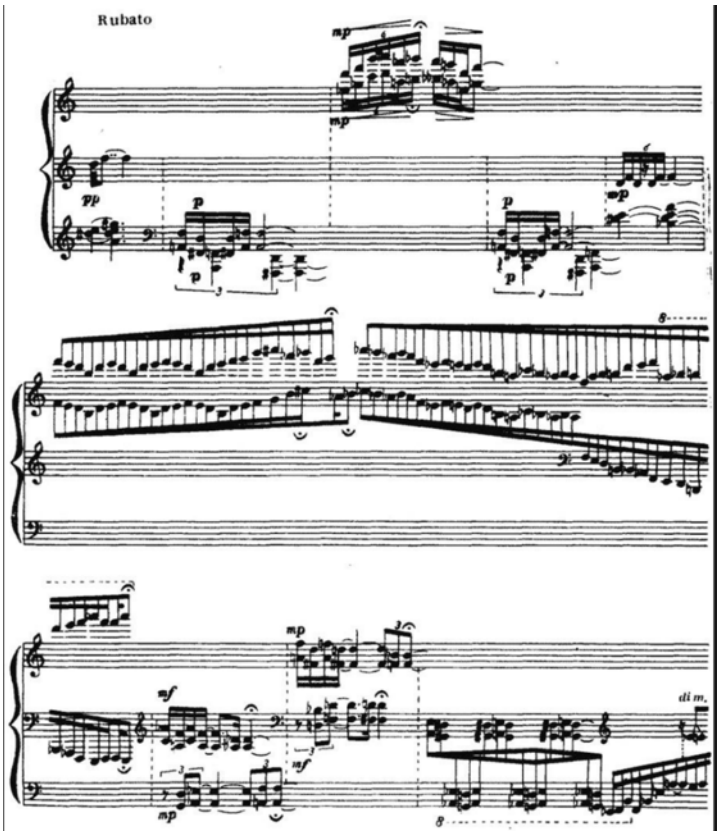

Figure 5 Score examples

In Qian culture, taking Zou Xiangping's "Improvisation - Dong Country Drums" as an example, the composer mines the original materials of Dong music, such as polyphonic forms, rich rhythmic changes and free imitation of tonality, to show the spiritual connotation of Dong music. In the prelude, the composer uses a large number of intervals, among which the minor third has an important position in the number of times used and the position of the voice part, and in the process of using intervals, the major third is very rare, which reflects the characteristics of the Dong music, such as the "Haunting Tune" and the "Great Song of the Dong Ethnic Minority", and also sets the stage for the whole piece.

This reflects the characteristics of the Dong music, and also sets the tone for the whole song. (Figure 5)

1.2.3 Rhythm Gene Characterisation

The ethnic minorities in Guizhou, such as the Miao and Dong, have complex and diverse musical rhythms, and often use the compound beats 6/8 and 9/8. Especially for musical forms such as the Dong Grand Song, emphasis is placed on the coordination of multi-part rhythms, with distinct layers. For instance, in Chen Yi's "Doye", it is shown that the Dong people not only love the lusheng, but the Dong drum is also an indispensable musical instrument. The author demonstrated the imitation of drum beats by marking rhythmic patterns and accents.

From this, we can summarize the ethnic characteristics of the Dong people reflected in piano works

Table 2 The table shows the types of genes, Dong ethnic music, The embodiment of national genes in piano works

Gene type	**Yi ethnic music**	**The embodiment of national genes in piano works**
Melodic gene	The Dong folk songs are the most famous. The "Dong Grand Song" was successfully inscribed on the "UNESCO Intangible Cultural Heritage List" as early as 2009. It is mostly a monophonic	The piece "Dong Drum Tower" begins to present the most representative minor third interval "d2-f2" in the Yu mode of Dong Grand songs, and the melody is mostly pentatonic.

Gene type	Yi ethnic music	The embodiment of national genes in piano works
	melody and a polyphonic texture, with major, minor, and perfect fourth intervals and their inversions (minor seventh, major sixth, and perfect fifth), and occasionally uses major third (or minor sixth) intervals	
tone tonal gene	The pentatonic scale is mostly in the feather scale	It is written in atonal mode, but there are a large number of minor third intervals in the score.
Rhythm Gene	Multiple compound beats	In "Doye", 9/8 time is used. The beats such as 4/4 and 6/4 are used in "Drum Tower of Dong Village"
Instrumental gene	Lusheng, Dong pipa, Dong drum, etc	In "Doye", it is shown that the Dong people not only love the lusheng, but the Dong drum is also an indispensable musical instrument. The author demonstrated the imitation of drum beats by marking rhythmic patterns and accents.

1.3 Regionalism - The Ba-Shu Culture of the Land of Abundance and the Three Gorges of the Yangtze River

1.3.1 Melodic Gene Characterisation

Sichuan, or Shu for short, is known as the "Land of Heavenly Capital", and is the birthplace of Shu culture, with its rich historical and cultural heritage. The birth of "Ba culture" is extremely long, from the point of view of the formation of Ba culture, its cultural characteristics and the natural geography of the southwestern mountains have a very close relationship. In the process of ethnic migration, Ba culture was also spread along the way, and in the course of history, it derived or fused the cultural characteristics of the Miao, Dong, Bai and other southern ethnic minorities. Folk song repertoire of Ba Shu region, such as "Kang Ding Love Song", "The Sun Comes Out Joyfully", "When Will the Sophora Blossom Bloom", etc. have been adapted for piano, with different styles in different versions, and "Twelve Sichuan Folk Songs", "Plank Truck Horns", "Flying a Kite", etc. have also been adapted from the traditional folk music of Ba Shu.

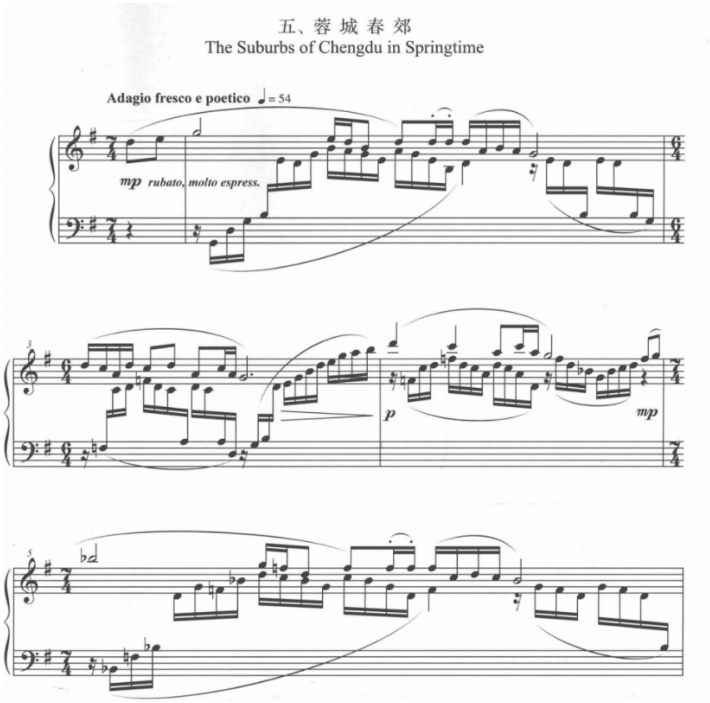

Figure 6 Score examples

The Sun Comes Out Gladly" is one of the representative works of Chongqing's mountain songs. Huang Huwei's "Painting of Ba Shu", as can be seen from its title, carries on the genetic characteristics of the land of Ba Shu. The fifth piece, "Spring Suburb of Rongcheng", is melodically derived from the Yibin folk song "The River Rises", with the core tone sol-la-do-re developing in a gradual progression, the melody undulating gently and gracefully, and a large number of running scale weaves depicting the scenery of the wide plains with babbling brooks and streams. Incorporating the composer's nostalgia for the scenery of his hometown, it depicts the lush green fields of the Chengdu plains, the hills of the Rapeseed flowers and a babbling brook running. (Figure 6)

1.3.2 tone tonal gene characteristics

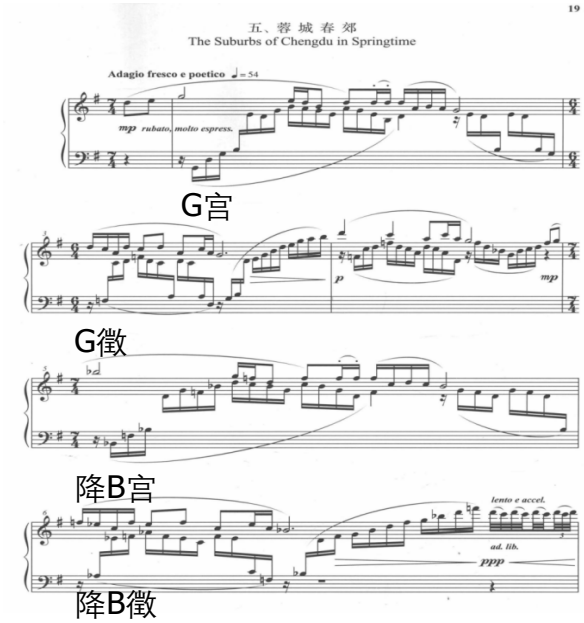

Figure 7 Score examples

In the culture of Ba Shu, the modes of feather and levy are often used, forming the "Shu Yu" and "Shu Zheng" modes with the characteristics of Ba Shu. Influenced by the natural culture and dialectal tones, the tones and modes of Ba Shu folk music and piano music compositions have formed the tone and modal characteristics with the feather as the central tone and the "Shu Yu" mode as the main one, and the tonal structure is often based on the "Feather-Gong-Shang" or "Feather-Gong-Horn". The tonal structure is often based on "Feather-Gong-Shang" or "Feather-Gong-Jiao". For example, in Huang Huwei's "Spring Suburb of Rongcheng", the piece starts with the G-gong modulation and changes to the G-chant modulation in the second measure, and after a short section of the piece, it changes to the B-flat Gong in the fourth measure, and then to the B-flat Chant modulation in the fifth measure (Figure 7), which is a very typical demonstration of the tonal features of the Bashu tuning, and at the same time, it also adds even more eye-catching changes of colour to the piece.

1.3.3 Rhythm Gene Characterisation

Ba Shu culture is deeply influenced by Han culture, and musical rhythms are closely integrated with opera and folk art. Ba culture is closely related to the landscape environment of the Yangtze River Basin, and the music rhythms mostly reflect the labour life and natural environment. The rhythms are mostly smooth, often in 4/4 time, and melodic. For example, the music of the famous Sichuan Opera is rich in rhythmic changes, alternating between fast and slow, with a strong sense of drama. For example, in "Aba Night Meeting", the theme melody uses the rhythm pattern of eighty-six plus four sixteenths, which makes the music move forward continuously, and the left hand accompaniment part, which adopts the rhythm pattern of four eighth notes, makes the whole music present a vibrant gesture, and the people of ethnic minorities dance joyfully in the rhythmic music. The ending chords, reflecting the last beat of the Sichuan tap dance, the last stroke of the tap, and the clanging sound produced by the ground, are embodied in the piano work

1.4 Regionalism- Wuling Corridor Culture

Located in the transition zone between east and west, the Wuling region has historically been deeply influenced by the Chu culture, the culture of the Yunnan-Guizhou Plateau and the cultures of Shu and Hanzhong, making it a depositional belt of diverse cultures. From the viewpoint of cultural division, it is the meeting place of the culture of the Central Plains and the culture of the ethnic minorities in Southwest China. From the point of view of the social status quo, it is the combination of the central and western parts of China, and the migration and intermingling of the ethnic groups of Sichuan, Chongqing, Hubei, Hunan and Gui; the comprehensive features of the Wuling Corridor provide a broader creative space for the composers, and in the context of cross-fertilisation, the piano works, such as Wang Jianzhong's Liu Yang River Tan Dun's Memory of Eight Watercolour

Paintings, contain folk tunes that are familiar to us; Tan Dun's Watching the Opera Xi Qiming's "Flower Drums" and Lu Pei's "Mountain Songs and Copper Drum Music" are typical works that use a combination of folk tunes, as well as operatic and ethnic instrumental tunes and other cultural combinations as their source material.

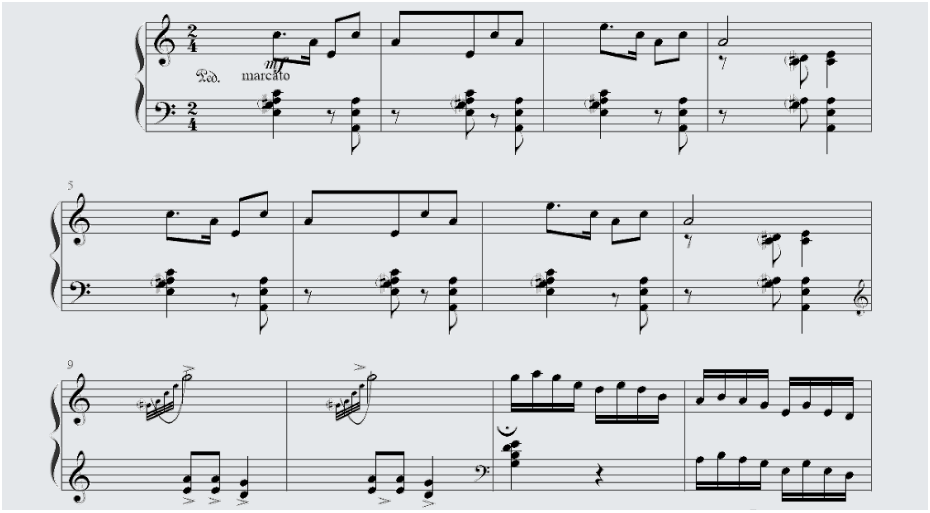

Figure 8 Score examples

In the culture of the Wuling Corridor, Hunan, for example, the Hunan Flower Drum Opera was inscribed on the second batch of national intangible cultural heritage list in 2008, and the tuning of the Hunan Flower Drum Opera has the characteristic plumage tuning of Hunan, with a slight elevation of the shang and the zheng tones in the pentatonic tuning. The name of the opera can be expressed as la do re/#re mi sol/#sol, and sometimes the shang tone is often used as an auxiliary tone, written as a four-tone column. In modal terms, the plagal tone is the most common. For example, in Xi Mingqi's Hunan Flower Drums for piano, starting in the key of A plagal tone, the singing technique of the flower drum opera begins with a flicking of the tongue in front of a leaning tone, and a

raised levitation is added (see the chord on the left hand side of the first bar of the following example). The piece moves to #f-flat mode in measure 46, #c-flat mode in measure 60, g-flat mode in measure 76, and finally returns to a-flat mode in measure 98 of the recapitulation section. The entire piece is in the key of the feather, and has the typical raised shang and zheng tones of the flower-drum theatre, with the expression of the flicking tongue (Figure 8)

In the culture of the Wuling Corridor, which is dominated by mountainous ethnic groups, musical rhythms are mostly related to rituals, festivals and daily life. The Wuling Corridor is a place where many ethnic groups meet, and the rhythm of the music is a fusion of the characteristics of the Tujia, Miao, Dong and other ethnic groups. For example, the Tujia's "Hand Waving Dance" has a solemn rhythm and is often performed in 4/4 time, which has a sense of ceremony. Another example is the mountain songs of the Tujia, which have free rhythms and are often performed in a loose tempo. For example, Xi Mingqi's "Hunan Flower Drums" imitates the musical expression of national instruments. The rhythmic patterns of eighty-six and twenty-eight, and twenty-eight and four are used, imitating the beating of the gongs and drums, a common accompaniment in flower-drum theatre, and further rendering this sense of clamour in the harmony, using the minor second in the dissonant intervals to create the atmosphere.

2. To conduct a study on the creation of ethnic piano works in Southwest China.

It is because of the regional reasons that Chinese composers create works with similarities and differences, and they combine the national elements to create rich and colourful piano compositions. The author mainly analyses the genes of ethnic music in different regions to provide a blueprint for composers.

2.1 The creation of Southwestern ethnic piano works is a fusion and innovation of Chinese and Western cultures.

Cultural fusion: Southwestern ethnic piano works successfully combine traditional Chinese musical elements with Western piano techniques to create a unique musical style. For example, the use of pentatonic scales, ethnic modes and traditional melodies, along with Western harmonies and compositional structures.

Innovative: composers have made a number of innovations based on tradition, such as through the Piano music is enriched by imitating the timbre and playing techniques of ethnic instruments.

2.2 The Use of Folk Music Genetics for Southwestern Ethnic Piano Works

Creation offers a wider range of ideas In terms of melody and scale, the pentatonic scale is widely used in Southwestern ethnic piano works and ethnic modes, the melody has a distinctive ethnic character. In terms of rhythm and beat, ethnic dance rhythms and compound beats are often used in the works, such as the moon dance rhythm of the Yi ethnic group and the drum beat rhythm of the Miao ethnic group. In terms of imitation of musical instruments and timbre, the timbre of ethnic instruments is successfully imitated through specific piano playing techniques, such as the use of pedals and the way of touching the keys. For example, imitating the distant tone of the Guqin or the crisp tone of the pipa.

2.3 The creation of Southwestern ethnic piano works offers new ways to express the emotions and culture of ethnic folklore

Southwestern ethnic piano works express rich emotions through the language of music, such as the depiction of natural landscapes, the praise of ethnic culture and the narration of historical stories. The ethnic musical elements

in the works enhance the listener's sense of cultural identity, which is especially important in a multicultural context.

2.4 The creation of Southwestern ethnic piano works has led to more varied structures and forms of the works

Structure: Works often adopt the structure of traditional Chinese music, such as "start", "end", "end", "end", "end", "end", "end", "end" and "end".

The "bearing and turning", as well as the Western musical forms, such as sonata form and variation form, are also borrowed. Improvisation and fixation: Some works incorporate elements of improvisation from folk music, increasing the flexibility and expressiveness of the work.

DISCUSSION

Through discussions and interviews with scholars, previous research on ethnic music in the southwest region often focused on case studies of individual ethnic music traditions, while the systemic integrity of Southwestern ethnic piano works was underexamined. The piano works of ethnic groups in Southwest China have distinct cultural characteristics and are an important domain for the inheritance and dissemination of ethnic music. The study of these works can provide a basis for understanding the integration of Chinese and Western music cultures and is conducive to the further promotion and exploration of classic works. The findings of this study align with Zhao Dongmei's (2023) work on the encounter of Eastern and Western musical genes, which advocates cultivating musical thinking rooted in traditional Chinese culture, and with Chen Qishang's (2012) framework of seven dimensions of genetic inheritance in traditional Chinese folk music. These theoretical frameworks support the validity of the four-gene typology (melodic, tonal, rhythmic, and instrumental genes) identified in this study

as a comprehensive system for analysing and preserving ethnic musical heritage. At the same time, this study found that the research subject has certain limitations. The scope is limited within the perspective of piano music works, and no research has been conducted on the dissemination methods of other types of national music culture. Judging from the current status of domestic research, studies on the national characteristics of piano works and the integration of piano works with ethnic songs and dances have been carried out extensively. The present study contributes to this field by moving beyond single-work analysis to propose a regionalized, systematic framework of musical genetic characteristics, thereby providing a basis for the inheritance of musical cultural heritage, the recognition of musical identity, and the creative teaching of composers.

CONCLUSION

By analysing the research on piano music composition of Southwest ethnic minorities, the author draws the following conclusions:

1. It is of great significance for composers to write works related to ethnic music. By analysing the characteristics of folk music, composers can deeply understand the cultural background, historical traditions and aesthetic concepts of specific ethnic groups, so as to accurately convey these cultural elements in their works. At the same time, they can innovate on the basis of tradition, combine the elements of ethnic music with modern compositional techniques, and create works with both ethnic characteristics and a sense of the times.

2. It not only contributes to cultural heritage and innovation, but also enriches the musical language, enhances emotional expression, makes use of unique instruments and timbres, explores a variety of structural forms, facilitates cross-cultural exchanges, and has educational and research value. Through in-

depth understanding and skillful use of folk music characteristics, composers can create outstanding works with both national characteristics and international influence. The creation of Southwestern folk piano works promotes the exchange and understanding of Chinese and Western music cultures, and provides international audiences with a window into Chinese folk music.

3. Against the backdrop of promoting China's fine traditional culture and the belief that "historical research has become the foundation of all social sciences", conducting research and summarizing on the application of the genes of ethnic and folk music and proposing creative methods is crucial for exploring the cultural spirit of ethnic and folk music and constructing the theory of folk music culture in Southwest China. Promoting the innovative development and creative transformation of ethnic and folk music in Southwest China has positive theoretical significance and application value.

RECOMMENDATION

Through discussions and interviews with scholars, previous research on ethnic music in the southwest region often focused on isolated case studies of individual ethnic music traditions, leaving the broader integrity of Southwestern ethnic piano works underexamined. Ethnic piano works in the southwest have distinct cultural characteristics and are an important domain for the inheritance and dissemination of ethnic music. Studying them can reveal the deeper connotations of regional music culture and inform both composition pedagogy and cultural policy. This study has several limitations. The scope is confined to the perspective of piano music works, and other modes of dissemination for national music culture—such as digital media, oral transmission, or ensemble performance—were not examined. Future research is recommended in the

following areas: (1) investigation of how identified musical genes (pentatonic modes, compound rhythms, instrumental timbres) can be incorporated into tertiary-level piano pedagogy to strengthen students' ethnic cultural identity; (2) development of a national-level curated digital score database, organised by ethnicity, region, and cultural integration category, to support both research and performance; (3) mixed-methods studies combining quantitative corpus analysis of musical scores with qualitative composer interviews to validate and expand the genetic typology proposed here; and (4) cross-regional comparative studies examining how musical genes from Southwest China compare to those of other ethnic minority regions in China, contributing to a broader theory of Chinese musical genetics. Policymakers are encouraged to support the inclusion of Southwest ethnic piano repertoire in conservatory curricula as a mechanism for productive cultural heritage preservation.

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