Hong Kong Xiqu Overview

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Applying "Art Tech" in the Cantonese Opera Industry

Written by: Lam Wai-ting (Cantonese opera actress)

Digital technology has become indispensable to people's daily lives in the 21st century. Hong Kong, an international metropolis, has been supported by the People's Republic of China ("China", "the country") since its return in 1997 while continuing to open its doors to the world. In the past two decades, technology has developed rapidly, especially in Chinese Mainland, as the government has always regulated science and technology with openness and practicality in mind and is committed to enriching its citizens' daily lives and cultural activities. Digital technology refers to the conversion of numbers into signals for information processing, transmission, and storage. Computer softwares were popularised in the mid-twentieth century, and with the rapid development of technology, the rise of the Internet has further encouraged information transmission around the world and pushed the global development of technology. In addition to improving the quality of our lives, technology has also been applied to different industries, such as the performing arts field.

To name one example, projection technology was first integrated into Cantonese opera performances in 1997, when Yuen Ying-wah and Chan Ka-ming co-starred in *The Goddess of the River Luo* (《洛水神仙》), adapted by Au Man-fung. In the last scene, "Reuniting with the Goddess of the River Luo in Dream" (洛水夢會), recorded clips of the Goddess of River Luo were projected onto four white curtains on the stage. Throughout the scene, the projected image of the goddess complemented Cao Zhi's postures and emotions. At times, the actress of the goddess would appear between the curtains, alternating with the projected image. Yuen Ying-wah applied projection technology again in a later performance, *After the Tribulation of the Red Plum* (《紅梅劫後魂》). In more recent times, there is also the young *wenwusheng* Man Wah, who is committed to the inheritance and innovation of Cantonese opera. She applies different projection elements to her Cantonese opera performances. With the advancement of technology, artists are not limited to 2D projection; 3D projection is regarded as a new element of the performing arts, and its use has been actively developed by Chinese Mainland and Hong Kong Cantonese opera artists.

In 2017, China formulated a new strategy of the China National Arts Fund in accordance with the "13th Five-Year Plan for Economic and Social Development of the People's Republic of China" and the cultural development plan for the 13th Five-Year Plan period. During the 13th Five-Year Plan period, the Arts Fund received 2.5 billion RMB funding from the central government, aimed to

support 4000 projects, averaging around 800 projects per year. Development of art tech talents is a key funding area for relevant projects under the "Artistic Talent Training Funding Projects" category. In March 2022, the country's Ministry of Culture and Tourism published a notice about issuing the National Arts Fund's funding plan during the 14th Five-Year Plan period. The fifth item of the "Work Principles" listed in the funding plan states: "Adhere to promoting the integrated development of art and technology; adapt to the advancing economic and social development and technological progress and promote the application of technological development and technological innovations; accurate use of new technologies and new methods, integrating various artistic and technological elements; stimulate creative inspiration, enrich cultural depth, express thoughts and emotions, and broaden the space for artistic creation to present a new realm of literary and artistic creation with more depth and potential." This exemplifies that the integration of technology and art development is a key project for the country's journey in building a modern socialist country. These rules are in place to boost cultural and artistic creations in order to provide the people with more and better food for thought.

It is imperative to promote the development of digital technology and art technology in Hong Kong in order to adapt to the shifting economic and social developments and technological advances. This is easy for the younger generation, as they are well-prepared from learning the skill sets in school. However, it is extremely difficult for the older generation, as they have never encountered the technology for most of their lives. To address this, the Digital Policy Office of the HKSAR Government has regularly organised events under the "Smart Silver" ICT Outreach Programme for Elders since 2014. Non-profit elderly service organizations visit seniors in different districts of Hong Kong and organise activities to allow seniors to experience applying digital technology in their lives. The programme aims to promote the elderly's understanding of digital technology, so as to increase the acceptance of using technology among the elderly and narrow the gap between the habits of the elderly and the digitally savvy new generation. By teaching the elderly to use different services through online platforms, they can enjoy more conveniences in day-to-day life.

In the 2020 Policy Address, the Chief Executive proposed to "actively promote and support the development of art tech. We hope that the organic coming together of art and technology can complement each other, enhance Hong Kong's position in the international art scene, promote cultural exchange, and strengthen Hong Kong's position as an international cultural metropolis." The relevant bureaux reserved a total of HK$100 million under their respective funds or schemes for applications from those who intend to promote art tech. These funds include the Arts Capacity Development Funding Scheme, the Film Development Fund, and the Create Smart Initiative under the Arts Portion of the Arts and Sport Development Fund supported by the Culture, Sports and Tourism Bureau and the Technology Voucher and General Support Programme under the Innovation and Technology Fund supported by the Innovation, Technology and Industry Bureau.

In line with the general direction of the country's art development planning and Hong Kong's art tech development, Hong Kong's first Cantonese opera incorporating 3D projection was launched in 2019. It was a new screenplay, named *The Legend of Mulan*. 3D projection was used in the play to present on stage traditional Cantonese opera singing, dialogues, gestures, and actions integrated with art tech. The most unforgettable moment for the audience was the shocking avalanche scene presented on stage with projection mapping. This introduction of a new type of projection technology brought shockwaves and breakthrough to the Cantonese opera industry. Since then, Cantonese opera producers often incorporate projection in new productions; firstly, to introduce new elements and inject vitality into the traditional opera arts culture; secondly, to expand their audience base by attracting a new generation of audiences and promoting the art form with new technology; thirdly, to enrich the visual effect and add to the experience of enjoying live performances. Nowadays, various projection technologies have become indispensable to applying art tech on stage.

Projection technology on stage can be classified into ten different methods: multi-screen projection, dome projection, ground projection, multi-view projection, ring screen projection, projection mapping, fog screen projection, water screen projection (same type as fog screen projection), aerial projection and lastly, holographic projection[1]. Projection mapping and holographic projection are commonly used on Cantonese opera stages nowadays.

Projection mapping, also known as 3D projection, refers to the projection of images onto three-dimensional objects. For example, the fireworks show at Disneyland utilizes projection mapping to display animations and images onto the exterior walls of the castle. The same hardware settings can be used to project different animations. On the other hand, holographic projection is a virtual imaging technology that presents realistic three-dimensional images by manipulating the principles of light interference and diffraction. Holographic projection is more versatile in application than projection mapping, as it does not require a physical object to project onto. Rather, images can be projected onto a specified space, and the projection can be viewed from all angles, resulting in the most ideal three-dimensional visual effect. Holographic projection can produce various effects with diverse media, such as fog screen projection, water screen projection, and aerial projection. Fog screen projection is a holographic imaging technique that borrows the concept of mirages. Instead of the traditional projection screens, it uses a thin layer of water mist as the "screen". Particles in the air refract the light to display images. Actors can pass through the "screen" freely, achieving the virtual effect of people walking into the projected image. Fog machines are used to generate a large amount of fog on stage, and combined with the principles of aerodynamics, flat fog screens can be generated. When images are projected on the fog screen, they can form a three-dimensional virtual image on stage, providing a new type of visual enjoyment. The projected image

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1   The top ten most common projection technology: https://tenium.co/

will enable actors to look as if they are walking in the images, creating a realistic illusion.

In 2023, a Cantonese opera performance that combines innovative technology and traditional art, *Ziqi and Boya (Virtual Edition)* (《子期與伯牙》(虛擬篇)), co-presented by the Yeung Ming Cantonese Opera Troupe (Charity) Limited and the Yeung Ming Cantonese Opera Troupe, had a rerun with funding from the National Arts Fund as part of their supported projects in 2023. The performance was at the Grand Theatre of the Hong Kong Cultural Centre on May 28, 2023 with Lau Wai-ming as Zhong Ziqi, Li Qiuyuan as Yu Boya, Tang Mi-ling as Ziqi's wife Luk-yu, Shum Tsui-hung as Boya's wife Cheuk-kei, Lui Hung-kwong as Ziqi's adoptive father, and Ip Man-ka as Ziqi's adoptive mother.

The storyline originates from the tale of "High Mountain and Flowing Water", mentioned in the chapter of "The Questions of Tang" from the well-known Taoist classic *Liezi*. The excerpt is as follows:

> "Yu Boya was good at playing the Chinese zither (*guqin*), and Zhong Ziqi was a good audience. When Boya played the *guqin* to express the scene of climbing a high mountain, Ziqi would say, 'Excellent! How lofty like Mount Tai!' When he played to imitate flowing water, Ziqi would say, 'Excellent! How vast like the rivers and seas.' Ziqi understood everything Boya meant to express.
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> Boya was traveling at the north side of Mount Tai when he suddenly encountered a rainstorm and sought shelter in a cave. Feeling inspired, he took up his *guqin* and played two tunes: at first, he played the music of continuous rain, and then he played the sound of a mountain collapsing. Each time a tune was played, Ziqi could always grasp its essence. Boya thus put down his *guqin* in astonishment, saying, 'How wonderful! You understand all that I intend to express. How can I hide my thoughts from you?'"

This backstory for the Chinese idiom "High Mountain and Flowing Water" is well-known by many, and its characters and storyline are straightforward and simple. Throughout the years, there have been various Cantonese opera iterations of this story. Most of them focus on two key time periods as the main storyline -- when Boya met Ziqi, and when Boya visited Ziqi's grave. Examples include pieces such as *Boya Shatters the Guqin* (《伯牙碎琴》) sung by Ho Lai-Fong, *High Mountain and Flowing Water: Meeting the Confidante* (《高山流水會知音》) sung by Loong Koon-tin and Ding Fan, *High Mountain and Flowing Water: Eternal Friendship* (《高山流水萬古情》) sung by Chen Xiaohan and Li Junsheng, *Ziqi Meets Boya: Appreciating the Guqin* (《子期遇伯牙之聽琴》) and *Ziqi Meets Boya: Shattering the Guqin* (《子期遇伯牙之碎琴》) sung by Huang Weikun and Liang Zhaoming. However, the storyline is not elaborate enough to be made into a complete Cantonese opera performance that is nearly three hours long. According to the study done in *High Mountain and Flowing Waters, The Confidantes of Wuhan: Boya and Zhong Ziqi's History and Myths (Part 1)* (《高山流水知音江城伯牙與鍾子期的史事傳說

上編》), editors Pi Mingxiu and Zhang Xia referenced historical texts to prove that Boya and Ziqi were actual historical figures and were both from the Chu Kingdom. Ziqi was from Ma'an, in the Caidian District of Wuhan. He was not a woodcutter, but a music official who was well-versed in music theory and a sage who later lived in seclusion in his hometown. Though it is proven that the characters are not fictitious, it is true that their backgrounds and biographies are rarely mentioned in historical records. To use this short excerpt as the storyline of a full-length Cantonese opera performance, the success of the opera will rely solely on the screenwriter's writing and bold creativity.

The screenplay of *Ziqi and Boya (Virtual Edition)* is written by Cheng Kwok-kong. The opera combines many elements: technology, poetry, singing, music, and traditional Cantonese opera routines. It can be considered a multidisciplinary performance, each element creating its own challenges. In Cheng's writing, Boya and Ziqi met because of the sound of the *guqin*. They then became good friends due to their common interests, forming a strong bond. To include the six major roles of a traditional Cantonese opera, Cheng needed to add in the roles of the male lead (*sang*), the female lead (*daan*), the older male character (*sousang*), and the comical role (*cau*). Additionally, in order to enrich the storyline and create dramatic conflict, Cheng created roles for the wives of Ziqi and Boya, forming a double *daan* combination. This also clarifies the sexual orientation of the two male protagonists so as not to confuse the audience. Ziqi, played by Lau Wai-ming, is the main protagonist in this storyline, and Ziqi's parents are added to create an additional plotline about filial piety, which adds to the story by bringing in more touching emotions to the opera. In terms of the use of art tech, this performance incorporates 3D suspension technology, using mainly holographic fans and fog screens as the main methods of projection.

In terms of the stage setup, a wooden wishing tree was placed on the right side of the stage, with holographic fans installed on the tree trunk. The fans were already activated before the curtains lifted. As for the fog screen projector, two projectors were installed at the top of the stage, decorated with a backdrop of white clouds. The performance opens with singing and dancing, and the opera title is projected high up in the middle of the stage using the fog screen projectors, creating visual stimulation for the audience.

In the first scene, Ziqi went to the mountains to collect firewood because his elderly father was ill. He had great hearing and could transform all the sounds of nature into music. As a woodcutter, he was accustomed to physical labor, but he also yearned for the sounds of nature. The movements of nature were how he gained satisfaction from his simple rural life. When Ziqi passed by the wishing tree on his way up the mountain, an imagery of birds flying was projected onto the stage, hinting that Ziqi would gain something on this trip. As soon as he turned around, he heard the sound of the *guqin* in the distance. Ziqi searched for the source of the music, and once the light change was cued, Ziqi and Boya met each other. A government official boat made in wood was placed slightly to the left of the stage. The place where Boya sat behind the *guqin* was set under the fog screen projector, creating a surreal sense of vastness, depicting a foggy lake under the moonlight. When Ziqi walked to the lakeside, the instrument

string broke, and their eyes met each other. They felt an instant affinity once they started talking. Boya invited Ziqi to board the boat to discuss the art of the *guqin*. Ziqi and Boya sat side by side playing the *guqin*. They performed "High Mountain and Flowing Water" together, and the fog screen behind them projected the image of a waterfall. Audiences were able to enjoy the music and see the high mountains and flowing water. Coupled with sung lyrics to the music, the overall viewing experience was enriched and elevated.

Another scene that combined projection technology and traditional Cantonese opera was the fifth scene. The previous scene ended with Ziqi fainting after playing the *guqin* woefully. When the fifth scene opened, Ziqi appeared on stage and put a cloak on his wife, leading the audience to believe that Ziqi had not died. However, the couple then had a short conversation. Ziqi recited a few lines, including, "The time has come. I really have to go." "You will never be forced by me to listen to the *guqin* again." He left the stage after this, immediately leaving the audience with a sense of sudden change in emotion, from being surprised he was still alive to accepting that it was the spirit of Ziqi, who was reluctant to part with his wife. After Ziqi's departure, his elderly parents came on stage to discuss his burial place with Ziqi's wife. Ziqi's figure was projected on the white background, bidding farewell to his family. The family decided to bury him under the Wishing Tower, to wait for Boya to return and keep his promise of reuniting with his old friend during Mid-Autumn Festival.

The final scene was when the spirit of Ziqi was projected most vividly on stage with the help of technology. The wishing tree was set up on the left side of the stage, and the holographic fan was used to project Ziqi's appearance from the first scene, looking excited to reunite with Boya. An arched tombstone was placed in the center of the stage, with the middle of the tombstone empty, and a fog screen projector was used to project the words "The Tomb of Zhong Ziqi". The actor playing Ziqi was already hiding behind the tombstone, waiting for the moment to come on stage. Boya was shocked to learn of Ziqi's death, so he paid his respects at Ziqi's tomb. The spirit of Ziqi was projected alternately on the tomb and under the wishing tree to create the effect of a wandering ghost looming on stage.

Lau Wai-ming, dressed as a ghost, came on stage from the tomb opening, thanking Boya for coming to pay tribute. Ziqi reminisced about their close friendship and regretted that as they are now parted in life, he could no longer drink wine with Boya. When Ziqi sang out the lyrics about drinking wine, a wine glass was projected onto the wishing tree, representing how much he missed his old friend. Finally, when it was time for Ziqi to leave, Lau returned to hide behind the tomb, and a gradually disappearing image of Ziqi was projected onto the tomb. The projection faded out, showing that Ziqi had left the world after his wishes had been fulfilled from reuniting with Boya on the Mid-Autumn Festival.

Image of Ziqi bidding farewell projected onto the white screen background.

Dome-shaped tombstone with hollow centre, projecting "The Tomb of Zhong Ziqi" through a fog screen projector.

Lau Wai-ming came on stage from the tombstone dressed as a ghost; her appearance alternated with the projections.

This play combined technology and traditional Cantonese opera, and it was well-balanced as it focused on emotions and the storyline, supplemented with technology. The fog screen projection was the main technique used, and the holographic fan complemented it. For example, in the scene where the two protagonists met, projection was used to create a misty moonlit atmosphere. When Boya and Ziqi played "High Mountain and Flowing Water" together, a flowing landscape painting was projected on stage. The waterfall scenery complemented the friendship and the sound of the *guqin*, blending emotions into the overall stage conception. The outcome was a stage that was vivid and emotionally rich. The final scene where Ziqi's spirit and tomb were projected intensifies the eerie and desolate feeling in the rural mountains. When the actor playing Ziqi appears, their first encounter is reenacted through projections, reminding the audience of the duo's affection for one another, their mutual appreciation, and the moment when they prayed for their sworn brotherhood. The projection enhanced the dramatic effect of the performance, with the ending echoing the beginning of the play. The holographic fan on the wishing tree also played a catalytic role. The holographic projections, like the colorful birds on the Wishing Tower, Ziqi's spirit, and the wine glasses, were all imagery to supplement the actors' singing and acting, strengthening the emotions and enhancing the audience's resonance with the plot.

For actors, it might be more difficult to convey emotions when performing with projected images. Li Qiuyuan, who plays Boya, is an experienced Cantonese opera *wenwusheng*. He first trained with the Xiao Kong Que Cantonese Opera School in Zhanjiang, China and was the former head of the Zhaoqing Cantonese Opera Troupe. It has been years since he moved his career focus to Hong Kong, and he has starred in performances such as *Chung Kui* (《鍾馗》) and *Iron-Faced Judge* (《鐵面青天》), leaving a strong impression. There is no doubt about his accomplishment in the Cantonese opera performing arts. In the play *Ziqi and Boya*, Boya was a dispirited government official who was frustrated with his career. In many scenes, his sense of helplessness about the world could be seen. The helplessness and loneliness he felt from being incompatible with his wife were especially moving. Besides, in every scene with Ziqi, he showed the emotions of sincerity and affection that one has when spending time with a close friend. However, in the final scene where Boya visited Ziqi's grave, Boya was acting alongside a virtually projected Ziqi. The effect somehow gave the audience a sense of something missing in the interactions between virtuality and reality. On the other hand, when he was acting with the real Ziqi, his sorrows were much more obvious. This might be because Cantonese opera has just started to use art technology in the performances, and actors need time to adapt to the skills of acting with projected images. Performers will need to continue exploring and experiencing.

To conclude, the world faced the challenge of the COVID-19 pandemic in the years 2020 to 2023. During this period, governments implemented various epidemic prevention policies, such as isolation and social distancing measures, and closures of performance venues. As a response, a variety of online software emerged and transformed the public's way of working and enjoying entertainment. Most in-person activities moved online, and Cantonese opera

performances were no exception. Live broadcasts and performance recordings uploaded to online video platforms allowed audiences who had to stay home due to social distancing measures to still be able to watch Cantonese opera performances. Changes in our habits have led more people to better understand the digital world. Their deeper understanding allowed them to further explore and pursue the use of technology. Since the pandemic, it has been observed that the number of Cantonese opera live performance audiences has significantly decreased compared to before the epidemic. Some older opera fans no longer watch live performances due to various reasons. At the same time, it is a relief to see new audiences supporting Cantonese opera, some of whom first learned about this traditional performing art by watching online Cantonese opera performances.

The integration of art tech and traditional Cantonese opera production undoubtedly attracted more attention to Cantonese opera performances and its inheritance. In Hong Kong, which tends to be market-oriented, this change helps enhance Cantonese opera's competitiveness as an art form and is pivotal to growing its audience base. It is expected that the development of Cantonese opera in Hong Kong will face many challenges in the future, and the integration of art tech is inevitably one of the ways out. Resources are necessary to sustain long-term development. Funding, venue support, technicians, coordination with actors, and the audience's needs are all factors to be considered.

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