Article

Acoustical Traditions and Cultural Identity: Exploring Kunqu's Contribution to Collective Memory

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Abstract: Kunqu Opera, hailed as the "ancestor of all Chinese operas", plays a crucial role in preserving cultural identity and collective memory in the Jiangnan region. This research examines the acoustical traditions of Kunqu. Through expert interviews and thematic analysis, the study explores key acoustic elements, including vocal techniques and musical structures, and their symbolic and emotional impact. Five central themes emerged, including Kunqu's role in collective memory, its function as a cultural symbol, the evolution of its transmission, the emotional resonance of its acoustic elements, and the modern challenges and opportunities for preservation. The findings highlight the importance of maintaining Kunqu's cultural identity within acoustical heritage, while also recognizing the need for innovation in its transmission. This research contributes to the broader discussion on intangible cultural heritage and provides insights into how traditional art forms like Kunqu can be preserved amidst modernization.

Keywords: Kunqu Opera; cultural identity; collective memory; acoustic heritage; intangible cultural heritage

1. Introduction

Kunqu, often celebrated as the "Ancestor of all Chinese operas", holds a significant position in the fabric of China's cultural heritage. Tracing its origins back to the Yuan Dynasty, Kunqu blends poetry, music, dance, and drama, forging a unique form of traditional Chinese theater that has withstood the test of time [1]. Recognized by UNESCO as a "Masterpiece of the Oral and Intangible Heritage of Humanity", the importance of Kunqu extends beyond its aesthetic and performative aspects. It plays a crucial role in embodying and transmitting the cultural values and collective memory of the Jiangnan region [2]. However, the acoustical traditions of Kunqu, particularly the roles of its musical structures and the acoustic characteristics of its performances in shaping cultural identity and collective memory, have not been thoroughly researched [3].

This study aims to address this gap by delving into the acoustical heritage of Kunqu and its influence on cultural identity and collective memory, thereby offering broader theoretical support for the preservation and transmission of intangible cultural heritage. To achieve this, the paper will focus on the following aspects:

- Defining the Core Acoustic Elements of Kunqu: This involves an in-depth analysis of the essential acoustic elements in Kunqu, including its unique qupai structures, role classifications, vocal techniques, and how these elements contribute to the musical expression within Kunqu.

- Analyzing the Role of Acoustic Elements in Cultural Identity: The study will explore how the acoustic elements of Kunqu contribute to the construction of cultural identity in the Jiangnan region, particularly how these elements, through performance and transmission, influence the region's cultural values and social identity.

- Exploring the Relationship Between Kunqu and Collective Memory: This aspect will investigate how Kunqu, through its distinctive performance styles and acoustic characteristics, becomes a part of collective memory, and how these memories are maintained and reproduced in the transmission process.
- Evaluating the Current State and Challenges of Modern Preservation and Transmission: A comprehensive assessment of the current efforts to preserve Kunqu's acoustic heritage will be conducted, including publications, digital archives, training programs, and promotional activities. The study will also explore the challenges faced in the context of modernization, particularly how to engage and cultivate interest in Kunqu among younger generations.

This research combines a literature review with expert interviews and thematic analysis to arrive at an overall understanding of the perennial cultural significance of Kunqu and the striving for heritage conservation that is currently taking place in China.

2. Literature Review

The literature review below explores the key components of Kunqu Opera, a traditional Chinese theatrical form with profound cultural significance. By examining essential terms and concepts, acoustical traditions, and the role of Kunqu in cultural identity and collective memory, this section provides a comprehensive foundation for understanding its historical, artistic, and cultural relevance. Furthermore, the impact of UNESCO recognition on Kunqu preservation highlights both the challenges and the opportunities for its continued transmission in modern society.

2.1. Key Terms in the Framework of Kunqu Opera

Kunqu Opera, as a traditional opera of ancient China and a classic representative, has always had an important position in Chinese culture due to its extensive and profound artistic form, as well as its unique performance system. In view of this, the following definitions will help those who seek a better overall understanding of Kunqu studies and preservation by acquainting themselves with some key terms. These terms form the foundational basis for understanding the art of Kunqu and serve as crucial tools for discussing the preservation and transmission of Kunqu culture.

- Kunqu Opera (昆曲): Kunqu, also known as Kunju, is one of the oldest surviving forms of Chinese theater, originating from the Kunshan region in Jiangsu Province. Renowned for its elegant music, rich performance styles, and profound literary value, Kunqu is celebrated as "the ancestor of a hundred operas" in China. In 2001, it was recognized by UNESCO as a "Masterpiece of the Oral and Intangible Heritage of Humanity" [4]. Kunqu Opera captures the essence of traditional Chinese culture through its beautiful melodies, complex vocal structures, and refined performance techniques [4–7]. Its artistic form combines singing, dancing, spoken dialogue, and martial arts, creating a diverse and expressive theatrical experience.
- Qupai (曲牌): Qupai refers to the named tune patterns used in Kunqu music. These are the basic units of Kunqu's musical structure, each with its distinctive melody and rhythm. The complexity of Kunqu's musical architecture relies heavily on qupai, which not only determines the melodic progression but also influences the rhythm and emotional expression of the performance [5–8]. The combination and variation in qupai add to the richness of Kunqu's musical expression, making it an indispensable part of the Kunqu musical system [6,7,9,10].
- Sheng (生), Dan (旦), Jing (净), Chou (丑): These are the four main role types in Kunqu Opera, each representing different character archetypes:
  ○ Sheng (生): Typically, male protagonists, divided into older (Laosheng) and younger (Xiaosheng) roles. Vocally, these characters' ranges are similar to baritone and tenor in Western opera [6,7].

- Dan (旦): Female roles, including different types like Qingyi and Huadan. These roles often use falsetto or mixed voice, with a vocal range akin to mezzo-soprano and soprano in Western opera.
- Jing (净): Characterized by distinct, exaggerated facial makeup, often representing powerful or villainous characters, using unique vocal effects to portray authority or cunning [5].
- Chou (丑): Comic roles, often portrayed as clowns or tricksters, typically performed in a higher vocal register with exaggerated tones to enhance the theatrical effect [6,7].

- Water Sleeves (水袖): Water sleeves are an important prop in Kunqu performances, consisting of long, flowing sleeves that enhance the expression of emotions and movements of characters. Skilled manipulation of these sleeves allows performers to convey subtle shifts in character emotion, adding a dynamic, visual component to the psychological portrayal of each role. In Kunqu, the rotation, waving, and sweeping of water sleeves not only captivate the audience but also deepen the storytelling, making them a fundamental aspect of Kunqu stagecraft [4,5]. The integration of dance and martial arts techniques in the use of water sleeves enriches Kunqu's theatrical expression, blending grace and precision [10]. The auditory dimension of Kunqu is also integral to the immersive experience. Studies show that the sound pressure level (SPL) and fundamental frequency (F0) are essential to delivering an effective vocal performance. For consistency and accuracy, SPL is typically measured at a distance of 30 cm from the performer's mouth. This distance accounts for variations in source proximity and the acoustic characteristics of the performance space, ensuring that the sound level reflects the true intensity of the performance as experienced by the audience. This acoustic standard allows for a more precise analysis of how voice and projection contribute to Kunqu's unique auditory experience.
- Chang (唱), Nian (念), Zuo (做), Da (打): These are the four fundamental skills in Kunqu performance:
  - Chang (唱)—Singing: The vocal aspect of Kunqu, known for its melodious and resonant quality, emphasizes control over timbre and breath, with sound pressure level (SPL) and fundamental frequency (F0) playing crucial roles in performance.
  - Nian (念)—Recitation: The spoken part, often delivered in classical Chinese, enhances the cultural depth of the drama through its alternation between speech and music [9].
  - Zuo (做)—Acting: Refers to the actors' movements and expressions on stage, which are usually synchronized with the musical rhythm and are essential for emotional expression in Kunqu [5–7].
  - Da (打)—Fighting: Combines martial arts and dance, playing a crucial role in the climactic moments of Kunqu performances.
- Hangdang (行当): Hangdang refers to the classification system of roles in Kunqu, primarily including the four main types: Sheng, Dan, Jing, and Chou. Each Hangdang is further subdivided based on the character's age, gender, and personality traits, such as Laosheng, Xiaosheng, Qingyi, and Huadan. This classification not only helps actors refine their skills in specific roles but also aids the audience in better understanding the character traits and plot development [4]. The detailed categorization also reflects traditional Chinese social perceptions of gender, age, and social status [11].

Understanding these key terms is crucial for in-depth research into Kunqu and its cultural connotations. As a complex art form, Kunqu's expressiveness and cultural depth rely on a precise grasp of these terms [4,11]. The detailed explanation of these terms not only aids readers in accurately understanding the artistic expression of Kunqu in subsequent studies and discussions but also provides theoretical support for the protection and transmission of Kunqu culture [4].

2.2. Acoustical Traditions

2.2.1. Traditional Music and Theater: Definition and Background

Kunqu Opera originated in the late Yuan and early Ming Dynasties (late 14th to early 15th centuries) in the Jiangnan region, gradually evolving from the Kunshan vocal style and reaching its peak during the Kangxi reign of the Qing Dynasty. However, Kunqu declined in the late Qing and Republican periods, particularly during the Taiping Rebellion and the Xinhai Revolution, when its transmission was severely affected. Nevertheless, after the founding of the People's Republic of China, Kunqu received substantial government support, particularly during its revival following the Cultural Revolution [4]. In 2001, Kunqu was recognized by UNESCO as a "Masterpiece of the Oral and Intangible Heritage of Humanity", highlighting its importance in international cultural heritage.

Through its complex musical structure and exquisite performance style, Kunqu conveys Confucian ethical values and aesthetic pursuits [12]. The master–apprentice system plays a crucial role in the transmission of Kunqu, ensuring the purity and integrity of the art form. The cultural transmission of Kunqu is not merely a continuation of techniques and performances but also enhances collective memory and cultural identity through symbolic and ritualistic actions. Additionally, Kunqu demonstrates unique value in multiple fields such as language, literature, music, and dance, and has found renewed vitality in modern society [7]. The revival of Kunqu is not only about the preservation of cultural heritage but also about the re-positioning and self-awareness of Chinese culture in the context of globalization.

The acoustic characteristics of Kunqu, including measures such as equivalent sound level (L_{eq}) and long-term average spectrum (LTAS), play a crucial role in differentiating characters by gender, age, and social identity. These acoustic elements are not just technical features of performance but are deeply intertwined with Kunqu's symbolic and cultural significance. By shaping how different characters are portrayed acoustically, these features contribute to the opera's ability to transmit cultural values and narratives. Research into these acoustic traits has demonstrated how they reinforce Kunqu's role in preserving traditional cultural identities through performance [13].

2.2.2. Musical Structure and Characteristics of Kunqu Opera

Being the epitome of Chinese opera, Kunqu shows a highly complicated and unique musical structure, especially in its tonality, melody, and rhythm. Kunqu melodies and rhythms are tight according to tonal patterns in Chinese characters, thereby reflecting the principle "melody follows the character" [14]. For instance, the melody of level-tone characters shows smoothness, and for that of rising-tone characters, they rise gradually, thus fully expressing the tonal characteristics of Chinese characters in the music.

The melody of Kunqu is extremely complex and varied, reflecting through scales and melodic lines the emotions and dramatic situations of the characters. Such complexity of all these combined features, together with various rhythmic arrangements, makes the Kunqu dramatic utterance extremely subtle and refined. The SPL and F0 of Kunqu also differ greatly for various characters and scenes, reflecting the gender, age, and dramatic context of the characters. The melody would have to go along not only with the rhythm of the lyrics but also with the emotions and dramatic conflicts that the narrative already carried within itself.

The instrumentation included in this version includes almost entirely traditional Chinese instruments, including flute, xiao, pipa, and erhu. These provide very rich tonal support for Kunqu's vocal style and are capable of emoting through various playing techniques. The combination of the two forms is the specific musical atmosphere of Kunqu, which helps the audience to feel and experience the emotions and plot development in the opera better [15,16]. Acoustic studies indicate that there is a substantial variation in the spectral features among the different states of singers' singing and Kunqu performers [6]. For example, the frequency range and sound pressure level of painted-face characters and

old male characters seem to be different, which indicates that Kunqu music has a highly complex and subtle artistic structure [17].

2.2.3. Role of Acoustic Traditions in Other Cultures

Kunqu, as a representative of traditional Chinese musical theater, exhibits both significant differences and commonalities with traditional musical theater forms in other cultures, such as Western opera [2]. Kunqu integrates multiple art forms, including poetry, prose, literature, and dance, forming a complex artistic system that contrasts sharply with the musical theater forms of Western opera [18]. Kunqu's music is smooth and emphasizes the fusion with poetry, closely tying emotional tone with subtle rhythmic changes.

Kunqu's vocal techniques are unique, combining both singing and speaking styles, which differs from the vocal techniques in Western opera, where vocal power and clarity are emphasized [19]. Acoustically, Kunqu and Western opera show significant differences, with the peak energy of Kunqu's sound concentrated between 0.7 and 1.1 kHz, while the singer's formant cluster in Western opera typically appears between 2.5 and 3.3 kHz [6,19].

Kunqu has demonstrated the ability to absorb and integrate elements of other musical cultures in cross-cultural exchanges, such as the modern version of The Peony Pavilion, which incorporates Western musical elements, expanding its expressive form [18]. In cross-cultural performance and exchange, Kunqu has gradually integrated modern acoustic technology and stage performance forms, ensuring its continued relevance in the context of globalization. Multicultural collaborations in Kunqu productions have further expanded its reach and impact. These collaborations highlight Kunqu's adaptability and its potential to convey universal themes, thereby enhancing its role as a cultural ambassador. Through international performances and academic exchanges, Kunqu continues to showcase its unique charm and cultural significance on the global stage [20].

2.3. Cultural Identity and Collective Memory

2.3.1. Theoretical Framework of Cultural Identity

Cultural identity is a complex and dynamic process, which may be deeply elaborated with the help of Benedict Anderson's theory of "imagined communities" and Stuart Hall's theory of cultural identity fluidity. According to Anderson, national and cultural identity are an "imagined community" organized through the use of mass media and cultural symbols; in other words, the community is not formed organically but is culturally produced and socially modulated [21,22]. On the other hand, Hall focuses on the fluidity and diversity of cultural identity by arguing that cultural identity is in no way fixed and constantly coming into redefinition in various historical and social contexts. The theory by Hall emphasizes fluidity and an unceasing change in cultural identity. He states that cultural identity is never constant but rather keeps on being redefined through social and cultural interaction. According to Hall, cultural identity is a historical heritage and a process of constant renegotiation within the context of present-day social practices [23].

These theoretical frameworks are fully demonstrated in the context of Kunqu. Being one of the important forms of Chinese traditional culture, Kunqu forms and consolidates cultural identity at many levels, and over time, through its unique artistic techniques such as poetry, music, and theater. Especially in the Jiangnan region, Kunqu is not only a local cultural emblem but also an indispensable carrier of cultural identity [2].

2.3.2. The Role of Kunqu Opera in Cultural Identity

By taking Kunqu as a representative symbol of Jiangnan culture, which played an important part in building local cultural identity, Kunqu should not be regarded merely as an art form providing a considerable amount of historical and cultural information but also as a unique historical and social background with its elegant performance and deeply rooted cultural connotation in this region [24]. That is to say, Kunqu keeps influencing the formation and development of contemporary cultural identity [25].

In modern society, Kunqu maintained as well as reshaped its cultural identity through media dissemination and cultural heritage preservation measures [26]. Measures to protect intangible cultural heritage and the use of modern methods of cultural communication are seen as a way of ensuring that Kunqu remains a symbol of cultural identity in contemporary society [27].

2.3.3. Concept and Role of Collective Memory

Collective memory is the perception and remembrance of the past created by social groups through their shared historical and cultural practices. This relates to social memory, which is something derived from social interaction and is formed in communication and interaction among groups. Collective memory enhances social identity in terms of not only defining a group for itself but also maintaining the continuity of culture and history [28].

Study on Kunqu and collective memory is commonly best achieved by using oral history, textual analysis, and fieldwork. Oral history collects individual stories and testimony to reflect group experiences, while textual analysis studies written and visual texts to reveal how memories are constructed and represented. Thus, fieldwork is entirely an immersive, ethnographic exercise focused on how collective memory is actually practiced in daily life. These techniques can appropriately be used to study Kunqu with the purpose of revealing its functioning within collective memory.

2.3.4. The Role of Kunqu Opera in Collective Memory

By frequently performing and reproducing the conventional repertoires, Kunqu becomes an inseparable part of their cultural memory. The long, complex history and cultural symbols embodied in the repertoire are passed down from generation to generation through performers, making them the collective memory of the group. In this way, by means of such performances, their cultural memory transcends plain preservation and re-enacts historical events and emotions [29].

More importantly, non-professional groups are the most important part of the performance dissemination of collective memory in Kunqu. These groups not only continue the performance tradition of Kunqu but also, through various cultural activities, ensure the continuation and dissemination of Kunqu's cultural connotations. This non-professional transmission method ensures the vitality of Kunqu in modern society [1].

2.4. The UNESCO Recognition and Its Impact on Kunqu Opera

Kunqu Opera was recognized by UNESCO as a "Masterpiece of the Oral and Intangible Heritage of Humanity" in 2001 and was subsequently inscribed on the Representative List of the Intangible Cultural Heritage of Humanity in 2004. This prestigious recognition highlights Kunqu's cultural and historical significance, marking it as a vital component of global heritage [30–32]. UNESCO's acknowledgment underscores the importance of preserving and promoting this ancient art form, ensuring its continued relevance and survival in the modern world [33].

The inclusion of Kunqu Opera on UNESCO's intangible cultural heritage list has significantly influenced preservation efforts. Key initiatives include the following:

- Publication of Kunqu Texts: There is a current project of publishing a full set of Kunqu Opera texts of the Ming Dynasty, which will help safeguard the literary and artistic value of these operas for future generations [30].
- Archiving Documentation: A major concern has been creating video archives on the knowledge of old Kunqu actors. These recordings have been of great help for training and research, preserving the subtle performance techniques that define Kunqu [31].
- Training Programs: There are established training programs meant to nurture new talent. These provide comprehensive education on Kunqu performance and technical skills to ensure the continuity of the Kunqu tradition in an era where interest is diminishing among young people.

- Digital Programs: Supported by the Cambridge Rivers Project, the Kun Opera Digital Museum project has put in place an online database for the preservation and display of artifacts related to Kunqu. Digitization enables individuals worldwide to gain access to the vast cultural legacy of Kunqu and facilitates them in learning and experiencing the art of performance better [33].
- Promotional Activities: A promotional program includes media campaigns and the organization of Kunqu Opera festivals. These festivals, held biennially, celebrate Kunqu's legacy and provide a platform for performances and cultural exchange.

Against all this effort, Kunqu still faces strong challenges like competition with contemporary mass cultures and a high level of technical demand placed on its audience. This calls for the support toward the sustainability of Kunqu not to stop at the national policy level, as it needs ongoing and inventive ways of integrating modern technologies, attracting younger audiences, and bolstering governmental and non-governmental initiatives.

2.5. Acoustic Design of Kunqu Opera Theaters

An exploration of the spatial and acoustic design of Kunqu Opera theaters reveals the unique structural and auditory characteristics that distinguish Kunqu spaces from Western-style theaters. This analysis not only enriches the understanding of traditional Chinese theater architecture but also provides valuable insights for enhancing the audience experience.

2.5.1. Geometric Layout and Spatial Characteristics

Kunqu theater geometry features distinct design principles that contrast with those of traditional Western opera houses. Kunqu theaters typically use a flat seating arrangement that minimizes the distance between the audience and stage, fostering a close, interactive experience that is crucial for conveying the subtle emotions characteristic of Kunqu performances. This layout contrasts with the multi-tiered structure of many Italian opera houses, such as the horseshoe-shaped theater type, where spatial design enhances both visual sightlines and acoustic reflections. Research shows that such geometric arrangements distribute sound more effectively across seating areas, ensuring a balanced auditory experience for all audience members. These studies offer valuable insights into how traditional Kunqu theater spaces might be adapted or modernized without sacrificing their intimate, audience-focused design [34].

Additionally, the use of geometric acoustic simulations could provide potential for optimizing Kunqu theater spaces. Research on ancient open-air theaters, such as the theater of Syracusae, demonstrates that acoustic parameters like sound strength (G) and direct-to-reverberant ratio (DRR) can be fine-tuned through simulation software to optimize sound distribution. This approach can be used to improve sound quality in Kunqu theaters, helping to balance auditory clarity across all seating sections [35].

2.5.2. Acoustic Characteristics and Design Adjustments

The acoustic demands of Kunqu Opera are particularly distinct, given the vocal style required to convey rich emotional expressions. Kunqu performers often rely on pronounced tonal shifts and controlled volume, with pitch variations essential for expressing the nuanced characters within the performance. Studies indicate that stage speech in Kunqu differs significantly from conversational speech, with increased sound pressure levels (SPLs) and broader frequency variation. These characteristics underscore the need for theater spaces that can accurately convey these vocal subtleties to every part of the audience. Optimized acoustic designs, such as carefully positioned sound reflectors, can ensure that sound remains clear and evenly distributed throughout the theater, regardless of seating location [36].

In historic theaters, similar adjustments have been made to address acoustic challenges. For example, the installation of Schroeder diffusers has mitigated issues caused by excessive sound absorption in certain areas. This design correction balanced the acous-

tic profile, allowing high frequencies to be evenly distributed and reducing echo. Such design strategies provide valuable solutions for enhancing the unique acoustics of Kunqu theaters, ensuring an optimal sound experience that supports the vocal demands of Kunqu Opera [37].

2.5.3. Audience and Performer Feedback in Acoustic Design

Incorporating feedback from both audience members and performers is essential to refining the acoustic design of Kunqu theaters. While objective acoustic parameters provide measurable guidance, subjective experiences offer critical insights into factors like sound clarity, spatial balance, and reverberation that are difficult to quantify. Audience surveys capturing experiences across different seating areas can inform acoustic adjustments, ensuring that every part of the theater offers a consistent auditory experience. This feedback mechanism allows for more precise calibrations of theater acoustics to meet Kunqu's specific performance needs, supporting both aesthetic and functional objectives [38].

3. Methodology

This section outlines the methodology employed in this research, focusing on the design and implementation of semi-structured interviews with key stakeholders of Kunqu Opera, as well as the processes for data analysis using grounded theory. This study was approved by the Bartlett School for Environment, Energy and Resources (BSEER) Local Research Ethics Committee at University College London (UK). All participants received information and provided informed consent, in accordance with the Declaration of Helsinki.

3.1. Interviews

In the same line, the current study hosted semi-structured interviews with major stakeholders in Kunqu Opera in order to glean a more rounded understanding of the matter at hand. The semi-structured nature was selected for flexibility and depth, to allow the researcher to go into the experiences and views of participants while still adhering to a structured approach toward data collection. This procedure is particularly helpful for research areas that are nebulous or where participant experience is anticipated to be rather diverse, as it enables new insights to be picked up that may not surface in more stringently formatted methods. In addition, semi-structured interviews have proved to aid in the quick collection of data of high value when the area under investigation is not clearly defined, and that would be the case in this study.

3.1.1. Participants

The interview participants were recruited using a purposive "snowball sampling" technique, which is efficient in a research context where the population of interest is relatively small, or not easily accessible, such as the Kunqu Opera community.

This approach was adopted because it is possible to find knowledgeable and interested persons by means of references from first participants. The process started from the identification of key stakeholders who had a good understanding and rich experience in Kunqu Opera performance or research and dedicated performers, researchers, or fans of Kunqu Opera. These initial stakeholders would further recommend others who could offer more valuable insights into their areas of focus. Snowball sampling helped enlarge the recruitment process so that people of different backgrounds, including professions, regions, and levels of experiences, were involved. Table 1 offers an overview of demographic and professional background information of the participants: it is important to understand just how diversified the study population is in terms of perspective and may provide a context for their opinions on Kunqu Opera. Participants were purposely selected from different backgrounds and with different roles and interests within the Kunqu community to present a very wide spectrum of perspectives regarding the current condition and issues around the preservation of the acoustic heritage of Kunqu.

Table 1. Overview of interview participants.

ID	Sex	Occupation	Province	Age
01	Female	Kunqu Content Creator	Zhejiang	28
02	Male	Kunqu Researcher	Henan	42
03	Female	Kunqu Researcher	Jiangsu	37
04	Male	Kunqu Enthusiast	Liaoning	56
05	Male	Kunqu Enthusiast	Zhejiang	37
06	Female	Kunqu Enthusiast	Shandong	30
07	Female	Kunqu Actor	Jiangsu	38
08	Male	Kunqu Actor	Jiangsu	36
09	Female	Opera Undergraduate	Jiangsu	21
10	Male	Music Graduate	Jiangsu	26

3.1.2. Interview Outline

The interviews were conducted from June to August 2024 through online video conferencing platforms due to the geographical dispersion of participants. The average duration of the interview was approximately 45 min each. Participants were first approached through email, outlining the study and what the interview process would entail. All interviews took place in Chinese, the native language of all the participants. This approach also ensured that they could express their ideas and experiences to the fullest and feel more comfortable. Later, the transcriptions were translated into English for analysis. Throughout the translation process, special care was taken not to lose the meaning and nuances found in the participants' responses; therefore, every effort was made for maintaining data integrity throughout the research process.

Questions were categorized under five general topics to investigate particular aspects of the acoustical legacy of Kunqu Opera. Table 2 outlines the topics, their general objective, and specifics of questions falling under each topic. Each topic was selected deliberately and strategically in light of personal experiences and the general cultural and preservation concerns to ensure richness and relevance in the data collected for the study objectives.

Table 2. Structure of interview topics and questions.

Topic	Purpose	Questions
Personal Background and Introduction to Kunqu	To explore how participants first encountered Kunqu and what initially attracted them to it.	Please introduce yourself and explain how you became acquainted with Kunqu.
		What was your first experience watching Kunqu, and what aspects attracted you?
Cultural Significance and Sound Characteristics	To understand the cultural and personal significance of Kunqu and its unique acoustic elements.	What is the cultural and personal significance of Kunqu to you?
		In your opinion, what are the unique aspects of Kunqu's sound and music?
Impact of Sound Elements on Experience	To examine how the sound and music of Kunqu influence the participants' viewing experience and emotional connection.	How have Kunqu's sound and music influenced your viewing experience?
		Can you share any profound memories or emotions that Kunqu's sound elements have evoked for you?
		Which sound or music elements stand out most in your memory?
Transmission and Evolution of Acoustic Heritage	To explore the role of Kunqu's sound elements in preserving cultural traditions and how these elements are perceived across different age groups.	How important do you think Kunqu's sound elements are in preserving and transmitting cultural traditions?
		In your view, how can the accurate transmission of Kunqu's sound elements be ensured?
		Have you noticed any differences in how people of different ages perceive Kunqu's sound elements?
		How engaged are younger audiences with Kunqu?
		What role do you think non-professional groups play in maintaining the traditional sounds of Kunqu?

Table 2. *Cont.*

Topic	Purpose	Questions
Protection Efforts and Policy Effectiveness	To assess current efforts to protect Kunqu's acoustic heritage and identify potential areas for improvement.	Are you aware of any current efforts to protect the acoustic heritage of Kunqu?
		Which preservation measures do you consider successful, and which areas need improvement?
		What challenges do you see in preserving Kunqu's sound elements, and what solutions do you suggest?

This structured approach to interviewing allowed for a comprehensive exploration of the various factors influencing the preservation and transmission of Kunqu Opera's acoustical heritage. The topics were carefully chosen to cover both personal experiences and broader cultural and preservation issues, ensuring that the data collected were both rich and relevant to the study's objectives.

3.2. Data Analysis

In this study, we chose to use NVIVO 14 software, a professional tool widely used in qualitative research, to assist with data analysis. NVIVO 14 provides robust data management and analytical features that allowed us to systematically process a large volume of interview data through manual coding.

To ensure our analysis adhered to the principles of grounded theory, we followed a three-stage coding process. First, in the open coding stage, we extracted 98 initial concepts from the interview transcripts, which were then grouped into 37 categories based on their thematic relevance and similarity. In the next stage, axial coding, we explored the relationships between these categories and identified patterns and connections. Finally, in the selective coding phase, we integrated 13 core categories and refined them into 5 main themes, aligned with the focus of our research.

In this study, we used Microsoft Teams to conduct the interviews, which has an automatic transcription feature powered by speech recognition technology. The transcription process was carried out automatically during the interviews, converting spoken dialogue into text in real time. However, while Microsoft Teams provided an initial transcript, we manually reviewed and edited the transcriptions to correct any inaccuracies, especially those caused by speech recognition errors such as misheard words or issues with accents.

Regarding the tools used, we relied solely on NVIVO 14 for data analysis, without incorporating external reference dictionaries or other NLP packages. NVIVO's functionalities were sufficient for our analytical needs, and through manual coding and node classification, we were able to uncover underlying patterns and themes in the interview data. This process was grounded in the researchers' in-depth understanding and interpretation of the data, rather than relying on automated text processing or NLP techniques.

3.2.1. Grounded Theory and Its Application

Grounded theory as a qualitative research methodology is distinctive in its approach to the creation of theory from data systematically collected and information analyzed. It is an iterative process through data collection, coding, and analysis to let theory be developed from data without imposing any preconceived hypotheses that a researcher may have on the research [39]. This is particularly useful in the context of analyzing complex social phenomena, like the collective memory of cultural communities, because it facilitates the detection of patterns and themes that are closely linked to the experiences of the participants in the study [40].

3.2.2. Implementation of Grounded Theory

In this study, grounded theory was used to explain how acoustical heritage adds to the collective memory of a cultural community. Interviews, transcribed in text form, of-

fered ten transcripts as a result of data collection. These transcripts were the initial source material for further coding and analysis work.

At the open-coding stage, the researcher analyzed line by line each of the text transcripts to outline and label initial concepts. This step in the process involved deconstruction of the data into discrete pieces and coding of each meaningful unit. When participants discussed the historical development of Kunqu, pieces of their responses were coded as "Origin of Kunshan Tune" or "Development Process of Kunqu". For open coding, we remained as close to the data as possible to ensure that ideas flowed from the participants' stories. At this stage, constant comparison was conducted for further refinement of the codes and to ensure that they were reflective of the nuances captured within the data.

The axial coding stage came next after open coding. This was where the initial codes were organized into more coherent categories. For instance, codes like "Origin of Kunshan Tune" and "Reform by Wei Liangfu" could all be grouped under a more inclusive one, such as "Origin and Development of Kunqu". Axial coding is based on the relationships of the codes: how different concepts link and interact. The data may thus be organized into a frame that is more systematic and meaningful, helping to bring out key patterns and relationships in the dataset.

During the process of selective coding, the researcher condensed categories drawn from axial coding into core themes that captured the research question. For instance, the theme "Origin and Development of Kunqu" was subsumed under the larger thematic area of "Perception of Kunqu". Therefore, the second phase was a refinement of the analysis to determine the most influential themes that emerged from the data and helped to bring about a unified theoretical rationale of the findings of the research. The NVIVO (QSR International, version 14 plus) was used in each of these stages as an instrumental means of coding. The grounded theory approach retained emphasis, and NVIVO's main role was in the organization and management of the voluminous data, but it did not itself drive the analysis.

3.3. Formation of Coding and Thematic Analysis

In the final selective coding stage, the results were distilled into core themes that directly addressed the research question. For instance, the comprehensive category "Origin and Development of Kunqu" was further developed into the theme "Perception of Kunqu". This theme encapsulated various aspects of how participants understood and valued the historical and cultural significance of Kunqu. Selective coding helped to refine the analysis, ensuring that the core themes were robust and well supported by the data. Table 3 gives an example of the progression from raw data to final themes.

Table 3. Example of progression from raw data to a final theme.

Original Material	Open Coding	Axial Coding	Selective Coding	Theme
From Kunshan Tune to Kunqu	Origin of Kunshan Tune	Origin of Kunqu		
Wei Liangfu reformed Kunshan Tune	Reform by Wei Liangfu			
Modern revival of Kunqu	Modern Revival		The Origin and Development of Kunqu	
Tune-based structure	Tune-based Structure	Musical Characteristics		
Appreciation of text, rhythm, subtlety, movement	Text, Rhythm, Subtlety, Movement	The Beauty of Kunqu		
Lower pitch and more subtle style than Peking Opera	Style Differences	Differences in Kunqu		Perception of Kunqu
Visual appeal of costume and appearance	Costume, Appearance	Visual Impact	Appeal	
Fun and challenges in Kunqu	Fun and Challenges	Personal Significance		
Lack of theoretical talent and systematic training	Lack of Theoretical Talent, Lack of Systematic Training	Current State of Education	Kunqu Education and Heritage	
Pessimism about Kunqu's future	Pessimism	Suggestions	Future of Kunqu	

4. Results

Through the process of analyzing the data as described above, five major themes were identified, related to the perception of Kunqu, its symbolic significance, the methods of transmission, the emotional impact of Kunqu, and the challenges and opportunities presented by modern technology. Each of these themes encompasses several sub-themes, providing a comprehensive view of Kunqu's multifaceted role in contemporary culture. In this section, the findings related to each theme are examined in detail, while the discussion section further explores the interconnections between these themes and their broader implications. To provide a clearer understanding of the key concepts discussed by interviewees regarding Kunqu's role in collective memory and cultural identity, Table 4 summarizes the main emphases identified from the interviews.

Table 4. Key concepts from interviews on Kunqu's role.

Emphasis	Similar Keywords in Definitions
Interaction between personal and collective memory	'Personal experience', 'shared cultural background', 'cultural resonance', 'hometown memories'
Symbolic significance in collective memory	'Cultural symbol', 'Chinese traditional aesthetics', 'symbolic value', 'traditional culture'
Emotional connection	'Emotional impact', 'emotional resonance', 'shared emotions', 'cultural identity', 'sense of belonging'
Modern challenges and opportunities	'Globalization', 'modern dissemination', 'challenges in modern society', 'cultural preservation'

4.1. Theme 1: The Perception of Kunqu

Kunqu, recognized as an intangible cultural heritage of China, has garnered widespread acknowledgment. However, opinions diverge on how Kunqu contributes to the construction of collective memory. This section explores the perception of Kunqu in two parts: (a) the interaction between personal memory and collective memory in the context of Kunqu, and (b) the symbolic significance of Kunqu as a cultural symbol in collective memory.

4.1.1. The Interaction Between Personal and Collective Memory

Many interviewees believe that Kunqu closely intertwines personal and collective memory. For some individuals, specific Kunqu arias evoke personal experiences that gradually merge into broader collective memories. This type of personal memory, mediated by Kunqu, becomes an integral part of the collective cultural memory.

"The melody of that Kunqu aria always reminds me of my days in my hometown. Those memories are not just mine; they are shared by many". [Interviewee 4]

Conversely, some interviewees argue that while Kunqu holds significance in personal memory, its role in constructing collective memory is less pronounced. This perspective suggests that Kunqu's impact on collective memory may be more contingent on individual cultural backgrounds and emotional experiences.

"For me, Kunqu is more of a personal artistic enjoyment rather than a part of collective memory". [Interviewee 5]

"Although Kunqu holds cultural importance, its influence on collective memory might not be as direct as its influence on personal memory". [Interviewee 7]

When discussing how Kunqu bridges personal and collective memory, some interviewees emphasized that this connection largely depends on how individuals engage with Kunqu and their cultural environment. This analysis underscores the critical role of cultural background and social environment in shaping Kunqu's influence.

"The influence of Kunqu on collective memory greatly depends on its expression within a specific cultural context". [Interviewee 7]

"How Kunqu influences collective memory depends largely on how individuals engage with Kunqu and the cultural environment they are in". [Interviewee 3]

In summary, the relationship between Kunqu and personal versus collective memory is influenced by multiple factors, including individual engagement with Kunqu, cultural background, and the depth of personal experience. While most interviewees believe that Kunqu can enhance collective memory, the extent of this influence varies. Nevertheless, through its unique artistic form and cultural content, Kunqu effectively facilitates the transformation of personal memory into collective memory in certain contexts.

4.1.2. The Symbolic Significance of Kunqu in Collective Memory

Interviewees offered differing views on the symbolic significance of Kunqu as a cultural symbol in collective memory. Some see Kunqu not only as an art form but also as a symbol of traditional Chinese culture, carrying profound historical and cultural value. Such views emphasize the importance of Kunqu in collective memory.

"Kunqu is more than just an opera; it represents the essence of Chinese traditional aesthetics". [Interviewee 3]

On the other hand, some interviewees question whether Kunqu's symbolic role in modern society remains as strong. This viewpoint reflects the challenges and changes traditional cultural symbols face in the context of globalization.

"In modern society, the symbolic significance of Kunqu in collective memory may not be as strong as it was in the past". [Interviewee 5]

"The role of Kunqu as a cultural symbol may need to be re-evaluated in the context of modern society". [Interviewee 8]

Additionally, the way Kunqu is perceived in different cultural contexts affects its symbolic significance. This analysis reveals the impact of cultural diversity on the symbolic meaning of Kunqu.

"Kunqu's symbolic significance in collective memory varies depending on how it is expressed in different regions and cultures". [Interviewee 7]

The symbolic significance of Kunqu in collective memory is multidimensional, encompassing both deep historical cultural value and the challenges of modern society. The symbolic meaning and influence of Kunqu need to be reinterpreted and evaluated in light of contemporary contexts.

4.2. Theme 2: Kunqu as a Symbolic Cultural Icon

Kunqu, as a traditional art form with rich historical and cultural heritage, has transcended mere theatrical performance to become a symbol of Chinese traditional culture. In different cultural contexts, Kunqu has exhibited a rich literary quality and unique cultural connotations, continuously evolving in the globalized world. This section discusses Kunqu from two perspectives: its literary quality and cultural connotations, and its expressions in different cultural contexts.

4.2.1. The Literary Quality and Cultural Connotations of Kunqu

The literary quality of Kunqu is a crucial part of its artistic appeal, manifesting not only in the textual content of its scripts but also in the rhythm of its melodies and the structure of its tunes. The dramatic texts of Kunqu not only have the poetic beauty of rhythm but also achieve a deep fusion of music and literature, providing the audience with a multi-layered aesthetic experience.

"Kunqu's texts possess a high degree of literary quality, which is fully reflected in the transmission of Ming Dynasty legends and Southern Drama". [Interviewee 9]

The literary quality of Kunqu is also evident in its rigorous vocal structure and expressiveness. Through this rigorous artistic form, Kunqu conveys not only emotions and stories but also the aesthetic concepts and ethical values of traditional Chinese culture.

"The relationship between Kunqu's vocal style and lyrics is extremely close. This performance style not only showcases Kunqu's unique artistic expression but also highlights its deep cultural connotations". [Interviewee 7]

Furthermore, the cultural connotations of Kunqu are deeply rooted in its emotional expression and traditional thoughts conveyed through dramatic performance. These cultural connotations not only influence the audience visually and aurally but also convey the philosophical ideas of "negative space" and "implicit beauty" inherent in traditional Chinese culture.

"Kunqu's use of color and negative space is closely related to traditional Chinese aesthetics". [Interviewee 2]

4.2.2. Kunqu's Expressions in Different Cultural Contexts

As a symbol of traditional Chinese culture, Kunqu exhibits diverse forms of expression and cultural significance in different cultural contexts. The performance styles and pronunciation methods of Kunqu in different regions reflect its diversity and adaptability across China. This regional variation not only influences the form of Kunqu performances but also shapes the audience's understanding and experience of Kunqu.

"Kunqu's performance style varies in different regions, mainly in terms of articulation and singing style". [Interviewee 10]

In the context of globalization, the dissemination and reception of Kunqu have also shown new characteristics. This indicates that Kunqu faces challenges in international dissemination not only due to language and performance differences but also in effectively conveying its underlying cultural connotations.

"Kunqu, as a literati-oriented art form, is often influenced by local cultural backgrounds and audience aesthetic habits in its dissemination and reception in Western countries". [Interviewee 9]

Moreover, Kunqu's contemporary forms of expression continue to evolve to meet the needs and aesthetic preferences of different audiences. This evolution not only helps Kunqu spread globally but also provides new momentum for its ongoing development in modern society.

"Kunqu's expressions often adjust in different cultural contexts to suit local audience preferences and cultural environments". [Interviewee 7]

As a symbolic cultural icon, Kunqu's literary quality and cultural connotations imbue it with unique artistic appeal, while its diverse expressions in different cultural contexts revitalize it in a globalized world. This multidimensional exploration reveals the deep value of Kunqu in Chinese culture and provides important theoretical foundations for its dissemination and reception worldwide.

To further elucidate the symbolic roles that Kunqu plays as discussed by the interviewees, Table 5 categorizes various subjects related to Kunqu's cultural significance, literary quality, and challenges in modern contexts.

Table 5. Subjects discussed in Kunqu's role as a symbolic cultural icon.

Examples	Memory Interaction	Cultural Symbolism	Emotional Impact	Modern Challenges
Hometown Memories	✓		✓	
Personal Experiences	✓		✓	
Collective Cultural Memory	✓	✓	✓	
Symbolic Significance in Modern Society	✓	✓		✓
Globalization		✓		✓

4.3. Theme 3: The Impact on Transmission and Identity

4.3.1. The Evolution of Kunqu's Transmission Methods

As an intangible cultural heritage of China, Kunqu has undergone significant changes in its transmission methods, shifting from traditional oral transmission to modern dissemination techniques. Traditional teaching methods struggle to meet the demands of modern educational systems in today's information age.

"Kunqu's traditional transmission mainly relied on oral teaching, which effectively preserved the purity and artistic essence of Kunqu in history". [Interviewee 1]

However, with societal development, the transmission methods of Kunqu have gradually been influenced by modern dissemination techniques. This new method of transmission not only broadens the audience base of Kunqu but also provides new opportunities for its revival in modern society.

"With the rise of the internet and social media, some amateur groups have shared Kunqu performances and instructional videos on platforms like Bilibili, making the learning of Kunqu more widespread and accessible". [Interviewee 2]

However, this change has also raised concerns about the quality of transmission and artistic standards.

"While modern dissemination techniques have increased Kunqu's exposure, ensuring the preservation of its traditional essence during dissemination is a pressing issue". [Interviewee 5]

Additionally, Interviewee 3 emphasized the increasing recognition of Kunqu internationally, especially on the global music stage, where it has been widely recognized as a national symbol. The proliferation of internet platforms has greatly facilitated the international dissemination of Kunqu, allowing it to reach a broader global audience.

"Kunqu's recognition internationally is also increasing, especially on the global music stage, where it has been widely recognized as a national symbol". [Interviewee 3]

However, the clash between tradition and modernity has also brought challenges. In the future, Kunqu's transmission methods will need to continue innovating, but this innovation must be grounded in respect and protection of tradition to ensure that Kunqu's core values remain intact.

"Although modern dissemination techniques have brought new audiences and opportunities for Kunqu, balancing the traditional essence of Kunqu with the demands of modern audiences remains a core issue in its transmission". [Interviewee 6]

In summary, the transmission methods of Kunqu in modern society have transitioned from traditional to modern approaches. This change brings new opportunities for Kunqu's dissemination but also introduces new challenges. Maintaining Kunqu's core values while effectively using modern technology for transmission and promotion will be crucial for the future protection and development of Kunqu culture.

Table 6 provides a categorized overview of the traditional and modern transmission methods discussed by the interviewees, as well as the challenges and opportunities presented by these methods in the context of Kunqu's dissemination.

Table 6. Categories of Kunqu in modern transmission and reception.

Examples	Traditional Transmission	Modern Techniques	International Dissemination	Challenges	Opportunities
Oral teaching	✓			✓	
Social media platforms		✓	✓		✓
International recognition		✓	✓	✓	
Adaptation to modern audiences		✓	✓	✓	✓

4.3.2. The Acceptance of Kunqu Among Younger Audiences

The acceptance of Kunqu among younger audiences shows a diverse trend. On one hand, Kunqu, as a traditional art form, faces challenges in attracting young viewers; on the other hand, the development of modern dissemination techniques has also paved new paths for Kunqu among the younger generation.

"Kunqu's acceptance among young people is relatively low because its classical art form and slower pace don't easily resonate with them". [Interviewee 1]

However, Kunqu's unique costumes and music still hold appeal, especially when these elements are combined with modern popular culture, which can capture the attention of younger audiences.

"Kunqu's unique costumes and music still hold appeal, especially when combined with modern popular culture, which can capture the attention of younger audiences". [Interviewee 2]

Further analysis reveals that the literary and artistic aspects of Kunqu continue to attract young people with a deep interest in culture. These young individuals may encounter Kunqu through university societies or campus performances, gradually developing an interest in it.

"Kunqu's literary and artistic aspects continue to attract young people with a deep interest in culture". [Interviewee 3]

Interviewee 4 also emphasized the potential for Kunqu's dissemination among young people, particularly when combined with elements of modern popular culture.

"The potential for Kunqu's dissemination among young people should not be underestimated, especially when modern popular culture elements are integrated". [Interviewee 4]

However, promoting Kunqu among younger audiences still faces challenges. The preservation and transmission of Kunqu in modern society encounters many difficulties, particularly in how to make more young people understand and accept Kunqu.

"The preservation and transmission of Kunqu in modern society encounter many challenges, particularly in how to make more young people understand and accept Kunqu". [Interviewee 5]

Interviewee 6 further added that Kunqu's transmission needs more innovation, especially in promotion and education, to attract more young people to participate.

"Kunqu's transmission needs more innovation, especially in promotion and education, to attract more young people to participate". [Interviewee 6]

The acceptance of Kunqu among younger audiences is influenced by various factors. Modern dissemination techniques offer new possibilities for promoting Kunqu, but they also present new challenges. To maintain Kunqu's vitality in modern society, it is essential to preserve its traditional artistic essence while actively innovating and exploring more effective ways to attract and retain young audiences' interest. Only through this approach can Kunqu continue to play a vital role in contemporary cultural heritage transmission.

4.4. Theme 4: Emotional Resonance of Kunqu

Kunqu, as a traditional form of opera, not only has a unique charm in expressing personal emotions but also, through the transmission and resonance of emotions at the collective level, strengthens the construction of social and cultural memory. This section explores the role of Kunqu in emotional transmission and resonance from two perspectives: (1) the transmission of emotions in Kunqu performances, and (2) Kunqu as a medium for emotional resonance.

4.4.1. The Transmission of Emotions in Kunqu Performances

Kunqu's artistic expression excels in emotional transmission, creating a subtle yet powerful emotional impact through the perfect combination of music, vocalization, and movement. Many interviewees highlighted the unique emotional transmission in Kunqu performances.

"The melody of Kunqu is very melodious and lingering, and coupled with the actors' performances, it often creates an ambiguous atmosphere that easily immerses people in it". [Interviewee 2]

This emotional transmission through Kunqu's music and movements allows the audience to resonate with the onstage scenarios. In terms of vocal emotional expression, Kunqu is renowned for its unique "shui mo(ink-wash)" vocal style.

"Kunqu's 'shui mo(ink-wash)' vocal style is particularly distinctive. Its sound seems to continue endlessly, very lingering and entwining. This vocal design gives Kunqu strong emotional expressiveness". [Interviewee 9]

Other interviewees agreed, emphasizing that Kunqu's vocal style is not only musically distinctive but also has a profound impact on emotional expression, evoking strong emotional resonance in the audience. Furthermore, the design of movements in Kunqu plays a crucial role in emotional transmission.

"Kunqu's performance style is subtle, with actors using delicate movements to express characters' emotions, such as walking with a slight hunch or conveying shyness through their gaze. This performance style unconsciously draws the audience into the emotional atmosphere". [Interviewee 8]

These delicate movements enhance the audience's emotional experience, allowing them to perceive not only the external aspects of the drama but also the emotional world of the characters.

4.4.2. Kunqu as a Medium for Emotional Resonance

Kunqu not only touches individuals with its delicate emotional expression but also serves as a medium for emotional resonance, creating emotional connections between different audiences and strengthening collective memory.

"Every time I hear Kunqu, I think of my life in Nanjing. Kunqu has become a vessel for my emotions". [Interviewee 10]

This viewpoint reveals the importance of Kunqu in personal emotional memory. Through Kunqu, individuals' life experiences and emotional connections are magnified and integrated into collective memory.

In the construction of collective emotional resonance, Kunqu plays a particularly significant role as a cultural symbol.

"Kunqu is not just an opera; it represents traditional Chinese aesthetics. When audiences appreciate Kunqu, they often feel a sense of cultural resonance that transcends individual experience". [Interviewee 3]

This resonance spreads not only among individuals but also across the broader social and cultural landscape, becoming an effective tool for reinforcing collective memory.

"Kunqu's role as a cultural symbol lies not only in its artistic form but also in the cultural and historical context it embodies. This gives Kunqu a strong resonance effect in various cultural environments". [Interviewee 7]

This emotional resonance, facilitated by Kunqu performances, not only evokes a response in the present but also extends this resonance to a broader social context, contributing to the ongoing construction of collective memory.

"Kunqu played a significant role in my cultural life during my four years at university. It not only enriched my personal experience but also helped me feel the power of collective emotion through interactions with others". [Interviewee 1]

Through Kunqu's emotional expression, audiences find a sense of cultural identity in resonance, further strengthening their belonging as members of a collective. Through its unique artistic form, Kunqu transmits emotions on an individual level and serves as a medium for emotional resonance, building emotional connections among different audiences and reinforcing collective memory. This role of Kunqu gives it strong vitality and influence in modern society.

4.5. Theme 5: Challenges and Opportunities

4.5.1. The Challenges and Methods of Kunqu Transmission

In modern society, the transmission of Kunqu faces multiple challenges. Firstly, as a traditional art form, Kunqu's learning process is complex and time-consuming, which limits its appeal, especially among the younger generation in today's fast-paced society.

"Kunqu's transmission mainly relies on oral teaching, and this method inevitably leads to information loss". [Interviewee 8]

Traditional teaching methods struggle to meet the demands of modern educational systems in today's information age. Additionally, the complexity and high artistic demands of Kunqu make it difficult to popularize, as potential learners may be intimidated and discouraged, hindering its spread among a broader audience.

"Kunqu's vocal and musical scores are very rigorous, and even slight deviations can affect the overall effect". [Interviewee 7]

However, to overcome these difficulties, interviewees suggested some effective solutions. Modern technology can play a crucial role in the transmission of Kunqu.

"A non-professional group uploaded some teaching videos of Kunqu on Bilibili, which has helped many Kunqu enthusiasts learn and understand Kunqu more accurately". [Interviewee 2]

This method not only expands Kunqu's dissemination channels but also provides learners with more convenient and diverse learning resources, compensating for the limitations of traditional oral teaching.

Additionally, sound recording is emphasized as crucial in preserving Kunqu's essence.

"The use of sound recording is very important, for example, preserving the singing styles of Kunqu masters through recordings and videos". [Interviewee 9]

Through modern recording technology, Kunqu's essence can be preserved with greater accuracy and comprehensiveness, providing valuable reference materials for teaching and a solid foundation for future research and recreation. Of course, Kunqu's transmission methods in modern society face challenges, including high learning difficulty, limitations of traditional teaching methods, and adaptation to a fast-paced lifestyle. However, by leveraging modern technological tools such as online teaching, recording, and video, the transmission of Kunqu can overcome these difficulties to some extent, opening new possibilities for the continuation of this ancient art form.

4.5.2. Leveraging Modern Technology to Promote Kunqu

Modern technology has shown tremendous potential in promoting and disseminating Kunqu.

> *"Through recordings and videos, Kunqu performances can be fully preserved and widely disseminated via online platforms, allowing more people to access Kunqu".* [Interviewee 10]

Modern technology has broken the limitations of time and space in Kunqu's dissemination, enabling it to reach a global audience. This not only expands Kunqu's audience base but also attracts more international viewers, playing a significant role in Kunqu's global dissemination.

The emergence of social media and video-sharing platforms has particularly transformed the way Kunqu is disseminated.

> *"Many amateur Kunqu enthusiasts spontaneously upload and share Kunqu performances on these platforms, attracting a large number of young viewers and fostering their interest in Kunqu".* [Interviewee 4]

This grassroots dissemination approach takes full advantage of the internet, allowing Kunqu to permeate the lives of young people and spark their interest in this traditional art form.

Furthermore, modern technology offers new possibilities for Kunqu innovation.

> *"Kunqu could engage in cross-disciplinary collaborations with other art forms, such as incorporating popular music or film to attract more young viewers".* [Interviewee 5]

Such cross-disciplinary collaborations not only enrich Kunqu's expression but also enhance its influence in modern culture, allowing more young people to appreciate and enjoy Kunqu in a familiar cultural context.

However, interviewees also cautioned that the application of modern technology must be handled carefully to avoid diluting Kunqu's traditional essence.

> *"While innovating, it's crucial to handle Kunqu's traditional elements with care to ensure its core values remain intact".* [Interviewee 9]

This suggests that while modern technology provides unprecedented opportunities for Kunqu's dissemination, its use must be balanced with a deep respect for and preservation of traditional artistic forms. Modern technology provides ample space for the promotion and dissemination of Kunqu, but its application should be approached with the aim of preserving Kunqu's traditional essence while embracing innovation. This balance will not only help Kunqu maintain its vitality in modern society but also allow it to flourish in new cultural environments.

4.6. Frequency Analysis of Key Sub-Themes

In this analysis, we considered that codes may not be univocally associated to a given theme but could rather apply across themes; hence we are looking at slightly different clusters of codes. The frequency analysis provides insight into the prominence of specific codes in three cross-theme areas (namely: Perception, Education and Inheritance, and Future Prospects) discussed by the interviewees. By examining these frequencies, we can better understand which aspects of Kunqu Opera participants focused on the most, shedding light on the diversity of perspectives within each main theme. The coding frequencies for each cross-theme area are summarized in Figure 1.
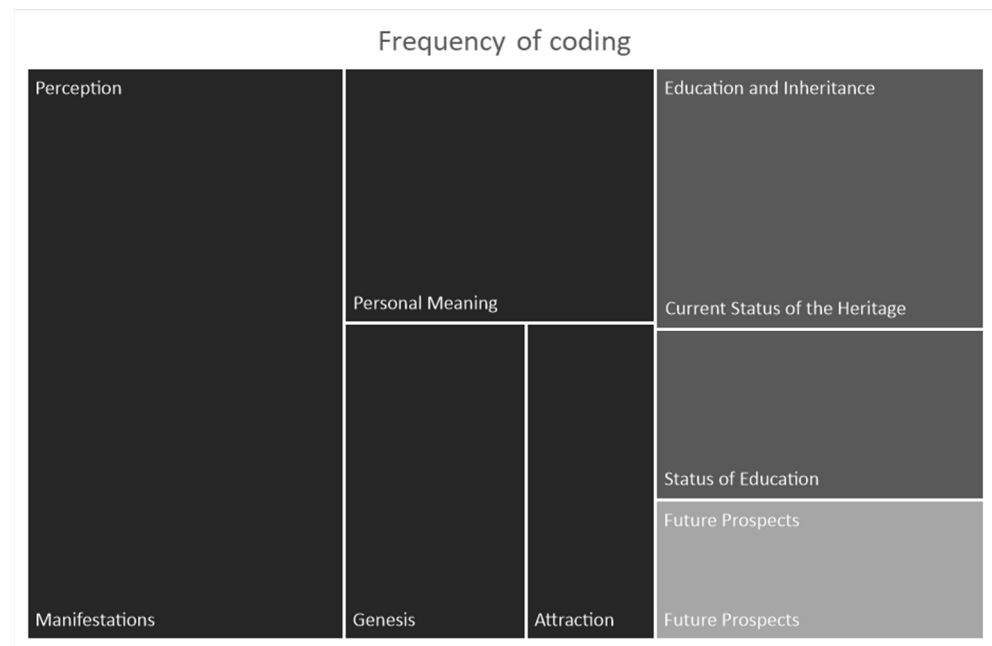
Figure 1. A treemap representing the frequency of coding for cross-theme areas in the analysis about Kunqu Opera.

- *Perception* (mostly covering Theme 1): Among the codes under the Perception cross-theme area, manifestations emerged as the most frequently mentioned code, appearing 142 times in total. This suggests that participants were particularly focused on the various tangible and intangible forms through which Kunqu Opera is experienced. This includes its performances, rituals, and broader cultural representations. Other codes, such as personal meaning (62 mentions), genesis (45 mentions), and attraction (32 mentions), also contributed to the discussion but with less frequency. The variation in the number of mentions across themes of these codes indicates differing levels of emphasis participants placed on Kunqu's personal significance, historical origins, and appeal.
- *Education and Inheritance* (mostly covering Theme 3): In the Education and Inheritance cross-theme area, the code status of education was the most frequently discussed, with 111 mentioned. This reflects a strong focus on the current educational frameworks and methods used in the transmission of Kunqu Opera, signaling its perceived importance in preserving the art form. The status of the heritage and related sub-themes, such as the challenges and opportunities surrounding its preservation, were discussed 67 and 44 times, respectively. These frequencies highlight the concern about the state of Kunqu's cultural heritage and the need for adaptive approaches in its transmission.
- *Future Prospects* (mostly covering Theme 5): The cross-theme area of future prospects, alongside general discussions about the future direction of Kunqu, were cited 36 times. This suggests that while the future of Kunqu opera is an important area of consideration, it did not dominate the discussions. The relatively balanced attention given to prospects implies that, while there is recognition of the need for progress and evolution, participants may still prioritize the preservation of its current state.

This quantitative overview not only illustrates the relative prominence of each cross-theme area, but also aids in understanding the varied concerns and aspirations of the interviewees regarding Kunqu Opera. The frequency of mentions highlights the aspects of Kunqu that participants considered most significant, offering valuable insights into how the art form is perceived, taught, inherited, and envisioned for the future.

5. Discussion

5.1. Summary of Key Findings

This paper is an attempt to understand the multidimensional value of the acoustical heritage of Kunqu, with particular emphasis on the core position it holds in both cultural identity and collective memory. The results indicated that the acoustic features of Kunqu not only represent profound cultural values but also strengthen emotional communication at both the levels of the individual and collective through their unique acoustic expressions. These findings thus address effectively the first two specific research objectives set out at the beginning, namely, to understand what role Kunqu's acoustical heritage plays in contemporary society and to explore what challenges its transmission poses in a globalization context. These points have been acknowledged also in the broader literature about acoustical heritage [41,42].

5.2. Comparison with Existing Literature

In comparison with the existing literature, this study has singled out quite a few significant contributions along several lines. While previous research [24], also posited the importance of Kunqu as multidimensional cultural heritage, the foci of their studies still predominantly fall within the material aspect of the culture. While the current study goes farther, focusing on acoustical heritage, its potential role in cultural identity, and collective memory, it tries to fill a gap within the current studies with regard to the investigation of acoustic elements.

From a literary critique viewpoint, discussions seek to proffer that many such studies have used only performative or visual elements as avenues of cultural transmission in Kunqu despite the existence of acoustic elements (see for example, [4,6,7]). Investigations into the cultural transmission of Kunqu are frequently too narrow and short of embracing the holistic essence of Kunqu as an integrated art form. This research has tried to highlight the importance of the acoustical heritage, the music and sound of Kunqu, for the actualization of cultural values and the sustainability of cultural identities, hence contributing to the general understanding of its artistic value.

5.3. Interpretation of Results

The present study demonstrates that acoustical heritage plays an important role in the construction and maintenance of cultural identity and collective memory in Kunqu. Drawing on Anderson's theory of "imagined communities", this outcome can be interpreted as follows: The sound and music of Kunqu evoke emotional responses that help build cultural identity across both time and space. This effect is particularly prominent in the Jiangnan region, where Kunqu not only serves as a cultural symbol but also strengthens the bond between individuals and the collective through its unique acoustic expressions. Figure 2 summarizes the structure of the thematic analysis implemented in this study to support these claims.

Interviewees provided detailed insights into how Kunqu contributes to the interaction between personal and collective memory. Many interviewees highlighted the significant role of personal experiences in shaping shared cultural memories, with Kunqu's sound and melodies acting as mediums for personal and collective identification. The frequent use of terms like "personal experience" and "cultural resonance" reinforces the idea that Kunqu plays a vital role in connecting individual memories to a broader cultural context.

Interviewees referred to Kunqu as a "cultural symbol" that encapsulates traditional Chinese aesthetics and values. This underscores Kunqu's important role as a bearer of cultural symbolism, which continues to hold value in both historical and modern contexts. However, there are concerns about the weakening of this symbolic role in modern society due to globalization and shifting cultural paradigms.

The emotional impact of Kunqu demonstrates how the opera elicits strong emotional responses from its audience, contributing to a collective sense of belonging. The recurring mentions of "emotional resonance" and "shared emotions" suggest that Kunqu is not only

a source of personal enjoyment but also a vehicle for expressing and reinforcing collective cultural identity.
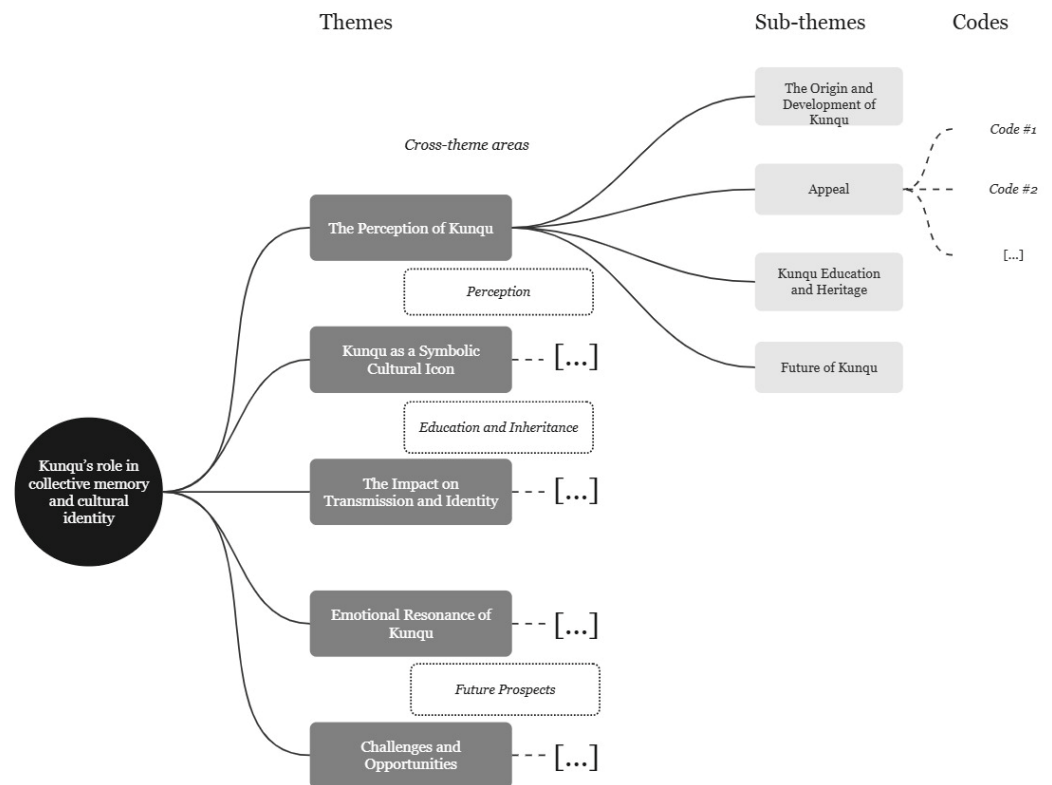

Figure 2. Diagram summarizing the thematic analysis about Kunqu's role in collective memory and cultural identity; example of relationships between codes, sub-themes, themes and cross-theme areas.

There are modern challenges and opportunities faced by Kunqu, especially in the context of technological advancements and globalization. Interviewees discussed how modern communication platforms offer new ways to transmit and promote Kunqu, but these developments also pose challenges in preserving its traditional essence. The balance between maintaining Kunqu's cultural integrity and embracing modern transmission methods remains a key concern for its future development.

5.4. Limitations of the Study

These limitations are mainly reflected in the following aspects: snowball sampling is an effective method to ensure that respondents are deeply involved in Kunqu, but it may introduce certain selection biases. The possible bias from this could make it difficult to provide findings that would represent the views of the broader community involved in Kunqu, especially across different regions and cultural backgrounds. Also, the cultural and linguistic peculiarities of the translation processes might have an effect on the accuracy of the data in this research. For instance, certain words or phrases that express delicate emotions or some kind of cultural traits can get diluted or wrongly interpreted during translation, which would consequently result in incorrect judgment of the results.

These limitations could be addressed in future research by the use of more diverse methods of sampling and also stricter bilingual analytical strategies to ensure the integrity and accuracy of the data collected.

5.5. Implications for Future Research

The findings suggest a set of specific directions in which further research can be developed based on the outcome of this study. First, quantitative approaches can help to

further develop the research methods to assess in reality the actual impact of modern communication methods on the engagement of young audiences with Kunqu, in particular for long-term effects within social media and digital platforms. The next step might entail cross-cultural comparative research on acoustic heritage preservation strategies in different cultural contexts and their implications for the construction of cultural identity and memory globally. Lastly, future research might explore interdisciplinary collaboration between Kunqu and the modern art form; interdisciplinary cooperation can be performed to explore how to innovate with modern technology without losing traditional characteristics of Kunqu to appeal to more people of younger ages and develop and continue Kunqu culture.

6. Conclusions

This study has explored the significance of Kunqu's acoustical heritage, highlighting its central role in the construction of cultural identity, emotional resonance, and the formation of collective memory. Through a detailed comparison with the existing literature, this study not only confirms the multidimensional value of Kunqu as a cultural heritage but also reveals the unique contributions of its acoustic elements within the modern societal context. The research demonstrates that Kunqu's acoustical heritage is indispensable in transmitting and preserving Chinese traditional culture, especially when faced with the challenges of globalization and digitalization. While Kunqu's dissemination in contemporary society is fraught with challenges, these challenges also present new opportunities for innovation and transmission. By balancing the preservation of tradition with the application of modern technology, Kunqu can continue to play a significant role in contemporary culture.

In the future, further research could be conducted into cross-cultural strategies concerning the dissemination and preservation of Kunqu's acoustical heritage, with a heightened emphasis on the engagement of younger audiences in the digital age. Such studies may provide theoretical support for continued development in regard to Kunqu and could serve as a useful guide for preservation and dissemination in regard to other cultural heritages of the world. This study ultimately suggests a different way of thinking of Kunqu's cultural heritage value, its function of cultural transmission, and puts forward clear directions for further research and practice. In further researching Kunqu's acoustic elements and expanding their application in modern society, Kunqu will continually play its unique role as a core representative of Chinese cultural heritage on a global scale.

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