

The Role of the Violin and Its Elements in Chinese Opera

O papel do violino e seus elementos na ópera chinesa



Qin Yu Fu

School of Music and Dance, Shangrao Normal University, Shang Rao, China

Correspondence: qinyufu55@gmail.com, 272810272@qq.com

Abstract: Opera performances are a collection of dialogues, dances, and songs, accompanied by a variety of instruments. The paper primarily focuses on the specific features of the influence of various Chinese violins on opera performances. The authors analyzed jinghu, erhu, dahu, banhu, and gaohu, as well as outlined the elements that make up the melody for a particular instrument in opera performances. The survey outcomes suggested that improvement of the performance program requires, as part of the staged action: adding a melody that corresponds to the production's mood (30% of respondents); playing tunes on jinghu more quietly (27% of respondents); removing the tightness when playing banhu (25%); eliminating gaohu (18%). Further survey suggested that melodies were most clearly and correctly played with erhu (27%) and jinghu (23%), with the soft tones and piercing sounds which are typical for these violins. 10% of respondents believed that gaohu was played with many mistakes and was described by a lack of distinctive clear sounds. The respondents' perceptions of, and playing different violins in, opera suggested that the best quality performance was observed with erhu (0.92), jinghu (0.83), banhu (0.81), and dahu (0.79). The calculation results were compared using the Student's t-distribution, which suggested the similarity of values

for almost all violins, except for gaohu, because playing it in opera performances was not melodious. The research findings are valuable to opera violinists studying the specific features of musical instrument and the harmony of all elements.

Keywords: Emotionality of singing. Rhythm. Subtle sounds. Tone elements. Violin varieties.

Resumo: As apresentações de ópera são uma coleção de diálogos, danças e músicas, acompanhadas por uma variedade de instrumentos. O artigo concentra-se principalmente nas características específicas da influência de vários violinos chineses em performances de ópera. Os autores analisaram jinghu, erhu, dahu, banhu e gaohu, bem como delinear os elementos que compõem a melodia para um determinado instrumento em performances de ópera. Os resultados da pesquisa sugeriram que a melhoria do programa de performance requer, como parte da ação encenada: adicionar uma melodia que corresponda ao clima da produção (30% dos entrevistados); tocar músicas no jinghu mais silenciosamente (27% dos entrevistados); removendo o aperto ao jogar banhu (25%); eliminando gaohu (18%). Pesquisas posteriores sugeriram que as melodias eram tocadas de forma mais clara e correta com erhu (27%) e jinghu (23%), com os tons suaves e sons penetrantes que são típicos desses violinos. 10% dos entrevistados acreditavam que o gaohu era tocado com muitos erros e era descrito pela falta de sons claros distintos. As percepções dos entrevistados sobre tocar violinos diferentes na ópera sugeriram que o desempenho de melhor qualidade foi observado com erhu (0,92), jinghu (0,83), banhu (0,81) e dahu (0,79). Os resultados dos cálculos foram comparados usando a distribuição t de Student, que sugeriu a similaridade de valores para quase todos os violinos, exceto para o gaohu, pois tocá-lo em performances de ópera

não era melodioso. Os resultados da pesquisa são valiosos para violinistas de ópera que estudam as características específicas do instrumento musical e a harmonia de todos os elementos.

Palavras-chave: Emotividade do canto. Ritmo. Sons sutis. Elementos de tom. Variedades de violino.

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Introduction

Chinese culture is one of the oldest in the world, with over five millennia of evolution. Chinese opera is part of the country's culture, which displays all the historical elements, unique sounds, pentatonic tone row (playing of five notes with intervals), pitch using unique percussion, wind, string and bowed string instruments.

The most recognizable is the Peking Opera, which was established more than 200 years ago (BØRDAHL, 2018). Peking Opera has orchestral music, where the rhythm is determined by percussion instruments (LI, 2019). Jinghu (a type of Chinese violin) is a primary instrument, with erhu playing a secondary role (BOIKO and MING, 2021). Plucked string instruments (yueqin, pipa, sanxian) and the Chinese flute are also used in opera performances (WU, 2021). These musical instruments create a variety of sounds (loud, quiet, soft, and sentimental) that express the characters' emotions in the opera performance. Chinese opera is described not just by music, but also by acrobatic performances, dance, and dialogue, which have no time constraints or spatial limitations as they encompass various scenes and symbols (ROLSTON, 2021). Chinese operas also include píngjù (Hebei opera), yuju (Henan opera), yue (Shaoxing opera), and qinqiang (Shanxi opera), kūnqǔ (Kunqu Opera), chuanjui (Sichuan opera), hanjui (Hubei opera), yue (Guangzhou opera), chaozhou (Teochew opera), Tibetan opera.

Bowed string instruments, especially violin, are important in opera performances (CHAO, 2021; LIU and ZHOU, 2021). Violin carries the melody and also affects the composition's and the opera singers' emotional state. Jinghu, the main violin in Chinese opera, contributes to the sipi melodies and also influences the composition's tune (DÖKMECI, 2021; ZENTNER, 2010). Violin creates a unique timbre and reduces the power of percussion instruments (drums, tánggǔ, shugu, etc.) (CLENDINNING, 2012; HALE, 2018). The use of opera elements by the violinist is a unique challenge because it requires a combination of operas

and ability to play within a range of two octaves (BARRON, 2015; ZUPANČIČ, 2018). Introducing opera elements while playing the violin requires knowledge of the technical, acoustic, and tone elements that contribute to imitating the opera singer's voice (HENGFU, 2021; WELIVER, 2012).

The European violin in Chinese opera performances has been used as an element of Westernization since the second half of the 20th century (ZUPANČIČ, 2022). The use of the European violin has been reflected in the implementation of modern musical elements and a combination of Western and Chinese culture (ANTOKOLETZ, 2021). The use of violin also has affected creative improvisation and the search for new artistic expression (HUIMIN, 2018). This approach had an impact on the application of modern music and the variety of musical genres (PYKA, 2019). At the same time, the combination of Chinese folk melodies with a violin has influenced the formation of European harmony. The violin contributes to the creation of a unique timbre color, which affects the change in intonation and sound rhythm. The quality of the change in the note intonation depends on a musician's professionalism and contributes to the transmission of the necessary sentiments (YE, 2019). Due to various articulations, the proper sentiment of musical compositions is formed (YU, 2020).

The authors reviewed available literature on the use of the violin in opera, including Chinese opera. When used in opera, violin accompanies important events in people's lives, awakens them to spiritual search, and makes a holistic picture of the world, which also affects the artistic images. Violin tempo, rhythm, and visualizations in performances (SAFIULLINA and BATYRSHINA, 2014). Jinghu is one of the main instruments in the Peking Opera orchestra, played mostly by men. The female instrument, with a design similar to jinghu, is known as qinshi, and it complements jinghu, giving a special tune to compositions (LI, 2021c). Traditional Chinese opera elements are based on Western musical techniques and lexical features. Opera elements in Lei Liang's Peking Opera Soliloquy and Xiǎoxiáng compositions include singing,

accompaniment, Chinese melodies, polyphony, and sheet music. The musical and artistic elements in the presented compositions are described by Western musical notation, genres, styles, and performance techniques (ZHANG and FYR, 2021).

Since 1880, Chinese opera was text-oriented, using anthologies that focused on historical features. Analysis of opera texts made it possible to explore a holistic picture of opera performances' evolution (LI, 2021b). Violin used in opera performances expands the musical repertoire, as well as moves beyond cross-cultural strategies that seek to reflect the positions of composers, theorists, and performers. The pieces written by East Asian composers show the fusion of Western and Eastern cultures, affecting the use of gestures, history, cultural pattern, and aesthetics of opera performances. Violin contributes to the expression while conveying the above elements (EVERETT, 2021). Peking Opera is the most influential drama in China and one of the three performing systems in the world. Evolution accelerates Peking Opera's development and suggests new approaches therefor. The introduction of violin's musical elements contributes to harmonious theatrical performances (WANG et al., 2020).

Development of Peking Opera requires new scripts to help visualize the relevant criteria. Visualization depends on scenarios, a general picture and plots. Scenario visualization is based on the integration of demand analysis and the elements' features. This approach promotes new instruments, including violins, as well as motivates audiences to attend opera performances (HOU and ZHANG, 2020). Peking Opera belongs to traditional Chinese performing art and combines the following elements: plot, staging, role, song, speech, and acting, which have a direct impact on the audience. To convey humor, musical instruments (particularly, the violin contributing to improvisation of funny melodies) should be included (ZHANG and JIN, 2018). When used in various performances, bowed string instruments require an understanding of technique and performance styles to create an acoustically correct performance. Performance acoustics depends on

the premises, soundproofing, sound propagation distance, etc. To determine the acoustic parameters, brightness of the musical passage and its perception by audience at different points in the concert hall should be evaluated by ear (GRILLO et al., 2018). Violin is one of the most important musical instruments in the West. In China, the European violin has contributed to the development of the Chinese violin, which affects the culture through unique Chinese sounds being harmonized in a variety of performances (LI, 2021a).

The European violin is important in music as it enables reproducing sounds with high accuracy. Therefore, playing the violin requires a conscious control over the movements. Complex bow playing techniques are associated with hand movements, so insufficient attention to the technique affects the accuracy of the reproduced sounds. The elegance of the violin's sound conveys the whole range of feelings and the depth of emotions. Bass strings produce a thick and strict sound; upper register strings reflect a bright and sonorous sound (D'AMATO et al., 2020). The cello, as a bowed string instrument, is characterized by some undesirable trills that arise as a result of body resonance and movements of strings. The role of the cello in the orchestra is to convey tense sounds, characterized by a strangled sound in the upper register. In string concerts, the cello produces the lowest sounds (GOURC et al., 2022). In an orchestra, a combination of musical instruments is important since it contributes to the reflection of different pitch and harmonics spectrum. A double bass helps to produce a rich low sound. The importance of the double bass in a musical orchestra lies in the need to create a musical basis for performance. The sound of the instrument is characterized by density and completeness, which fits into four octaves (JAATINEN et al., 2021). Available literature suggests that violins used in performances secure harmonious combination of elements, but the variety of violins used in China is not discussed.

The paper primarily examines the introduction and importance of the violin in Chinese opera performances.

The research tasks were as follows:

- analysis of various Chinese violins (jinghu, erhu, dahu, banhu, gaohu), based on the respondents' perception of string instruments used in opera;
- specifying the elements that should be introduced for a more vivid sound when staging an opera;
- studying the playing of, and perception by the audience of, different violins in an opera performance.

Methodology

The importance of violin elements in opera performances was analyzed (PUSHKAR and POTRASHKOVA, 2009), with surveys conducted (GUBANOVA and KOLOSOVA, 2013). 204 respondents were selected among musicians (composers, instrumentalists, singers), teachers, and music critics from China. Respondents were engaged in order to assess the opera productions presented by graduates (4th and 5th years) from three Chinese universities.

The choice of this category of respondents was made since graduate students usually have a comprehensive idea of musical skills. Besides, they study both general and narrowly focused musical disciplines during their course. During the selection of respondents, the specifics of staging opera performances were emphasized, as well as the desire to study the specifics of playing stringed instruments. Students of the 4th and 5th courses have experience of participating in concert events, provided by the training program (competitions, exam performances, etc.). *Romeo and Juliet*, which combined European symphonic music and Chinese folk music (with the violin music parts being the main element), was the staged action. The method of analysis (PUSHKAR and POTRASHKOVA, 2009) was used to select and evaluate operas. Thus, *Romeo and Juliet* was chosen among 70 performances. This choice was based on the possibility of combining European and Chinese music. Also, an important emphasis was placed on the possibility of implementing the violin sound, which could be

aimed at transmitting the proper sentiments. Out of the 10 most suitable operas, the opera *Romeo and Juliet* was randomly selected for research using the Google form. Initially, 220 respondents were expected to take part in the study, but 16 dropped out because they could not attend opera performances and provide the necessary information. All participants were provided with the necessary information about the study and gave the required written consents to participate in it.

The survey determined whether the respondents had knowledge of the varieties of Chinese violins, as well as whether they had played them before. These data are needed to enable further evaluation of melodies played with Chinese violins as part of opera performances. The survey was conducted by sending to the respondents links to Google forms, where questions with answers were posted in the “Results” section. Respondents were given 3 hours to provide answers.

Following the survey, the authors decided to analyze various Chinese violins (jinghu, erhu, dahu, banhu, gaohu). These data were provided to the respondents so that they could review the evaluations of opera performances. The analysis was based on the review of the literature presented in the introduction.

After the opera performance, the authors identified (by conducting the survey) elements that should be introduced into the opera performances for a brighter sound. At this point the survey was conducted according to the previous phase’s principles. The answers were as follows:

- eliminate gaohu;
- adjust the tune to match the production’s mood;
- remove the tightness when playing banhu;
- play tunes on jinghu more quietly.

The survey also assisted in identifying the Chinese violins with the most correct performance of musical elements.

The next step was to determine the level of performance and audience's perception of various violins in opera performances. Calculations were made using formula 1:

$$L_p = \frac{\sum P_T + \sum P_A}{\sum C} \times d, \quad (1)$$

where:

$\sum P_T$ - points for performance technique;

$\sum P_A$ - points for the performance aesthetics;

$\sum C$ - the number of possible points;

d - the melody coefficient.

Violin performance in opera within the range of 0.79 to 1.0 is considered strong;

Violin performance in opera within the range of 0.51 to 0.78 is considered medium;

Violin performance in opera within the range of 0.1 to 0.5 is considered weak.

Next, the above findings were compared with Student's t-distribution (formula 2). If the calculated data are lower than the tabulated data, the values are equivalent (KOBZAR, 2006).

$$t = \frac{M_1 - M_2}{\sqrt{m_1^2 + m_2^2}} \quad (2)$$

where, M_1, M_2 - average discrepancy in playing different violins;

m_1, m_2 - root-mean-square deviation of playing different violins.

Data were collected, grouped and processed using Microsoft Excel. The Microsoft Excel program provided the accuracy of the data presented: the entered formulas were used to calculate

indicators construct graphic material. The authors met the ethical standards for the research, which were to provide relevant and reliable information, respect the respondents' rights and responsibilities, and prevent plagiarism (NORWEGIAN NATIONAL COMMITTEE FOR RESEARCH ETHICS IN SCIENCE AND TECHNOLOGY, 2016).

The study is subject to limitations caused by the lack of data on the development of a training program that will eliminate inaccuracies in opera singers' performances. Nevertheless, the survey identified elements that do not disrupt the harmony of the opera performance and need to be adjusted.

Results

During the first phase, the survey determined whether the respondents had an idea about the different types of violins (Table 1).

Table 1 - Determining respondents' perceptions of string instruments used in Chinese opera

| Indicator | Responses of respondents, % |
|--|------------------------------------|
| I have an understanding of opera string instruments' principles | 35% |
| I have previously played string instruments in opera performances | 12% |
| I am not familiar with the details of playing string instruments in opera performances | 53% |

The data suggest that 53% of the respondents are not familiar with the specific features of playing string instruments in opera performances. Some respondents had previously studied playing percussion and keyboard instrument. Other respondents do not know how to play musical instruments. 35% of respondents have theoretical knowledge about playing string musical instruments. They understand the differences between the appearance and the specific features of the sounds played. 12% of respondents

had previously played string instruments used for opera performances, but string instruments were not necessarily used to play in opera performances.

Table 1 shows that respondents do not have enough knowledge about Chinese string instruments, so the authors discussed the features of playing musical instruments.

In order to get an insight into the characteristic features of various violins used in Chinese opera, the authors reviewed various sources presented above. The types of violins used in Chinese opera include jinghu, erhu, dahu, banhu and gaohu.

Jinghu is the Peking Opera's main violin. It resembles erhu in appearance but is much smaller and is described by the highest sound among all string instruments. Jinghu is used in Chinese opera because the instrument may produce the most subtle and high sounds as compared to all instruments of the huqin family. Jinghu has two strings (typically made of silk, sometimes also made of nylon and bamboo). Jinghu is used in opera performances to group compressed melodies in one octave and rarely shifts to play higher sounds.

Erhu is a musical bowed instrument that has two strings and can be used both for solo performances and in orchestra. The specific features of erhu performance technique make its sound unique. When playing erhu, the bow must be tensioned with the right hand fingers, with the left hand serving as a vibrato, which involves lowering the string down and playing the sounds. To eliminate the bow friction, which can affect the sound clarity, rosin should be applied to the cylindrical wooden resonator. Erhu is most often used to perform traditional Chinese folk music and is an important musical instrument to accompany Chinese opera. Playing the sounds of nature is an important element for traditional Chinese music, affecting the students' spiritual growth.

Dahu is a less common instrument in Chinese opera, yet one of the largest string instruments in China. This musical instrument

has two strings and a large resonator to increase the pitch. Dahu is commonly used in Chinese orchestras instead of the lower bow strings.

Banhu is not popular enough in Chinese opera. However, it contributes to a special environment in musical drama because it produces sounds expressing conflicts and relationships between people. Like the previously discussed instruments, Banhu has two strings that are tuned to the quint (the highest string). Banhu is played by pressing the strings with the left hand fingers without pressing them against the instrument's neck.

Gaohu is a musical instrument based on erhu, which is the main instrument in Cantonese opera, while in Peking Opera the instrument is used much less frequently. The instrument has a high sound producing a high timbre. Gaohu's resonator is smaller than erhu, and the two strings are tuned a quarte higher, compared to erhu. The sound is bright and clear.

Information provided by respondents about the Chinese violins used in opera performances outlined the elements which should be introduced into opera performances to make each violin sound more vivid. An opera performance produced by graduates was chosen for analysis (Table 2).

Table 2 - Elements that should be incorporated into opera performances for a brighter sound (problems existing in staging opera performances)

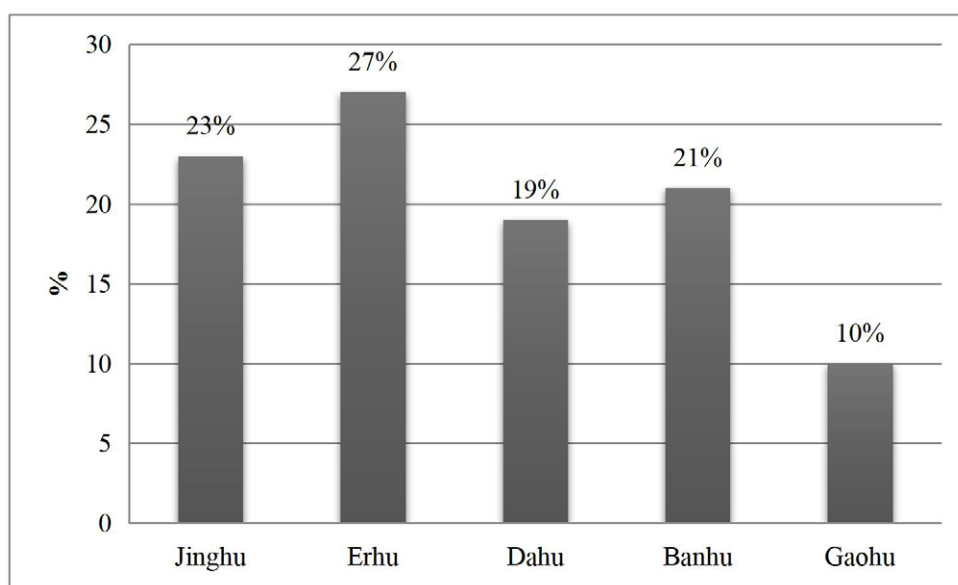
| An element of opera performance | Responses of respondents, % |
|--|------------------------------------|
| Eliminate gaohu | 18% |
| Adjust the tune to match the production's mood | 30% |
| Remove the tightness when playing banhu | 25% |
| Play tunes on jinghu more quietly | 27% |

Table 2 shows that 30% of respondents believed that for a better opera performance the tune should be adjusted to match the romantic production's mood. To do this, dahu should be made

more expressive. 27% of respondents felt that jinghu melodies should be played more quietly and should be grouped together in one octave, excluding loud sounds. 18% of respondents felt that gaohu should be eliminated from opera performances because its sound is too high, which is not appropriate for the presented opera production.

Next, it was determined which of the violins could be played more clearly and correctly as part of the graduates' opera performance. The findings are shown in Figure 1.

Figure 1 - Varieties of violins on which musical compositions have been played correctly



As shown in Figure 1, 27% of respondents believe that the most correct tunes were produced on erhu because the sounds were accompanied by the soft tones characteristic of this type of violin. For 23% of the respondents, shrill sounds resembling a voice were clearly audible, which is typical of jinghu. 10% of respondents felt that gaohu was the least audible during the opera performance because the produced sounds were not clear. Most respondents believe that gaohu should be replaced with pipa, as this instrument amplifies the sound.

Violin is used in opera performances to secure harmony and convey the culture of East Asian traditional music, which contrasts significantly with European music due to the way Chinese words sound, where a single sound can be sung differently.

Further, the level of performance and audience's perception of different violins in opera was determined. For this purpose, formula 1 was relied on to make calculations underlying further comparison of indicators based on Student's t-distribution (Table 3) using formula 2.

Table 3 - Level of performance and audience's perception of different violins in opera was determined.

| Type of violin | Level of performance |
|--|----------------------|
| Jinghu | 0.83 |
| Erhu | 0.92 |
| Dahu | 0.79 |
| Banhu | 0.81 |
| Gaohu | 0.54 |
| Student's t-distribution (2.145 is the accepted tabulated value) | |
| Jinghu and erhu | 0.956 |
| Jinghu and dahu | 1.503 |
| Jinghu and banhu | 1.325 |
| Jinghu and gaohu | 2.239 |
| Erhu and dahu | 1.612 |
| Erhu and banhu | 0.948 |
| Erhu and gaohu | 2.287 |
| Dahu and banhu | 0.015 |
| Dahu and gaohu | 2.183 |

The calculations suggest that erhu secured the most clear and correct performance in the opera production (0.92), because the musical compositions with erhu convey the performance's spiritual commitment and mood. Strong performance levels were

also achieved for jinghu (0.83), banhu (0.81), and dahu (0.79), as they conveyed the opera performances' lyrical mood. The comparison of various violins (based on Student's t-distribution) determined that all but three of the values are equivalent. The data for jinghu and gaohu (2.239), erhu and gaohu (2.287), and dahu and gaohu (2.183) are higher than the tabulated data because of insufficiently harmonic gaohu tunes.

Discussion

Specific features of using the violin and its elements in Chinese opera were discussed with review of available literature. Globalization addresses cultural knowledge sharing between nations, thus contributing to a wider dissemination of classical music. This applies to both Western compositions (Bright Sheng) and Chinese compositions (Tan Dun, Cheng Yi, Zhou Long, and Bright Sheng). Chinese music increasingly combines traditional Chinese musical elements, traditional instruments, Chinese opera, folk tunes, and Western techniques. Bright Sheng's *A Night at the Chinese Opera* and *Three Fantasies* compositions were written for violin and piano based on the Chinese compositional style, taking into account Chinese rhythm and timbre, and ethical elements. This approach to promoting opera performances popularizes Chinese classical music among a wider audience (JIANG, 2018). The China's long history has contributed to the development of various cultures and arts, including musical culture. The violin can fully convey the melody and timbre that were originally incorporated into the composition, promoting a close relationship between traditional musical culture and violin and influencing the development of the violin performing art. New melodies should be played to solve the problems of violin performance, contributing to an innovative musical culture (ZHOU, 2019). The present study identified the peculiarities of the violin in opera performances; however the main emphasis was placed on the peculiarities of different violins' sound.

Cross-cultural elements play an important role in evolution of the 20th century musical culture facilitating the development of the cultures within different ethnic groups in the same country. Traditional Chinese musical elements resulted from a synthesis of Western and Eastern music. An analysis of Bright Sheng's Three Fantasies showed a combination of new elements of sound that are based on a combination of Kazakh and Tibetan folk songs, with contemporary arrangements (ZOU, 2018). Chinese opera and European drama are an important part of artistic crystallization. Opera has been in a crisis in recent decades, requiring new ideas for its development, as well as new instruments and musical compositions. For this purpose, a balance should be secured between "id" and "superego", affecting the opera's focus on innovation (MO, 2020). Tempo is one of the most important elements of musical culture conveying the composition's atmosphere, soul and power. Before 18th century, most opera performances did not have a clearly defined tempo. Instead, music was interpreted according to the generally accepted conventions. To determine the musical composition's tempo, similar compositions should be reviewed, considering their changes at the junction of the 17th and 18th centuries. Development of own style requires paying attention to the true style and the era's specific features (CHANG and CHEN, 2021). In present work, the perception level of various violins by the audience was studied on the basis of determining the elements that require changes.

Violin is a musical instrument that influences improvisation in opera performances. Performing and analytical approaches seek to enhance the relationship of stable and moving elements that delineate the composer's and performer's interpretations of a musical composition. Analysis of K. Tsepkenko's Solo Solissimo No. 1 for violin helped to determine the composer's personality, which is conveyed through tone and improvisation. Improvisation is the main element of self-expression, filling the composition with genre and style identification, introducing a lyrical and philosophical flavor, and dramatic expressiveness. As part of an opera

performance, a violin solo requires the violinist to be more virtuosic and analytical, but yet affects the performer's stylistic competencies (MAIDENBERG-TODOROVA et al., 2021). Arrangement of string elements affects the sound quality. The stick-slip motion of the bow should be ensured, taking into account angle modulation and smoothing effects (AKAR and WILLNER, 2020). When used in opera performances, erhu helps to improve the music's vibrato elements and also affects timbre perception. Changing the volume of tones affects the combination of violin with other musical instruments during opera performances (ZHU et al., 2014). The reasons for using violin in opera performances was initially argued in this study and proved by the questionnaire results. The Butterfly Lovers Violin Concerto by He Zhanhao and Chen Gang was written directly for the violin, which made it possible to combine Chinese and European musical elements. Within the presented concert, the Chinese elements of Yue's opera were adapted for performance by a European violin. The techniques of performance partially resembled the sound of Chinese violins – erhu, pipa, guzheng. The piece is characterized by the reproduction of Chinese aesthetics and philosophy (ZHOU, 2021). Chinese opera performances need to have a connection with national culture and European musical characteristics, which is manifested in using of European instruments (violin, piano). Besides, the combination of diverse musical traditions can manifest itself in the growing popularity of opera in modern musical culture (FENG, 2020). The use of the European violin in opera performances contributes to the discovery of new musical possibilities and affects the sound aesthetics as a result of intercultural interpretations. The new style goes beyond the national sound and contributes to the formation of an individual performance, manifested in the violin concerto by composer W. Chin (SON, 2022). The use of various musical instruments results in the expansion of the musical repertoire, since they contribute to the reflection of multicultural peculiarities of composer's technique and performers. Examples of combining different traditions are the composers Zhou Wenjun, Toru Takemitsu, Chen Yi, Isang Yun. The use of the European

violin in Chinese music enriches compositions with new expressive meanings and aesthetic perception (HUIMIN, 2018). In contrast to the previous research, the present study shows perception by the audience level of various violins (jinghu, erhu, dahu, banhu, gaohu). Available literature addresses primarily the elements of volume and timbre when the violin is used in concert performances, and the effect of cross-cultural elements on the evolution of Eastern musical culture under the influence of Western culture. This paper focuses on characteristic features of various Chinese violins and their influence on opera music.

Conclusions

The role of various violins in Chinese opera performances was studied. Only 12% of respondents had experience playing string instruments that could be used for opera performances. 35% of respondents have theoretical knowledge of the principles of various violins. These data suggested that respondents should be provided with more detailed information about the violins used in Chinese opera. Jinghu is the primary instrument in the opera, with erhu playing a secondary role. Dahu helps to increase the pitch. Banhu expresses relationships between people and conflicts. Gaohu produces high sound intending to create high timbre. After learning information about musical instruments, gaps in violin performances during the opera recitals were identified among respondents using the analysis method. The findings suggested that 30% of respondents believed that tune had to be better. 27% of respondents wanted a more quiet playing of jinghu. 25% of respondents wished to eliminate the tightness while playing banhu. 18% of respondents wanted to eliminate gaohu from the performance because it does not fit the opera performance's mood. The survey also determined that violin compositions within opera performances were most correctly played on jinghu (23%), with 10% of respondents believing such violin compositions were performed least correctly with this musical instrument.

The level of performance and perception of various violins by the audience suggested that the best performance is observed in the case of erhu (0.92), because the opera musicians complied with all the necessary elements to make the melody harmonious. The poorest sound was observed when playing gaohu (0.54), which is attributed to the lack of consistency in playing a variety of violins during opera performances, since gaohu is less harmonious. Comparison of the findings using the Student's t-distribution suggested equivalence among all indicators except for jinghu and gaohu (2.239), erhu and gaohu (2.287), dahu and gaohu (2.183), which is attributed to poor quality tunes played with gaohu. The research findings might be valuable for stage directors contributing to opera performances and studying the characteristic features of various violins. Research perspectives may be associated with the specifics study of the European violin not only in Chinese opera performances, but also in modern music. The prospects of research may both extend to educational field and have significance for instrumental art during the organization of musical events.

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