THE AESTHETIC AND TECHNICAL DISCUSSION FOR THE PIPA AND ELECTROACOUSTIC MUSIC "IMAGE I"

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ABSTRACT

Although contemporary music composition follows new technology and sonority, from an aesthetic view, the ancient Chinese instrument pipa is perfectly matched with the electroacoustic music, due to its alienation to most of the modern audience. This paper introduces Chih-Fang Huang's piece "Image I" for pipa and electroacoustic music composition. The unique articulation of the pipa allows its rich timbre be properly integrated with the various electroacoustic sound samples. Some composition and analysis techniques for both pipa and electroacoustics will be introduced, and the aesthetic thinking will be discussed in the paper too.

1. INTRODUCTION

Pipa, as shown in Fig. 1, is an ancient plucked-string instrument which has more than a two-thousand-year history widely propagated via the Silk Road to many countries including Persia, China, Japan, and India with their own unique pipa performing techniques and conventions [1, 2]. The wide-ranging scale of the pipa can produce sonorities with various timbres and tensions. This paper uses the author's composition "Image I" for pipa and electroacoustic music as an example to demonstrate the way to integrate an ancient Chinese instrument with modern electroacoustic music to compose a novel technique to fuse both of the extremely different ends. Many of the computer music techniques [3, 4, 5] of sound synthesis and sound transformation are used to generate the electroacoustic sound with pipa. The aesthetic thinking of the pipa fused with electroacoustic music composition includes not only the contemporary music techniques, both also the ancient Chinese Taoist philosophy: "the great sound seems soundless" [6, 7], as well as Chinese Confusion Gagaku music [8, 9]. The aesthetics of "Image I" is also derived from the concept of "the greatest sound make little sound" specified in Lao Tzu's literatures [10] two thousand and five hundred years ago, to engage in contemporary music composition with deeper thinking.

Figure 1: The Photo of Ancient Chinese Musical Instrument "Pipa" (Performed by Eu-Ju Lin, at St.Annen Kirche, XIX Randspiele Zepernick, Berlin, Germany, 2011)

2. THE COMPOSITION METHOD

The piece "Image I" was composed by Chih-Fang Huang in 2011, and has been successfully performed by pipa performer En-Ju Lin with electroacoustic music in Cologne and Berlin music festivals respectively, in July 2011. The pipa fingering techniques used for "Image I" composition include "Tan", "Tiao", "Double Pluck", "Wheel", "Sau and Fu", "Harmonic", "Push and Pull", "Tap", and "Change Position", as shown in Table 1.

Pipa Technique	Description
Tan Pluck	Use right-hand index finger to pluck the string from left to right
Tiao Pluck	Use right-hand thumb to pluck the string from right to left
Double Pluck	Two fingers pluck inward or outward
Roll	High speed Tan and Tiao
Wheel	High speed pluck with fingers rotation (tremolo)
Sau and Fu	Pluck four strings at the same time
Harmonic	Harmonics in various positions
Push and Pull	Pitch shift with a minor third interval or a whole tone interval
Tap	Pitch shift with a whole tone
Change Position	Change the position of strings, like noise

Table 1. Pipa Fingerings for "Image I"

The electronic sounds include environmental recorded sound, Chinese percussion, flute whistle, and Chinese Confucius Gagaku sample, etc.

Based on the empirical musicology method [9], we analyzed various pipa fingering samples based on inharmonicity [11, 12] to classify the noise level. "Image I" is composed from low-level to high-level, then back to low-level of the noise, including both pipa and electronic sound.

SECTION 1: INTRODUCTION (0" – 39")

Section 1 combines both electronic sound and the modern style and pipa dissonant major seventh intervals expressing the ancient image in an extremely different contrast. As shown in Fig. 2, the slow tempo of the beginning section makes the piece create an oriental atmosphere with tranquility.
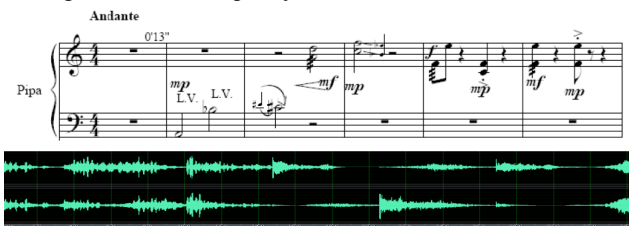

Figure 2: The Beginning of "Image I"

SECTION 2: TRANSITION 1 (39" – 1'51")

This section is mainly based on pipa's natural harmonics and perfect fourth intervals. The electroacoustic part gradually transforms its electronic style into an ancient atmosphere with drone. Refer to Fig. 3, and the major-seventh interval theme is also shown in this section.
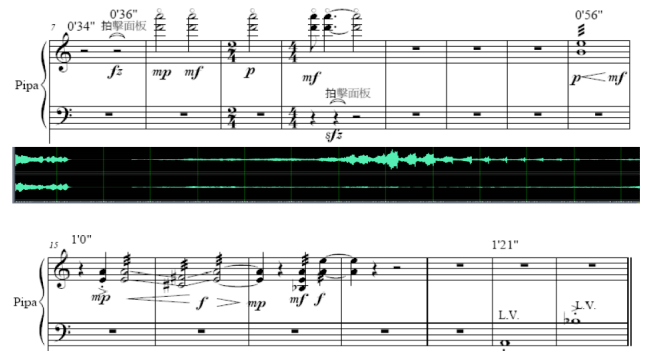

Figure 3: Transition 1 of "Image I"

SECTION 3: TRANSITION 2 (1'51" – 2'38")

This section shows more tensions with "tap" sound and the continuity of the dissonant intervals in both horizontal and vertical directions based on pipa theme development, as shown in Fig. 4.
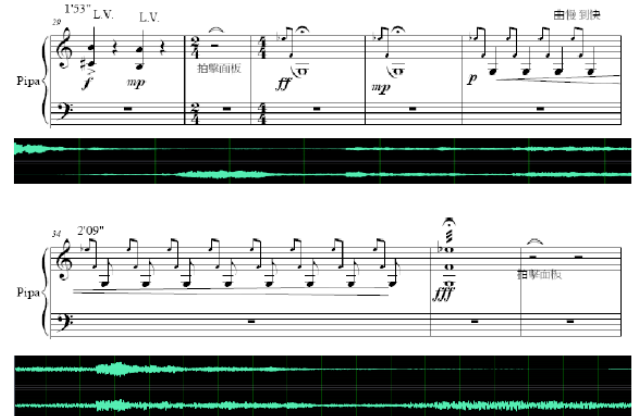

Figure 4: Transition 2 of "Image I"

SECTION 4: "RESOLUTE" THEME (2'38" – 3'14")

In this section, as shown in Fig. 5, pipa's resolute theme with tremolo, "tap" sound, and electronic materials, construct an image that hints at struggling in the environment.
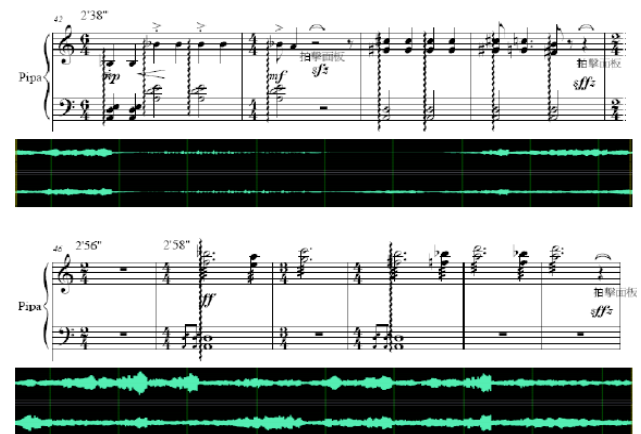

Figure 5: "Resolute" Theme of "Image I"

SECTION 5: "WHISTLE" THEME (3'14" – 3'35")

As shown in Fig. 6, the entrance of the pipa's fast fingering and the high-frequency "whistle" sound of the electronics makes this section become more unstable to evoke a "fight" image.
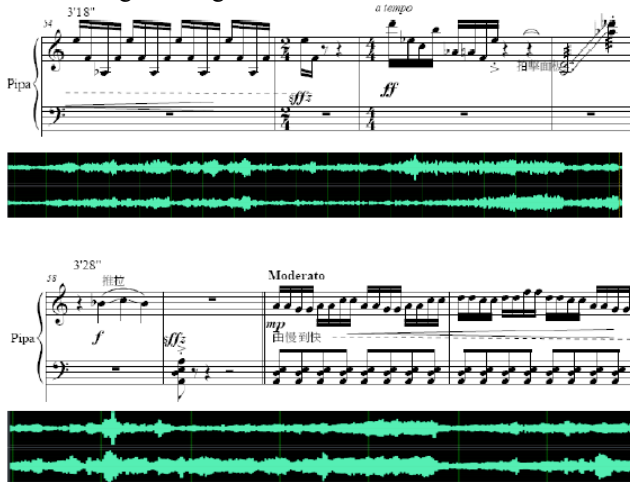

Figure 6: "Whistle" Theme of "Image I"

SECTION 6: CLIMAX (3'35" – 4'39")

In section 6 the "whistle" sound and the pipa's fast fingering is continued to be developed with gliding in a more dramatic way. The conventional Chinese pipa's pentatonic melodic line combined with the authentic pipa chord in perfect-fourth intervals makes this section accumulate huge energy into the climax with the sonority of gong, as shown in Fig. 7.
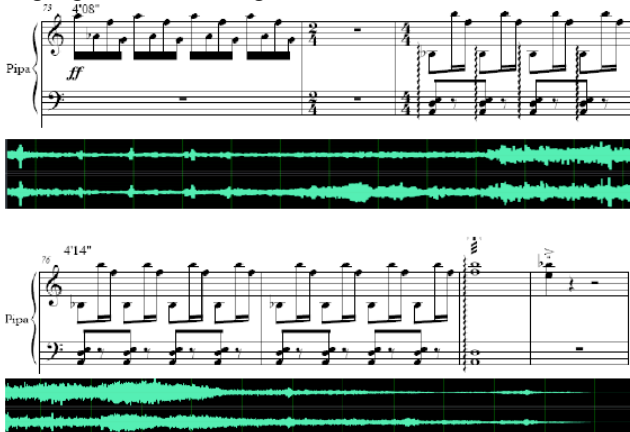

Figure 7: Climax of "Image I"

SECTION 7: CADENZA (4'39" – 5'39")

The cadenza is suggested with the previously shown materials. The pipa performer can freely play this section in a more improvised way. When the cadenza is started, the computer should be paused until the pipa performer finishes the cadenza.

SECTION 8: CODA (5'39" – 7'08")

The above appearing sonority including "whistle" sound, harmonics, dissonant intervals, etc., is recapitulated in various faces. A fragment of melody in the Chinese style is as an episode combined with the recapitulated materials, as shown in Fig. 8. The piece goes to the end with a mysterious image.
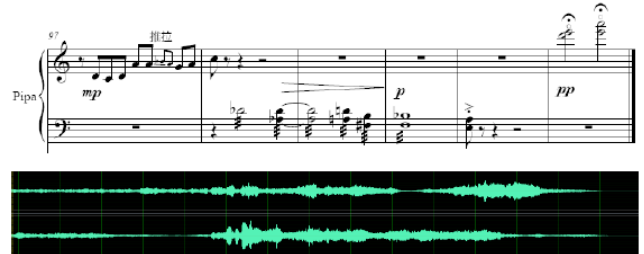

Figure 8: Coda of "Image I"

3. RESULT AND CONCLUSION

Based on the above mentioned composition ideas and techniques, "Image I" can be integrated and composed using a multitrack audio sequencer with all of the transformed samples including stretching, filters, delay, etc. Both of the pipa solo can be well performed with the electronic sound. The detailed change of the audio envelopes can be controlled by the audio sequencer, including volume, pan, and sound effect, which make the piece become more dramatic. The timbre and texture of this piece plays an important role to construct the totality of the music image including the details about the music structure, texture, voices, sonority, tone color, etc. The piece "Image I" shows an innovative way to integrate the ancient instrument known as the pipa with the computer to perform proper transformations, then both ancient oriental instruments can be lively performed accordingly with the modern computer processed sound.

4. ACKNOWLEDGEMENT

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