Peculiarities of Singing in Chinese Popular and Traditional Music: Influence of Musical Genres on Vocals

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Abstract: Under the conditions of multiculturalism, Chinese vocal art has formed its own unique theoretical system based on the characteristics of vocalization, articulation, diction, and breathing. The aims of the study are to identify singing features in Chinese popular and traditional music, as well as to determine the ways in which musical genres influence vocals. Two teachers of modern vocal, two teachers of traditional vocal, 30 students of the Vocal Arts Department of Beijing University, art historians from the Central Conservatory of Music and Lishui University took part in the study. According to the study purpose, it was found that in traditional Chinese vocal arts, the main technique is falsetto (58%), mixed techniques (21.2%), vibrato (13.2%), overtone singing (6.1%), and glissando (1.5%) are also used. In popular singing the key technique is splitting (33.6%), also used: subtone (20.2%), vibrato (17.7%), drive (12.1%), glissando (11.1%), vocal fry register (9.2%), falsetto (3.3%), overtone singing (2%). As a result of the correlation analysis the dependence of popular singing techniques on traditional singing was determined. The coefficient of determination was 33.5%. It was also determined that when performing pop music, vibrato is controlled; noises and growling tones are used in rock music; uncontrolled vibrato, falsetto, and mixed techniques are used in opera; nasal sounds and minimal vibrato are in folk/country music; clear diction, articulation, slides, and scatting in blues/jazz; rhythmic and nasal sounds in hip-hop. The experiment results can be used in pedagogy for teaching vocals in China and abroad, as part of cultural activities related to the organization of events such as festivals, concerts, tourist programs, theatrical performances, etc.

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Resumo: Sob as condições do multiculturalismo, a arte vocal chinesa formou seu próprio sistema teórico único baseado nas características de vocalização, articulação, dicção e respiração. Os objetivos do estudo são identificar as características do canto na música popular e tradicional chinesa, bem como determinar as maneiras pelas quais os gêneros musicais influenciam os vocais. Dois professores de canto moderno, dois professores de canto tradicional, 30 alunos do Departamento de Artes Vocais da Universidade de Pequim e dois historiadores da arte do Conservatório Central de Música participaram do estudo. De acordo com o objetivo do estudo, verificou-se que nas artes vocais tradicionais chinesas, a principal técnica é falsete (58%), técnicas mistas (21,2%), vibrato (13,2%), canto harmônico (6,1%) e glissando (1,5%) também são usados. No canto popular a técnica de tonalidade é o splitting (33,6%), também utilizado: subtom (20,2%), vibrato (17,7%), drive (12,1%), glissando (11,1%), registro vocal fry (9,2%), falsete (3,3%), canto harmônico (2%). Como resultado da análise de correlação foi determinada a dependência das técnicas de canto popular em relação ao canto tradicional. O coeficiente de determinação foi de 33,5%. Também foi determinado que ao tocar música pop, o vibrato é controlado; ruídos e rosnados são usados na música rock; vibrato descontrolado, falsete e técnicas mistas são usadas na ópera; sons nasais e vibrato mínimo estão na música folk/country; dicção clara, articulação, slides e scatting em blues/jazz; sons rítmicos e nasais no hip-hop. Os resultados do experimento podem ser usados em pedagogia para o ensino de canto na China e no exterior, como parte de atividades culturais relacionadas à organização de eventos como festivais, concertos, programas turísticos, apresentações teatrais, etc.

Palavras-chave: Bel canto. Arte vocal chinesa. Multiculturalismo. Música. Canto vocal tradicional. Vocal.

Introduction

Chinese vocalization is a special method of singing in Chinese with specific features of breath formation (YANG, 2020). The driving force behind vocalization is the smoothness of the breath, which allows for the characteristic coherence and fluidity of the voice, clarity of articulation, and the ability to control the volume level (GUO, 2015). In today's social background of multicultural development, traditional Chinese singing has developed its own unique theoretical system based on the characteristics of vocalization, articulation, rhyme, Dan Tian breathing, and a comprehensive understanding of timbre and sound quality (YANG and DING, 2021).

During the performance of Chinese national vocal chant, the artist's voice should be smooth and even, not overloading the throat (LI, 2016). Only by controlling breathing well can one fully engage the vocalization techniques and better express the proper emotional characteristics of the piece (GUAN, 2021). The characteristics that are central to Chinese vocal technique are flexibility and emotionality (YANG, 2020). Vocal performance combines a variety of vocal data, and to perfectly integrate them into the performance, the singer needs to be extremely flexible in the use of the voice, its timbre, and volume (BAI, 2019). The vocal skills of the performer are more related to the control of the pitch of musical works during performance, since different types of musical works have different pitch and speed of tonal change (XIAONA, 2022). The key to affecting the emotional expressiveness of a work is the artist's interpretation of the vocal performance using articulation, physical resonance, and breathing sounds (WANG et al., 2021). In China, vocal and musical works convey connotation and artistic concept to the audience through the performers' vocals (DANDAN, 2018). The content is primary, and the singing skills serve the content of the piece (TAN and CONTI, 2019). The relationship between syllables in folk vocals is most often rounded and curved, and this form cannot be fixed by the score, meaning that performers rely heavily not on musical notation, but on their

own understanding of the repertoire's connotations and their understanding of the national styles of the musical work (YUAN, 2019).

In the early stage of modern vocal development, the requirements for singing skills and vocal range were relatively low, as was the complexity of singing works, and the advanced scientific method of vocalization in the West was not recognized or widely adopted (WANG et al., 2021). However, traditional Chinese vocal music absorbed the skills of Western vocal music theory, and with the development of the social economy and the continuous process of globalization in the context of world culture, modern Chinese vocal absorbed aspects of innovative progress (YUAN, 2019). This has increased the demands on the vocal data, skills, and technique of singers and raised the cultural significance of national musical works in the international arena (KANG, 2021).

Traditional Chinese opera has played an important role in the development of contemporary Chinese national vocal music (ZHIBO, 2021). The main features of Chinese opera are the combination of different arts, the stylization of the production (HUANG *et al.*, 2018). With these features, Chinese opera differs from productions of the world opera art; it has become the only genre of this kind on the world opera stage. Traditional Chinese opera is a comprehensive art form that perfectly combines sound, language, and form and perfectly realizes the beauty of language and rhythm (SILVERBERG, 2012). While singing, artists produce intense high sounds using throat resonators (QIAN, 2018). Attention to diction and the use of facial expressions are important performance requirements (QIAN, 2018). Contemporary Chinese opera not only inherits the essence of Chinese national music, but also incorporates the unique vocal techniques of bel canto (ZHIBO, 2021)

In contemporary Chinese national vocal music and traditional opera, the singer's use of breath is of paramount importance (ZHOU, 2019). A common breathing method for opera artists is to use the Dan Tian, a Qi focusing area (SHA *et al.*, 2013). That is, effective control of the breath is from the navel area, which is the

fulcrum of the diaphragm (ZHU, 2021). Vocal breathing is carried out with the support of the lower abdomen with the involvement of the head-nasal resonators with a neutral position of the palate, ensuring singing in a high vocal formant, obtaining nasal and "flat", sharp sounds (ZHANG, 2019).

The main influences on Chinese vocal music are accents, tones, and embellishments (LI, 2017). Emphasis determines the correct pronunciation of words, while tones distinguish their meanings (LYU, 2019). In Chinese opera singing, the requirements for the "four tones" that form the basis of the Chinese language are extremely strict, and a decorative tone is added to the composition, which can make the expression more precise (GUAN, 2021). Consciousness of the embellishment of the melody lies in the use of various forms of decorative tones, with the help of which it is possible to enrich its content (ZHANG, 2019).

The relevance of the work is dictated by the importance of developing Chinese traditional and contemporary vocal arts for the preservation of the country's cultural heritage and individual self-development, professional growth, and realization of contemporary vocal performers. This work is an original study of vocal singing features in Chinese popular and traditional music, the influence of various musical genres on vocals, the specifics of traditional and modern Chinese vocal singing, and the techniques and methods used in Chinese vocal arts.

Literature review

The level of Chinese vocal arts development reflects the aesthetic ability, artistic achievement, and humanistic qualities of the nation, and reflects the cultural soft power of the country (YANG, 2020). The modern Chinese method of vocal singing inherits the essence of the Chinese national vocal music tradition, draws on advanced Western singing techniques, and uses as specifications the standard mandarin, local dialects, minority languages, rich and soft voice rhythm, and Chinese musical vocabulary (LI, 2016).

Chinese vocal art is an art of linguistic music that combines music and language to express emotion and demonstrate expression (DANDAN, 2018). The tonal nature of the Chinese language contributes greatly to the expressive reproduction of the melodic passages of traditional and contemporary Chinese vocal chant (LYU, 2019). In Chinese vocal singing, timbre beauty and clarity of performance are achieved through the use and control of the breath (ZHIBO, 2021). It has been noted that breathing, articulation, and diction techniques are basic skills needed for performers of Chinese vocal music (YUAN, 2019). The performer must not only sing, but also be able to express the emotion of the piece, convey it to the audience, resonate emotionally with the audience, and maximize the artistic appeal of the piece through clear articulation and timbre processing (QIAN, 2018). In the Chinese traditional style of singing, the breathing technique is reflected in the concept of "air plunging into the dantian". In the vocalist's system, "dantian" refers to a place on the body three inches below the navel (JIANG, 2018). Chinese vocal opera singing is characterized by sharp and rolling tonality (XU, 2015).

In the course of its development, Chinese national vocal music has constantly learned from opera, thus forming a method of singing with Chinese specificity (SILVERBERG, 2012). Chinese opera combines national and religious music, palatial melodies, singing, and dancing (XU, 2015). It has been emphasized that opera singing occupies an extremely important place in the traditional Chinese national vocal art and is a treasure of the Chinese nation and one of the most significant elements of China's intangible cultural heritage (WANG *et al.*, 2015). Traditional Chinese opera is divided into four categories according to melody: kunshan melody, bangzi melody, pihuang melody, and geyang melody (KANG, 2021). The art of opera combines vocal singing with the use of throaty manner and the predominance of falsettos, as well as physical performance (WANG *et al.*, 2015).

It has been noted that contemporary Chinese popular music is influenced by cultural globalization, especially as musical

genres, production, and distribution constantly cross borders, whether national or cultural (NOEL, 2022). Thus, Chinese popular music should be seen in the context of global capitalism and transnational flows of mass culture (ZHANG, 2021). Chinese contemporary national vocal art has its own unique connotation, which distinguishes it from traditional Chinese and Western vocals (YUAN, 2019). Nevertheless, contemporary Chinese vocals have been shaped by the influence of Western bel canto singing and traditional Chinese singing, including opera and folk (WANG *et al.*, 2021). In this way, the sound position and timbre of the performer's voice are integrated, and the overall level of performance of artistic works in contemporary Chinese vocal music is enhanced (GUO, 2015).

It has been pointed out that Chinese vocal music has its own unique national characteristics, and the different dialects and customs of different ethnic groups are major factors in styles formation of vocal and musical art (YANG and DING, 2021). Chinese vocal art is influenced by such factors as phonetics, style, context, syllables, and relationships between morphemes, words, and internal word meaning systems (GUAN, 2021). The peculiarities of Chinese vocals reflect the specificity of historical development of different ethnic groups, folk worldview, as well as beliefs, rituals, and customs (LIN, 2020).

Scholarly works have also noted that under the conditions of globalism, under the combined influence of traditional and Western aesthetics, Chinese vocal music has developed a creative aesthetic trait with emotionality as its connotation, as well as vividness and timbre pitch (DI and KIM, 2022). It was emphasized that works with a national Chinese style constantly appear in the creation of popular music, mostly these works are based on traditional Chinese music, and a large number of national instruments such as guzheng, guqin, and pipa are used (YIN, 2018). The method of singing reflects the melody and craftsmanship of the nation, and some works also use ancient poems as lyrics (LIN, 2020).

It has been emphasized that articulation, vocalization, tone, pitch, breath control, and emotional expression of the singer are skills that a performer of Chinese vocal singing must possess. The artist's vocal skills effectively express and convey emotion in vocal performance, enrich the connotation of artwork, and at the same time create a unique artistic image, enhance the quality of performance, and resonate with the audience (LI, 2017).

Problem statement

This work seeks to identify the characteristics of vocal singing in Chinese popular and traditional music, as well as to determine the ways in which the musical genre influences the vocal.

The study objectives were to:

• Obtaining new experimental data on the basic vocal techniques used in popular and traditional music in China;

• Determining the influence of different musical genres on Chinese vocals;

The main study objectives were to:

• Considering the peculiarities of traditional and modern Chinese singing;

• Analysis of Techniques Used in the Vocal Art of China;

• Examining the influence of musical genres on vocal performance;

Methods and Materials

Study design and sampling

In this study, an experiment was conducted to identify the main vocal techniques used in popular and traditional music

in China. Two modern vocal teachers and two traditional vocal teachers from Beijing University analyzed the curriculum approved by the Ministry of Education of the People's Republic of China and identified the inherent techniques of each discipline in the context of teaching practice.

The influence of different musical genres on the vocal performance was also analyzed. Two art experts from the Central Conservatory of Music (Beijing) and Lishui University participated in the analysis and evaluated the performance of different vocal genres.

The analysis was based on a mechanical sampling among third-year vocal students at Beijing University, and the selection criterion was the gender of the respondents. The research sample was 30 male and female vocal students (50% to 50% respectively) aged 19-21 years old. The analysis was done through watching video content provided by the students and posted on the iQiyi online arena. Each respondent provided 6 videos of singing in different genres.

All of the people involved took part in the study on a volunteer basis, and communication between the participants was done through the social network WeChat.

Peculiarities of analysis

The study was conducted over 10 days (March 21, 2022 to March 30, 2022).

The study was divided into 3 stages:

1.   experiment stage, in which vocal teachers analyzed the curriculum approved by the Ministry of Education of the PRC and determined the inherent vocal techniques of each direction. The stage lasted 5 days;

2.   analyzing the influence of musical genres on vocals. At this stage the art historians investigated singing in different genres and identified vocal techniques and peculiarities inherent in them. The stage lasted 3 days;

3. catamnesis stage, in which the data obtained were analyzed and reports were compiled. The stage lasted 2 days;

Statistical analysis

Mathematical and statistical analysis was performed using the SPSS-12.0 program. Statistical error in the results of the experiment does not exceed 1.2%. Correlation analysis was performed using Microsoft Excel.

Ethical issues in research

The curricula for the experiment were taken from the official public archive of Chinese Ministry of Education. All materials provided by respondents to iQiyi for the study are confidential and remain in closed access, processed, and retained in accordance with the Personal Data Protection Law of China (2021). The study is approved by the Research Ethics Committee of China.

Results

In accordance with the established objectives, the techniques used in singing in Chinese popular (Figure 1) and traditional (Figure 2) music were identified.

The study considered the following techniques:

1. Splitting;
2. Drive;
3. Subtone;
4. Overtone singing;
5. Glissando;
6. Falsetto;
7. Vocal fry register;
8. Mixed;
9. Vibrato;

Based on the experiment results, it was found that in traditional singing falsetto technique prevails (58%). Mixed (21.2%), vibrato (13.2%), and overtone singing techniques (6.1%) are also actively used. Glissando makes up 1.5% of applications.
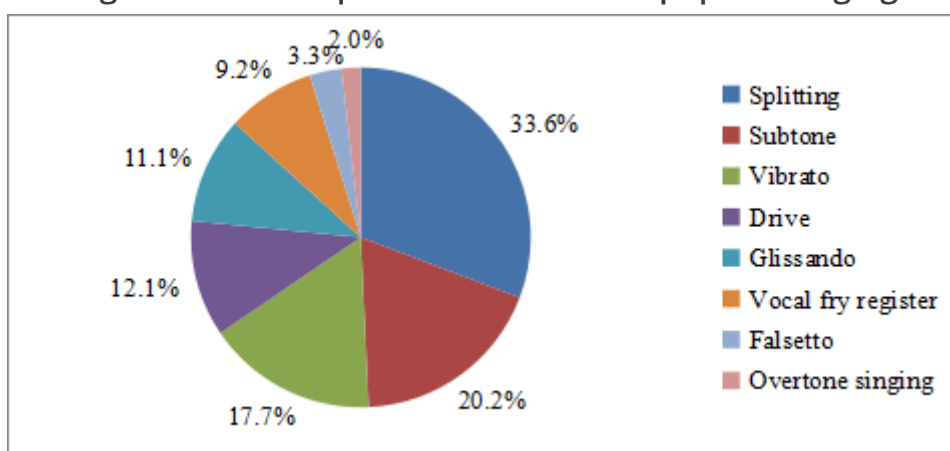
Figure 1 - Techniques used in traditional Chinese singing
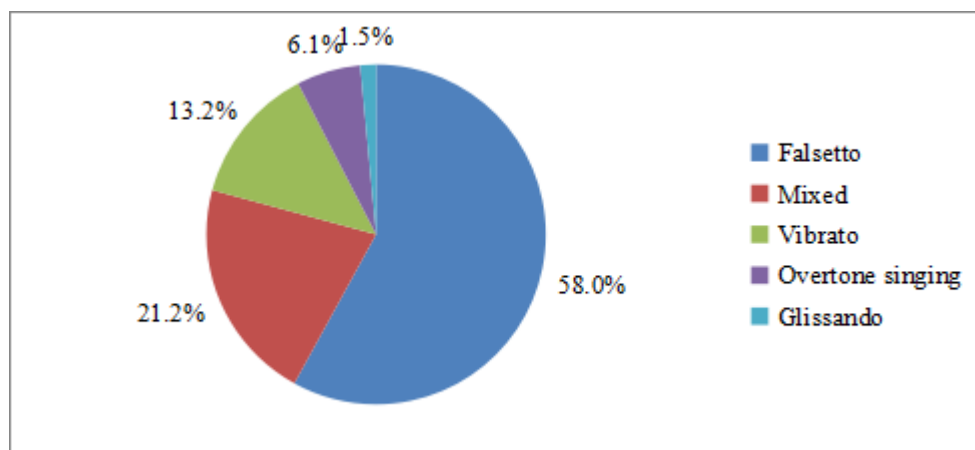
Source: developed by the authors

It was found that in popular vocal singing the splitting technique prevails (33.6%). Subtone (20.2%), vibrato (17.7%), drive (12.1%), glissando (11.1%), vocal fry register (9.2%), falsetto (3.3%), and overtone singing (2%) techniques are also used.
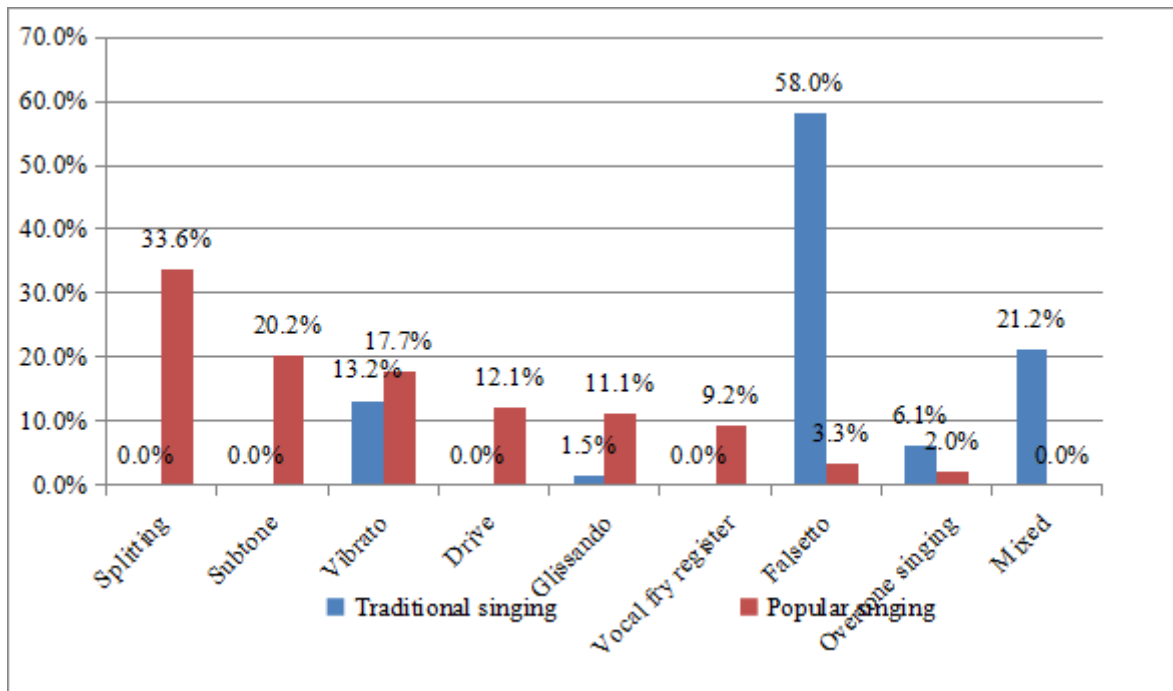
Figure 2 - Techniques used in Chinese popular singing

Source: developed by the authors

A comparative analysis of the techniques used in popular and traditional Chinese singing is shown in Figure 3.

Figure 3 - Comparative analysis of techniques used in popular and traditional Chinese singing

Source: developed by the authors

A correlation analysis was performed to determine the dependence of popular vocal techniques on traditional singing (Table 1). The analysis was performed through Microsoft Excel.

Table 1 - Techniques used in popular and traditional Chinese singing

	Popular singing	Traditional singing
Splitting	0%	0%
Subtone	20.2%	0%
Vibrato	17.7%	13.2%
Drive	12.1%	0%
Glissando	11.1%	1.5%
Vocal fry register	9.2%	0%
Falsetto	3.3%	58.0%
Overtone singing	2.0%	6.1%
Mixed	0%	21.2%

R = 0.335, that is, the calculated parameters of the model explain the dependence between popular vocal techniques and traditional singing by 33.5%. The coefficient of determination is below the average, which is explained by the influence of Western bel canto techniques on modern Chinese vocal art.

The peculiarities of using specific vocal techniques within the framework of various musical genres were also determined in the study.

Statistical data of analyzing the use of specific vocal techniques within a variety of musical genres are presented in Table 2.

Table 2 - Statistical data of analyzing the use of specific vocal techniques within a variety of musical genres

	Pop	Rock	Opera	Folk/ Country	Blues/ Jazz	Hip Hop
Splitting	48.9%	26%	-	31.1%	3.4%	6.5%
Drive	3%	47.3%	-	12.7%	0.6%	11.3%
Subtone	1.4%	1.4%	-	9.6%	5.5%	22.5%
Overtone singing	-	1%	-	30.2%	5.3%	27.8%
Glissando	0.7%	1.3%	-	3.7%	12.1%	-
Falsetto	13%	11.1%	44.1%	-	24.8%	-
Vocal fry register	-	2.1%	-	12.4%	18.6%	31.7%
Mixed	12%	1.7%	31.5%	-	-	-
Vibrato	21%	8.1%	24.4%	0.3%	30.3%	1.2%
Statistical error	1.1%					

It was found that when performing pop music, artists focus on controlling their vibrato without significant tension on the vocal cords and larynx. Short, "clapping" sounds predominate in the performance. When performing rock, artists add noises and growling tones to their vocals. A wide range of dynamics (from whispering to shouting) is used for singing, and vibrato can be used freely. In opera most of the songs are sung with uncontrolled vibrato, and falsetto and mix techniques are used. When performing

folk and country music, nasal sounds predominate, and vibrato is almost never used. Artists also use the technique of a sharp transition from floating sounds to a heavy tone. When performing blues and jazz, performers use clear diction and articulation with distinct consonants. While singing, artists use slides, pitch slides, and scatting. Hip hop performance is characterized by rhythmic, slightly harsh, and nasal sounds.

Discussion

European studies have noted that traditional vocal uses Dan Tian breathing, which allows performers to freely control the intensity and frequency of the voice as well as the brightness of the tone (SILVERBERG, 2012). In traditional vocalization, the performer must be precise in the sound of each word, and the articulation must not only meet the requirements of the four tones of the Chinese language, but also have a sense of rhythm (WINZENBURG, 2013). The use of breathing techniques from the starting point of Qi meets the vocal requirements of different genres and better reflects the humanistic emotions and cultural connotations of each genre (WHITENER, 2017).

The above-mentioned statements are confirmed by the data obtained during the study, as during this study it was revealed that in traditional singing the falsetto technique prevails (58%). It was also found that vibrato, overtone singing, glissando, and mixed techniques are actively used, distinguished by the breathing practices coming from the center of the diaphragm at the navel, that is, Dan Tian breathing.

Scholarly works in the United States and Canada have noted that the contemporary Chinese music presents a variety of styles and unique national colors, among which pop music is the most common (KOUWENHOVEN, 2020). Popular music in China is mostly lyrical ballads; the singer's voice rises in its range and sound waves are redirected from the hard palate to the soft palate, creating a smaller vibrating area for the higher frequencies (OTA and EHARA,

2012). The sound waves produced by the performer's vocal cords pass through two resonators before leaving the lips, the throat and mouth, where resonance occurs. This singing technique is called splitting and is key in the vocal singing of popular Chinese music (NOEL, 2022). These statements are supported by the data in the present study, as the analysis of pop songs revealed that the splitting technique (33.6%) prevails in Chinese popular singing.

Chinese scholarly studies have noted that traditional Chinese vocal arts are based on the traditional system of Chinese culture, and have their own unique techniques and methods that are distinct from modern vocals (GUO, 2015). Traditional national vocals require the voice to be smooth and the vowels to be rounded, subject to clear articulation (GUAN, 2021). It has been noted that modern vocal performance is partially based on the traditional one, retaining the national flavor but oriented toward Western influences (XIAONA, 2022). Contemporary pop songs use spoken Chinese, although some works retain the formal language of Cantonese opera (LIN, 2020). Many popular compositions incorporate traditional Chinese musical instruments but use Western techniques in the vocals (ZHOU, 2019). In the present study a correlation analysis was conducted to determine the dependence of popular vocal techniques on traditional singing; determination coefficient was R=33.5% (relatively low level of dependence). This can be explained by the influence of the Western bel canto techniques on the popular vocal art of China.

Russian studies have pointed out that the art of opera in China is not limited to vocals but is a theater that requires four basic skills from the performer, which include speech, acting, dance, and singing (WANG, 2021). Performers must also be highly skilled in martial arts and acrobatics (LI, 2020b). It has been noted that Chinese operatic singing is syncretic, characterized by an abundance of sharp, rolling sounds and falsettos, and a tense, high-pitched style of performance due to the use of throat resonators (QIAN, 2018). Performing Chinese opera requires the vocalist to use a massive timbre with a high-pitched voice, with vocal range

not being paramount (WANG *et al.*, 2021). It has been noted that Chinese opera artists use melodic patterns and vocal timbres to convey the age and gender of characters, with high falsetto sounds being the base of performance (KANG, 2021).

The above statements are supported by the present study data, as analyzing the vocal techniques of opera performance in China determined that falsetto (44.1%) and mixed (31.5%) techniques predominate in opera singing.

Korean scholarly works have also noted the vocal performance of jazz and rock in China. It was pointed out that Chinese jazz performers use vibrato to imitate the sounds of instruments while using falsetto to give a folk flavor to a piece of music (LI, 2020a). At the same time, rock music performance is dominated by the use of a hoarse/aspirational head voice, chest growls, and splitting techniques that create resonance, which gives the voice a ringing power (QIAN, 2012).

The above statements are supported by the data obtained in the study, as the analysis of Chinese jazz vocal works revealed that in popular singing, vibrato (30.3%) and falsetto (24.8%) techniques are primarily used, while in rock performance, drive (47.3%) and splitting (26%).

Conclusions

This paper identified the features of singing in Chinese popular and traditional music, the ways in which musical genres influence the vocal techniques used by performers, and identified the main vocal techniques used in Chinese popular and traditional music. It was determined that falsetto techniques (58%) dominate in traditional vocals, in addition to mixed techniques (21.2%), vibrato (13.2%), overtone singing (6.1%), and glissando (1.5%) are also used. In popular singing the most common technique is splitting (33.6%), also applied are subtone techniques (20.2%), vibrato (17.7%), drive (12.1%), glissando (11.1%), vocal fry register (9.2%), falsetto (3.3%),

and overtone singing (2%). As a result of the correlation analysis, the dependence of popular singing methods on traditional singing was determined. The calculated parameters of the model showed the coefficient of determination R=0.335 (33.5%), i.e., value below the average, which can be explained by the influence of Western bel canto techniques on the popular vocal art of China.

The peculiarities of applying different vocal techniques within different musical genres were also determined in the work. It was revealed that when performing pop music, vibrato is controlled, vocal cords and larynx are relieved, short, "clapping" sounds prevail. When performing rock, noises and growling tones are added to the vocals, a wide range of dynamics is used, vibrato is used freely. Opera - uncontrolled vibrato is used, falsetto and mixed techniques are used. Folk and country - the dominant sounds are nasal, vibrato is almost not used, the technique of abrupt transition from floating sounds to a heavy tone is used. Blues and jazz - the use of clear diction, articulation, slides, pitch slides, and scatting. Hip hop is characterized by rhythmic, sharp, and nasal sounds.

The study results can be used in pedagogical practice online and offline to develop seminars on vocal arts within different genres and art history, as well as to improve teaching programs that will help interest students in Chinese culture and art. The practical significance of the study lies in the possibility of using the results in the process of creating educational programs, plans and courses for the study of Chinese traditional and popular vocals in various educational institutions. The results of this work will help vocalists to improve their skills, better understand the specifics of this or that genre and the features of various theatrical musical productions. The results may be reflected in the cultural and educational sphere, which will allow the general public to enjoy the aesthetics of Chinese vocal arts, in the tourism business to attract tourists through concerts and productions. The study results can be applied in the field of theatrical culture in the production of traditional Chinese opera performances.

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