

Wanjun Yang, Xiyue Zhang

东方语境下中国电子音乐创作的文化特征 – 以陆敏捷两首电子音乐作品为例

The culture characteristics under oriental context of chinese electronic music composition – take two pieces by Lu Minjie as examples

Sichuan Conservatory of Music, China

yangwanjun@163.com / 379331752@qq.com

Abstract

The electronic music technology and theory have developed well since last half century. In the past 30 years, Chinese composers not only studied the composition ideas and skills of western music and electronic music, but also tried to combine the national traditional culture with western music culture, they composed many novel and outstanding electronic music works. In this article, the authors select two electronic music pieces, *Flowing Water and Distortion* and *The Watching Tuvas* of Chinese female compose Lu Minjie. The first piece won prizes in international electronic music competition. Based on the analysis of cultural background, composition skill and sound design, etc., the authors try to explore the characteristics of electronic music composition under Oriental Context.

Forward

Electronic music is the result of development of art in the new era, it combines the characteristics of technology and culture in one. So electronic music has the advantage inborn of arts presentation in the stage of multicultural integration and influence, it is one of the artistic expression with specific character at current era. The electronic music technology and theory have developed well since last half century. In 1980s, Chinese composers listened to electronic music for the first time, and some of them began to study electronic music composition techniques and theories, after more than 30 years hard working, they grown up and became professional electronic music composers. In the collision of traditional culture and modern technology, the Chinese composers tried to seek the composition inspiration, accumulate the source materials in national arts and traditional culture, they developed new ways which different from traditional western music conception and expression mode, and fused the idea and intention of traditional culture in their blood, the Chinese composers formed their unique composition techniques and composed many novel, meaningful and deeply electronics music works with Chinese characteristics, with these works, they exhibited the artistry of electronic music under oriental context.

In a series of outstanding electronic music with original ideas and distinctive tones, the using of Chinese traditional culture essential factors shows the consciousness of culture among the Chinese composers. Absorbing the music ideas from the abundant Chinese national music initiatives is the cultural perspective of the composers. As they studied the composition ideas and skills of traditional western music and contemporary electronic music, the Chinese

composers explored new ways in electronic music composition with unique ideas at the same time.

Among the contemporary Chinese composers, some outstanding female composers caught the attention of the world, the female composers shown the electronic music works with individualization, nationalization, and artistry to the world. Wang Xuan, Zhou Qian, Feng Jian, Qin Yi, and Lu Minjie are representative ones who are active presently. They showed the particular perspectives of female composers in their electronic music works, their composition and research received great interests.

Lu Minjie is the most active female composer at present. Her interactive piece *Flowing Water and Distortion, for Gu Qin and Max/MSP* won Pauline Oliveros 1st prize in 28th IAWN (International Female Composer Competition, Electronic Music & Multimedia Music Group).

In SMC/ICMC 2013 (Sweden), there were just 2 Chinese pieces selected, Lu Mingjie's *the Watching Tuvas* was one of them. *Reborn, for violent earthquake victims of 12th May 2008* is the only Chinese piece chosen in 1st Sonic Rain Electronic Music concert series (USA) in 2011. Now she mainly researches in cross-media art and interactive music.

Flowing Water and Distortion, The Watching Tuvas are 2 representative works of Lu Minjie. These 2 pieces rooted in Chinese traditional culture, they shown the distinctive characteristic and individuality in music composition and technique innovation.

This paper focuses on these 2 pieces, analyses and discusses the presentation of culture artistic conception, the application of composition techniques, and sound design method, and find out the features how she composes electronic music under the oriental context.

Flowing Water and Distortion, inheritance of Chinese traditional culture

Flowing Water and Distortion was composed in 2009, the duration is 6 minutes, it is a real time interactive music piece for Gu Qin player.

Motif composition and context construction

In 1970s, United States launched space probe "Voyager 1", one of its main mission is to explore the intelligent creatures of outer space. The probe carried a gold-plating gramophone disc, different sounds on the earth were recorded on the disc, people hopes this disc may express the civilization of the earth to the outer space intelligent creatures, a Chinese famous Gu Qin piece *Flowing Water* (Liu Shui, 流水) was recorded in the disc.

Lu Minjie was inspired by the event of Voyager 1, and composed the piece *Flowing Water and Distortion*, the fundamental idea was came from Gu Qin, which was the representation and symbol of Chinese traditional music culture.

Qin is also called Gu Qin, in which "Gu" means "ancient" or "old" literally in Chinese. Qin, a seven-stringed zither, is China's oldest and most historic plucked string instrument, with a history of more than 3000 years. Qin is an important culture symbol in Chinese music culture, especially in Chinese Han nationality culture, Qin has very important place in music culture, even in present days, Qin is also the symbol of Chinese traditional music. *Flowing Water* is a representative piece of ancient Qin piece, the piece was based on a famous Chinese allusive *High mountain and flowing water* (高山流水), it conveyed Chinese bosom friend culture (知音文化). The piece describe the mountain, water, friendship, bosom friend, loyalty with the

sounds of Qin, reflects the Chinese bosom friend culture and longing for the beauty of nature. Lu Minjie's *Flowing Water and Distortion* is based on the instrument Qin and piece *Flowing Water*, she used the artistic language of electronic music, composed a variation for Qin and *Flowing Water* in different form, interpreted the Chinese traditional culture in modern technology and culture mode.

Firstly, in Chinese culture, the shape and structure of Qin have the symbol of time and space, it corresponds with the outer space scene in the *Flowing Water and Distortion*.

Secondly, the composer considered that Voyager 1 carried the Qin piece *Flowing Water* to express the civilization and peace to outer space intelligent creatures is so meaningful to human being. The expectation of people hopes to find some other intelligent creatures and make friends in the vast universe is accord with the idea of *Flowing Water*, in the piece *Flowing Water and Distortion*, the composer extended the idea with the interactive electronic music ways.

Thirdly, the mood of longing for natural beauty in *Flowing Water* was maintained in the sounds design in *Flowing Water and Distortion*.

Finally, the composer analysed the features of tune and melody of *Flowing Water*, she used special playing methods and composition techniques of Qin, and made Qin sounds standing for the ancient sound and civilization, the sounds and effects which were modified by electronic ways, and computer software responding to the modern technology or civilization. During the performing of the piece, the Qin player and the computer controller had a conversation in musical ways, they showed a scene of conversation between ancient eastern civilization and modern western culture.

Sound design of the piece

The sound materials were consisted of two parts: instrument sounds of Qin, and electronic sounds. The instrument sounds came from the real time playing of Qin, the electronic sounds were background proceeded by computer and program which retrieved the sounds of Qin playing with microphone in real time.

The sounds of the instrument

In the *Flowing Water and Distortion*, the player uses both traditional skills and contemporary skills of Qin. As the solo instrument of the piece, the timbre of Qin plays an important part as dominant factor and runs through the whole piece. Qin is the most historical national musical instrument of China, the timbre of Qin is vigorous and atmospheric, the unique tone is the sound symbol of Chinese culture, and deeply rooted in the heart of Chinese people all over the world, the timber of Qin in this piece is the core sound material which build the framework of the oriental context. During the playing, the skill “Mo (抹弦)” produces a special string noise, which add the specific character to the piece; the skill “Bo (拨弦)” means pluck the string quickly, the timbre of Qin sounds dry and distortion, it makes the piece have more musical tension; the skill “Jinfu (进复)” and “Huayin (滑音)” means slide the finger on the strings, and plays continuous glissandi. With the changing of tempo and dynamics, the music texture which processed by the computer programs became more thick, builds special hue of space, it expresses a special quality of inter spaces with contemporary prospects. The skills of Qin in this piece may consult table 1.

记谱	传统古琴演奏技法说明	记谱	传统古琴演奏技法说明
	四、五、六、七弦和一、二、三弦分别由左手和右手同时弹拨空弦。		“抹弦”，演奏者左手在古琴龙龈右方用力拍下，发出击打声并从低徽位往高徽位抹过琴弦，制造出弦噪。
	古琴演奏法中的“拨”		古琴演奏法中的“刺”
	弦噪效果声音，音色中有颤音效果。		右手弹拨琴弦时，左手做“进复”
	演奏者左手按压琴弦，从低徽位往高徽位抹过琴弦，制造出弦噪。		演奏者左手按压琴弦，从高徽位往低徽位抹过琴弦，制造出弦噪。
	左手按弦，右手采用古筝演奏中的“摇指”，右手弹拨过程中，左指从高徽位往低徽位		左手按弦，右手采用古筝演奏中的“摇指”，右手弹拨过程中，左指从低徽位往高徽位
	古琴演奏者右手“滚拂”演奏，同时左手手掌按压琴弦并逐渐减小压力直到完全离开，线条的疏密代表滚拂快慢的程度。		
			滚拂演奏同时，左手在一弦上滑动，箭头向下表示左指移动方向由高徽位往低徽位移动，箭头向上表示左指移动方向由低徽位往高徽位移动，且滚拂弹拨到一弦时要强调出音头。

Table 1: The skills of Qin in *Flowing Water and Distortion*

The sounds of modified in electronic ways

There are 2 kinds of electronic sounds: prepared samples which would be triggered during play, and real time processing sounds. The electronic sounds part runs through the whole piece, and twirls with the part of Qin, the two parts interplay and affect each other.

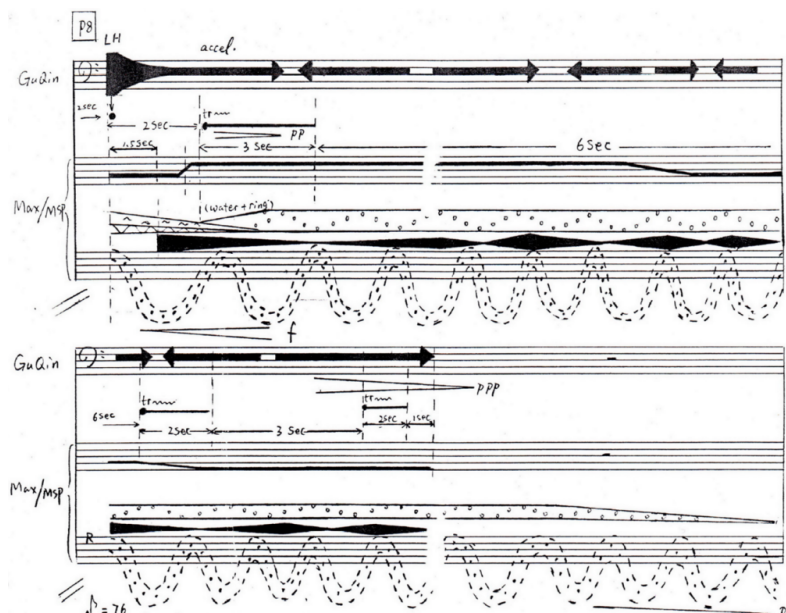


Figure 1: Score fragment of *Flowing Water and distortion*

As figure 1 says, from measure 9 to 12, the electronic music part plays crescendo, the skills “Gunfu (滚拂)”, “Yaozhi (摇指)”, “Bo (拨)”, “Moxian (抹弦)” was used alternately, with the sequential of Qin part, the Qin player successively triggers the pedal 4 times and play the prepared plucking string samples, the sounds of Qin played and processed by the computer programs in real time overlying together, the sounds becomes thick, and comes the first high

point of the piece. The composer set some part in silence intentionally, and make more space for electronic part.

The Qin player interactive with microphone, MIDI controller, Max/MSP patch. In this piece, Qin is the symbol of oriental context, the computer and Max/MSP patch represent the contemporary culture and conflict with the different cultures, the conversation between Qin and computer is an important way to express the theme of culture of the piece. The designing in the piece, avoid the thin sounds of solo Qin. Such as the measure 19, the player plays the Qin with “*Gunfu*” skill to produce dense notes, it represents the scene of flowing water; at the same time the computer processes sounds to extend the expressive force of the sound of flowing water. The sounds of Qin and processed sounds express the procedure of conflict, conversation, mix together, and unify.

The interactive of the piece could be divided into 3 main sections and layers: 1st section, (measure 1~12), the prepared samples interactive with the Qin played by ordinary skills, the player triggers the pedal controller freely to determine the time point of the samples to be played, it was controlled in section, but it still controlled with improvisation and random; 2nd section, (measure 13~25), the microphone picks up the sounds of Qin played with contemporary skills, the microphone signal was processed by Max/MSP patch, the processed sounds were related with the sounds of Qin, they sounds were repeated, overlay, and become the form of canon. The sounds of Qin and processed sounds appeared alternately, they supplemented each other simultaneously. 3rd section, (measure 26~29), the prepared samples and the real time processed sounds of Qin appeared at the same time, they act as the variation reappear of the sound materials of Qin, they appears alternately, as the conversation. In this section, the original sound characters and performing skills were kept, the use of electronic music techniques extended the space of the piece. The player in total command of triggering the prepared samples, the samples could appear in different sections, they enhanced the expression of the player, and also act as the supplement of the instrument part.

Except the interweave action with Qin, the electronic sounds expressed the control of the timbre structural mechanics. Electronic parts also push the piece forward with parallel, overlay, cross methods, the part enriches the gradation of the structure, enhances the change of the spectrum, alters the structure of the dynamic, constructs flexible space in sound field, represent the expression of the piece.

The Watching Tuvas, ponder over the protection of national culture heritage

The Watching Tuvas is 4 channels acousmatic electronic piece based on the hoomi of Tuvas, the piece is about 10 minutes.

The seek roots theme of the nation on horse back

The Tuvas is the oldest nomad in China, they are the descendant of the soldiers followed Genghis Khan went on the expedition western world who were left and intermarried with the local indigene. Tuvas spread mainly in northwest China now, Kanas area, Xinjiang Province is the habitation of Tuvas which preserved unabridged and most historical. Hundreds of years, Tuvas cultivated its traditional tribe structure and strong clan society blood relationship conception, and the habits and customs are also maintained primitive states.

However, the culture of Tuvas was assaulted by modern civilization violently, the culture traditions is fading, and urgent needs to be protected.

Music activities is not only the main form of daily work and entertainment, but also has dominant position and symbol meaning in the clan socialization and cultural ceremony. Hoomi (呼麦) and shoor (楚尔) are very distinctive singing and performing forms, also are living fossil of Chinese national folk music, have high artistic value.

The composer went to Kanas area of Xinjiang Province to collect folk songs before the composition, she selected the most representative features of Tuvas music, hoomi and shoor as sound materials and cultural symbol, and make the piece the *Watching Tuvas* shows the importance of national cultural elements in contemporary Chinese electronic music.

The composer chooses the iconic timbre of hoomi and shoor to represent the culture of Tuvas, and chooses the tune and melody represent the anxiety and thinking of the degeneration and extinction of minority nationality culture under the invasion of contemporary culture.

The music is the artistic form which is skilled to express inner emotion of people, the piece *Watching Tuvas* take the particular musical elements of Tuvas as the main clue of composition, the elements are the spirit of Tuvas seek roots of nationality rely on.

Deploy of music idea and logical association

The piece *Watching Tuvas* is a typical acousmatic electronic music work which mixes Chinese minority national culture and contemporary culture. The composition method is organizing the processed original materials, the piece has clear logic, completely structure and form. It can be divided into 3 correlative parts: Part A (from beginning to 1'42", from 1'42" to 4'26" is the repeat of part A), Part B (from 4'37" to 6'48"), and Part C (A+B, from 6'49" to 9'55"), the structure of the piece may be demonstrate as figure 2:

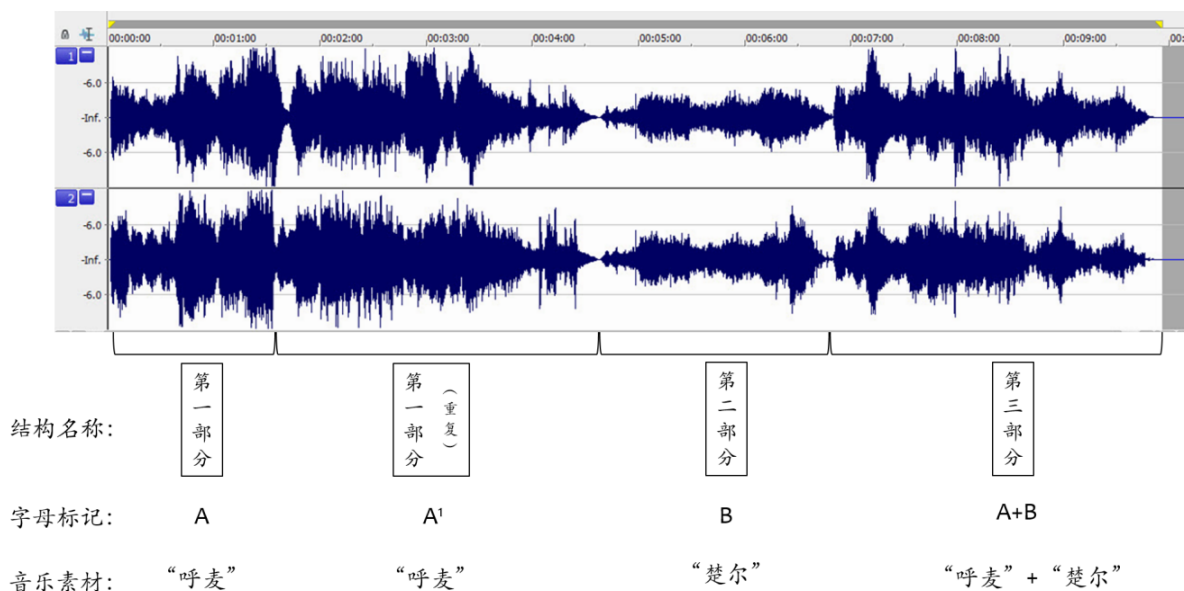


Figure 2: The form structure of *Watching Tuvas*

The composer used different processing techniques in different sections, and different sound characters indicate the development idea of 3 sections, they are exposition, comparison and recapitulation, as fig 2 shows. Section A is mainly based on the materials of hoomi and shoor,

they appeared alternately, laid the fundamental mood of nationality at the very beginning of the piece. The part of shoor was not developed excessively, preserve space for the following section. Section A1 is variation repetition of original section A, just like the decorative variation in classical music. Section B takes the materials of shoor as core materials, contrast with section A with playing techniques, emotion, dynamic, and timbre, and build the development part of the piece. The last part was not designed like classical works, the composer mixed the core materials of section A and B to build recapitulation elements, with the technique of counterpoint and polyphonic, processed the materials with different filters and effects, got different variation effects, the main theme of the piece was condense and recapitulation again.

Selection of core sound materials and design

In the *Watching Tuvas*, the composer wants to represent the state of original civilization by the sounds. During the procedure of electronic music composition, the composer not only needs to choose the sound materials and cultural elements with distinctive characters, but also needs to process the materials. So the original materials may get more new artistic characteristic and elements, add new ideas to the form and meaning, create new artistic essential factors along with the procedure of preserving the culture. When the composer chooses the materials for *Watching Tuvas*, she chose 2 kinds of typical sounds of Mongolian nationality, hoomi and shoor.

The singing of Tuvas succeeded the hoomi of Mongolian, the singer controls his respiration to vibrate the larynx and make sound, then opens the vocal bands, widens the throat, lifts the velum, controls the shape of tongue and mouth, so the oral cavity resonance with the larynx vibration, then produce two different tones at same time. The composer integrated polyphonic thinking into the sonic design of electroacoustic music, she used the electronic musical ways to process the sounds produced by hoomi, and many new sounds were created by processing the original sounds of hoomi with effects. For example, the sounds of hoomi were processed by filter, then got different parts of hoomi sounds, the composer rearranged all the sounds in form, then modulated the sounds to get new sounds, then try to place the sounds with the idea of counterpoint, so the sounds with different spectrum and shape may work together.

The shoor is a traditional Mongolian musical instrument, made of a kind of local grass, which is like a hollow pipe and regarded as a living fossil of minority nationality instruments. There are 3 holes on the pipe, not like the other kind of pipe instruments, when player blows shoor, he opens his mouth, makes the larynx vibration, and the pipe resonances with it, the shoor will make a sustained sound, the player control the tongue to play the melody part, so shoor is capable of producing multiple tones at same time.

The materials of shoor were used as comparison materials in the piece, the processed shoor materials worked as soprano part in different sections, compared with the part of hoomi. For example, with the way of stretch and shorten, the original shoor materials were processed into different new materials, they were used in different sections with the other materials, so the materials of shoor may be presented with different tension.

The electronic modifications in the piece

The *Watching Tuvas* was composed with 3 types of sound materials: the original sounds of hoomi and shoor, the modified sounds of hoomi and shoor, and the other sound materials. The main composition technique is add the modified electronic sounds to the fundamental sounds

of original vocal and instrument sounds. The special design created new timbre and sound space, extended the meaning of the piece, made the piece more contemporary. The 3 types of sound materials play different roles in the piece and work with different functions, the vocal sounds and instrument sounds have a conversation, and the electronic sounds provide an effective backdrop for the special characters of singing and instrument playing, that is, single sound source produce multi voices.

The composer used GRM Tools, Waves, and the patch designed in Max/MSP to process the sound materials. Mainly used HPF, LPF, Granular synthesis, resonance, phase, reverse, vocoder effects, etc. The original materials were processed by these FXs and plugins, created abundant new materials, expanded the types of the materials, it represented the artistic language characteristic of electronic music.

Such as in section A, besides the original materials of hoomi, also used the materials that processed with filter, granular synthesis plugins, then added pan and reverb in space design, it represents the sounds on the abroad grassland; during 1'42" to 4'36", the theme of hoomi reappeared, echoed with the theme in earlier passages, it represents the history and cultural tradition of Mongolia transmitted through successive generations; the reverse processed materials create special hearing feelings, and reverse is a typical processing technique in electronic music composition; the original sounds of hoomi were processed by filters to get new sounds of different bands or to separate the different voices and rearrange the various timbres, and then the composer placed the materials at distinct position of the parts on the timeline to form the special sonic "counterpoint."

Conclusion

The combination and spread of new technology, new idea and music culture are inseparably intertwined. The composition of electronic music needs to preserving classical national culture, and needs to accept and absorb new technology inevitably. Electronic music is the typical artistic medium which integrated traditional culture and modern technology in the present age.

After the dissertation of this paper, we can see that when Lu Minjie composes the pieces, she tries to seek inspiration and culture sustain point in the national culture and folk culture, and chooses the materials of national music as the elements of composition: in the piece *Flowing Water and Distortion*, composer chooses Qin, ancient piece of Qin, and classical allusion as the culture fundamental of the piece, with the help of electronic music technology, constructed the specific oriental context of the piece.

In the piece *Watching Tuvas*, composer chooses hoomi and shoor as the symbol of national culture, combine new technology and aesthetical elements of eastern and western world, rebuilt national artistic conception with individualized artistic vocabulary. The consciousness of the composition may root the piece into national culture, the application of electronic technology provide a new platform for inheritance and promotion of traditional culture. It is a new orientation for contemporary Chinese composers to compose pieces with Chinese national characters.

References

LU Minjie (陆敏捷), “The fuse of new media music composition and Chinese traditional culture, take *Flowing Water and Distortion* as example”, *Contemporary Literary*, 23(1), 2015, pp. 151-154.

陆敏捷. 谈新媒体音乐创作与中国传统文化的融合——以作品《流水与变形》为例. 当代文坛, 2015, 第23卷第01期:151-154.

WANG Lin (王林), “The aesthetic pursue of Chinese electronic music composition. Orchestration”, *Journal of Xi'an Conservatory of Music*, 21(3), 2013, pp. 87-90.

王林. 中国电子音乐创作的审美追求. 交响-西安音乐学院学报, 2013, 第21卷第03期:87-90.