The Study on the Performance Characteristics of the Violin Tone in the Computer Music

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Abstract. With the social development, the era of progress, the science and technology make the things that were impossible in the past become reality. With the rapid development of electronic information technology, the computer music has been changed from technology and art. The computer music in the development of more than half a century, is not only a new thing of the development of the music, also in the future development of music in his creation has provided a broad heaven and earth and may, the traditional mode of music appreciation and music creation and music performance system also brings great revolution and impact. So, enjoying the violin and traditional computer music of a violin tone, people will feel that there are similarities between the two kinds of sound, but there are a lot of differences. This article will discuss the performance characteristics of the violin tone in the computer music.

Introduction

Contemporary society multicultural fusion, mutual penetration, classical and modern is relative and contradiction of the related, do well the respect and the development relations, violin art and other related disciplines in the integration of art and technology, to the development history, situation, let it blossom a more flowery glorious. In the social development, the music is in the development, also in the development on the violin. To boldly to innovate the traditional music form, therefore many consciousness ahead of musicians have made positive efforts and attempts to Richard Clayderman with modern techniques and music, interpretations of classical piano. Yanni will elegant classical symphonies and flowery modern vocal music, cleverly combined; Chenmei will be beautiful, sexy and classical music Rou together, create a new concept of the music on the violin. The development of violin art, not only should inherit the traditional, more to the development, innovation, attracting hundreds of long. Emerging things appear constantly in modern society, there are more quality of keeping pace with The Times, so that a wider audience to accept and violin art. We should encourage and support the new form of violin playing, the integration of classical music and modern multimedia technology. Multimedia audio combination of violin performance is violin, computer music, the triple combination of video technology, is a kind of comprehensive three-dimensional audio-visual feast.

The Connotation and Characteristics of the Computer Music

Computer Music (Computer Music), commonly known as "the Computer Music", from the broad sense, refers to the digital circuit with CPU work related to the Music, Computer Music in narrow sense refers to the Computer Music works. MIDI forms the core of computer music, music works are in general computer by computer and MIDI. Advances in modern technology, computer technology rapid development, make the human material life and spiritual life has changed dramatically. In the field of music, with the more perfect electronic Musical Instruments and digital recording equipment, computer, this technology revolution inevitably a darling of the birth of stepped into a new world of music.

(1) The extensible force potential of tone and style

Computer music in addition to GM standards including 128 kinds of general timbre, GS, XG standard tone, an external audio source and softer sound wave table, and the tone can also easily by modifying the produce of new sound. Inexhaustible sound bring technique's potential is unlimited, either to realistic imitation of traditional band, can also create a new style from the traditional music.

(2) The changes

Modify and edit computer music can be said to be a piece of cake, is the traditional music of dust, it could theoretically provides the perfect music

(3) The effect of real-time inspection ability

Created by the traditional methods and testing the effect of the music works quite slow, even never detection. Probably never inspection work actual effect. The effect of the computer music can be instantaneous, can immediately to modify unsatisfactory.

(4) The fusion

Computer music and traditional music is not incompatible relations, they can be very well by means of audio and MIDI ways together, mutual supporting music building.

The Difference of the Violin Tone Performance Characteristics between the Computer and traditional music

(1) The principle of voice

From the point of voices, any voice has three basic elements: audible sound body (Driver), connect body. Is the real musical instrument sound body responsible for voice device, traditional violin sound body is the bow and the strings; the friction between the connecting body is connected to the sound body and resonance body part, responsible for the voice adjustment and resonate with the interactive relationship between them, the connection of traditional violin body is jean code; resonator is to speak when the body to generate sound, let the sound resonance vibration in a fixed space, generally refers to the special structure of the instrument, the traditional violin resonator is jean body speakers. Therefore, traditional violin tone mainly through bow strings in the friction force on the string vibration, and then after erect on the front panel of code is passed to the speakers, eventually make piano body resonance speakers. This includes a lot of complicated right hand skills, so the traditional sound is completely by the people's actual violinist.

Figure 1 The performance characteristics of the violin

And the violin tone in computer music is derived from the basic waveform storage on a chip, under the condition of existing technology; there are two ways to get the waveform. One is for the recording sampling instrument. A sampling is first on the scene of the play the tape, and then acoustic waveform is converted into a series of binary data to quantify, finally, the analog audio into the process of digital audio. Implementation of this process is used, the A/D converter is. Sound designer's taste, the technology of the players, the sampling precision, noise reduction, the use of recording field, acoustic technology such as the factor will affect the voice quality is good or bad. 2 it is to use physics technology to analyze the sound spectrum of sound and sound waves, and then based on the direct synthesis of timbre. Various electronic sounds basic is to rely on the technology synthesis and specific synthesis methods including: modulation frequency modulation, amplitude modulation, circular, addition, subtraction, particle synthesis, formant synthesis, voice synthesis, waveform shaping, and physical modeling and so on. The way so many electronic musical instrument of waveform, may produce different waveform is almost infinite; this to the formation of sound personality has provided a broad space.

(2) Compared with the change of the tone

Traditional violin because of its elegant and charming voice and superb performance skills and was deeply loved by people, some even compares its adult voice sounds beautiful. In fact, the violin can stand out in many Musical Instruments, and the ability to express the profound emotional connotation, not only because of its close to the human voice, and, more importantly, it has very rich timbre effect and exquisite sound change. Therefore, the tone is very traditional violin art one of the important means of emotional expression.

Traditional violin tone is determined by the musicians to play, so when the player with the ups and downs of the music melody is affectionate to play music, even with a CD player or other player to listen to, we also have immersive feeling; If the scene is to listen to words, so the audience were deeply moved by the wonderful tweedle more easily. A skill will because playing method and produce a variety of different timbres, for example, the existing rubbing sound skills in three kinds: sounds, wrist and finger knead, arm. If only use the same kind of bowing to play the three different kinds of sound, the sound is different, let alone use different bowing to play different sounds, the result is protean. So, people in the appreciation of music after just can have the feeling of "lingering" three days. But traditional violin performance due to factors such as environment, mood, and state constraints sometimes will inevitably be some human error, even the master musician, may also is inevitable.

And the violin (play) in the computer music tone is set in advance, it won't be any environmental conditions limit, everything can be completed in accordance with the previously set to, at the same time also can guarantee its desired effect. It can follow one's inclinations, specific performance on speed, strength and rich sound changes and so on, these are all in the real play is not so easy to do. Player playing a tune the fastest speed in the limit of development, but it's like athletes to break the world record, always in the range of certain human limits; he can't be real "superman". While in computer music, violin tone can not subject to any restrictions to transform different timbre, transform different speed, even to "light", it's clearly a violin of traditional. But the only fly in the ointment is that the computer music of a violin sound is coming through the machine, the sense that gives a person a little "distortion", seems like, and there is no emotional expression and communication between people, so always let a person feel melody stiff, sounds like there are some not true feeling, can't really impress people, even the works of some of the more successful also this kind of problems. So if you want to control all sorts of different timbre due to skill changes is more difficult, this may be the computer music sound technology needs to break through the key. But with the constant improvement of the sampling technology and equipment constantly updated, the development of its timbre is also gradually perfect. In the latest product of timbre, VIENNA SYMPHONIC LIBRARY development HORIZON series of string solo voice quality sampling is more complete and comprehensive. Its founders HERB HUCMANDL know very well create a string solo voice quality sampling work difficulty, at the same time, he also know that only constant pursuit of the perfect voice quality can satisfy the requirement of the modern composers eventually.

So he is the first experimental spent more than a year in the recording, collecting material from playing live in concert, sum up experience, and choose the best from among the musicians of Vienna instrument, so just get the final recordings, and then converted to digital audio by equipment. Small orchestra orchestral tone database of Vienna sound, it has good performance details and variety of texture effects, such as string of legato, glide legato, bow, pizzicato playing skills, can be used in all kinds of music style, than before more perfect fusion of timbre, suitable for a variety of creation of music works.

Violin performer of playing in front of an audience relaxed freely, to be able to do when one skill, and appropriately to full play. To feel in the performance to the audience in an emotion, conveying a kind of artistic realm. To play with passion and creative, have a kind of let the music flow of passionate desire is in the air, and can let the audience has a full range of sensory experience. On stage but also pay attention to natural and unrestrained natural, natural and graceful of the typhoon, including step down on gait, curtain call to the audience, and play in the process of action or in a longer music the door gap, the expression of feeling on the stage to coincide with the content of the music performance emotion. Raising your hand is cast sufficient between movements, expression, eye contact, body movements to match the natural right. On the stage of the actor and the audience is in the interaction between the audiences, performers can up and down through the stage, locked by western classical style of violin music, suddenly turned into a dance here. Players make the connotation of the music itself, emotions, by playing music with proper body movements. Players to use music to play down the premise of performance to impress their impress the audience, the audience on the vision and mind received full enjoyment and moved on.

Summary

Multimedia audio combination of violin playing concept is a positive intercultural consciousness, is also a multicultural understanding and communication. This new playing form of violin has its external structure, and also its inner link, and formed a kind of harmony of the three-dimensional entity. Through the inspection and we will continue to improve the development in practice, this innovative performance art form will be more full of vitality, more for the public. Empty sea, tolerance is a great, take the essence of, take the dross, and steps of The Times will be the future violin innovation motivation and direction.

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