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"Sound, Song and Cultural Memory – Concerning the History of
Electroacoustic Music in Taiwan"

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Sound, Song and Cultural Memory

– Concerning the History of Electroacoustic Music in Taiwan

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1. Preface

Since the 1960s, some pioneers in Taiwan's community of composers began creating their works with new electro-acoustic techniques. However, in the universities around the island, classes and studios of electro-acoustic music did not really exist until the late 1980s. Before 1980, very few compositions created with electro-acoustic techniques could be heard in concerts, inside or outside the universities of Taiwan. In this report, we will first review the history of the development of electro-acoustic music in Taiwan. Our goal is to find out whether or not the Taiwanese composers were influenced by the idea or the thought of the schools from the United States or France, who have established a solid tradition of electro-acoustic music since the mid-twentieth century. Then we will make some comments from a musicological point of view on existing problems that accompanied the development of this new kind of music in Taiwan. Finally, we will present the interdisciplinary forum: "International Workshop on Computer Music and Audio Technology" (WOCMAT) founded by some young Taiwanese composers, engineers and scientists in 2005. And we will sum up our discourse by means of a discussion on the works of Tzeng Shing-Kwei, Wu Ting-Lien, Tseng Yu-Chung and Chao Ching-Wen, four essential figures in the history of Electroacoustic Music in Taiwan. We will describe how they enliven the tunes and sounds around them by using the new compositional techniques, electro-acoustic or not, and how they evoke the cultural memories of their listeners in Taiwan.

2. Pioneers of electro-acoustic music in Taiwan

Among Taiwanese composers in the 1960s, it was **Lin Erh** (1934 -) who began to create musical works using electro-acoustic techniques. After graduating from the Electrical Engineering Department of National Taiwan University in 1958, Lin Erh went to Northwestern University in the United-States, majoring in music theory and composition. In 1960, Lin decided to switch his major to computer music at the University of Illinois in Urbana-Champaign, with guidance from the originator of computer music, Lejaren Hiller (1924-1994). Created in 1968, *Computer Sonata* is the work that presented the result of Lin's conversion to electro-acoustic music. Nevertheless,

since his return to Taiwan from the United-States, Lin has dedicated most of his time to the collection and study of folksongs and popular music of Taiwan.

Ex. 1. *Computer Sonata (1968)* : This piece was completed in 1968. It includes two movements: “*Computer sonata I*” and “*Computer sonata II*”. The musical part of this piece was created by using lilac II, Variations of recording. Furthermore, the strength of each harmonic overtone was created because their different quality would generate different sounds such as the upward and downward glissando, the echo, etc.” (Extracted and rewritten from the program notes by Lin Erh)

3. Establishment of the studio and teaching of electro-acoustic music

3.1. National Chiao Tung University – Wu Ting-Lien and Phil Winsor

The first established electro-acoustic music studio in a Taiwanese university was in 1988 by **Wu Ting-Lien** (Wu Dinglian, 1950-) at National Chiao Tung University (NCTU, also Jiaotong Daxue; Chiao Tung means “Transport” in English). Since the opening of the studio, Wu has frequently invited **Phil Winsor** (1938-) to come to help establish the studio and give lessons to the students at the Institute of Music – formerly the Music Section of Institute of Applied Art until the year 2000 – of NCTU. That is why many young Taiwanese composers have gone to the University of North Texas to continue their study of electro-acoustic music, after graduating from Taiwanese universities.

Ex. 2. *Stillness in the Movement, Movement in the Stillness (1989)* : This work is written according to the Compositional Algorithms of computer music. The process of sound production was as follows: first, ASCII file was established by the “Modnew10” program. Then, it was transferred to the Midi file in the Promidi Environment, where it was transformed, combined and superimposed to create the Midi file of the whole work. Finally, the Midi file called up the sound module to produce the music. The whole process is similar to that of the cinema. Using the sound module of Roland MT32, the timbre of the work consists of the following eight instruments: breathpipe, shakuhachi, sitar, shô, tube bell, koto, bottle blow, and panpipes, which present the composer’s vast interest in Asian traditional music. As for the parameter of pitch, the composer imported the pentatonic scale. The algorithm controls the changing of the timbres by enlarging and reducing them. Since the essential idea of the work was inspired by the “timbre” and every pitch is accompanied by a single timbre, the whole work mainly consists of a succession of timbres reminding us of the Gamelan music of Bali. While every moment of the work seems lively and full of change, the work as a whole is still and constant. This is because the relation of the sound is always the same even though the work contains

dynamic movement. The music also reminds us of a primitive élan vital from far away. (Extracted and rewritten from the program notes by Wu Ting-Lien)

3.2. National Taipei University of Education – Tseng Yu-Chung

Tseng Yu-Chung, who graduated from Soochow University in 1988 and the University of North Texas in 1998 (with a Doctor of Musical Arts), has since returned to Taiwan and currently teaches composition and electro-acoustic music at National Taipei University of Education and Soochow University. Created in 2005, *A Reminiscence of Pipa* presents Tseng's late concern of the treatment of sound and timbre as well as his cultural nostalgia.

Ex. 3. *A Reminiscence of Pipa* for flute, percussion and computer music (2005) :

Inspired by a poem *Pipaxing* (Song of Pipa) of Bai Guyi, a Chinese poet during the Tang Dynasty, the work can be viewed as reminiscent of the story narrated in the poem. The flute part of the piece presents the feelings of the poet in sympathy with the sadness of the female pipa player in the poem, while the computer music and percussion part serve as the rhythmic support to the music, which reinforces the poetic atmosphere of the work. In the movement of the work, the audience is involved, providing some interactivity and theatrical elements of the work. Several Eastern musical elements and instrumental idioms are employed in the piece, such as the treating of a single tone as “living matter” with different kinds of vibration, and changes of timbre (as manifested in the Qin music). The work, scored for live flute and taped computer music, reflects the composer's interests in the idea of integration of both media. Several computer music techniques such as Fourier transformation (convolution and phase vocoding), granular synthesis and the other techniques of post digital audio signal processing (like delay, reverb, filtering, etc.) were used for many of the manipulations/transformations of the sound material to provide an optimal fusion with the instrumental sounds. (Extracted and rewritten from the program notes by Tseng Yu-Chung)

3.3. Taipei National University of Arts – Yao Da-Juin

Yao Da-Juin, an electro-acoustic music composer without traditional discipline of composition (harmony, counterpoint, etc.), graduated from the Foreign Literary Department of National Taiwan University and began an early experimentation of music and multimedia art in Taiwan in the late 1970s. After studying in the Institute of History of Arts in U.C. Berkely, Yao created many works of electro-acoustic music and presented them in festivals and concerts in the United-States. As far as I know, Yao has been

director of the Center for Art and Technology of the Taipei National University of Arts until the summer of the year 2007.

Ex. 4. *Gateless Gate* (2006) : This work deals with the non-duality of life, yet at the same time self-consciously cuts itself into two. The title is taken from the famous anthology of Chinese Zen koans – Wumenguan (Gateless Gate). The piece is composed entirely of dense layers of heavily modulated sounds of a squeaky door. This is an extended, modified 4-channel version of a composition that premiered at the OFF-ICMC Concert in Havana, Cuba, 2001. (Program notes by Yao Da-Juin)

4. Tzeng Shing-Kwei and the “Computer Music Association” of Taiwan

In 1999, thanks to the willing and the tireless efforts of **Tzeng Shing-Kwei** (1946-), and help from the other electro-acoustic music composers like Wu Die and Tseng Yu-Chung, the “Computer Music Association of the Republic of China” was founded in Taipei. As professor of composition in National Taiwan Normal University (NTNU), Tzeng has shared his ideas of electro-acoustic music with his students since his return from Germany (Musik Hochschule im Freiburg) in 1981. In 1986/1987, thanks to a scholarship awarded by the French government, Tzeng went to IRCAM to deepen his knowledge and technique of electro-acoustic music. After his return from Paris, at almost the same time with the establishment of the studio in NCTU, Tzeng began to introduce electro-acoustic music to his students in a more systematic way, but without a well-equipped studio!

Ex. 5. *Super Collision for flute, guitar, percussion, mime and computer music Max/MSP* (2005) :

This piece is referred to as the 2004 Presidential Election of Taiwan. Most of the people in Taiwan believe that the result of the vote was unfair, or at least doubtful... Personally, the composer doesn't have any prejudicial political position, even without any right or wrong judgment. He can only invent a symbolic musical theater to probe into the society stratum of Taiwan. According to this idea, the piece consisted of two parts: 1st movement *Vote Champion* and 2nd movement *Duel*. In the first movement, most of the instruments play their own parts individually, (like Lutoski's famous String Quartet). Each individual part can play freely and the piece can be presented in a different way during different performances, except for the middle part of the movement that has a fixed score. The second movement begins with a minimal style part which accompanies the flute solo. It is quoted from the jazz music, *Misty*. After the middle part of the movement, the mime plays through the Kroonde (an interactive device) made by the la-kitchen Co. of France,

as a virtual instrument. He has a spectacular dialogue and improvised action with the Taiji player (kind of another mime).

This piece is the first experimental work of the composer, created with an interactive device. A simple MIDI and prerecorded sound is used, but with the Max/MSP computer, the composer employs many sound transformations, such as subtractive synthesis (high pass, low pass, comb filter etc.), granular synthesis, time stretch, pitch shift etc... The presentations of the theatrical elements such as improvised actions between the mimes, as well as the individual parts of the instruments, decide whether the work is successful or not. In brief, this is a highly dramatic piece of conflict and interaction. (Extracted and rewritten from the program notes by Tzeng Shing-Kwei)

5. Chao Ching-Wen and the forum WOCMAT

Graduating from NTNU and the University of Stanford, **Chao Ching-Wen** has been always active in both the field of traditional instrumental music and the field of electro-acoustic since her return from the States. As professor of composition and electro-acoustic music, Chao now directs a studio of electro-acoustic music in NTNU. In the spring of 2005, with help from the Graduate Institute of Communication Engineering of National Taiwan University (NTU), Chao organized the first international forum of “International Workshop on Computer Music and Audio Technology” (WOCMAT) in Taipei. The forum continued two times in 2006 (organized in NTNU) and in 2007 (organized in NCTU). The forum has gained many successes in integrating the resources of electro-acoustic music in Taiwan, as well as in the communication between the composers, engineers, scientists of Taiwan and other countries.

Ex. 6. *Natural Boundary* for Zheng, Violin, Cello and Electronics (2006) :

Natural Boundary, pronounced "Tien-Nee" in Chinese, was inspired by the term in one of Chuang-Tzyy's doctrine which denoted the naturally but constantly varying line that distinguishes wrong from right, black from white, yes from no, and so forth. The piece goes through three stages: The first unfolds sounds which seem to come from nowhere—silence. The harmonics and percussive points, like the noises in nature, circulate through space. The wind brings to the second stage, songs in which heterophonic technique rules the lines in respiratory continuity. This continuity leads to the final stage, during which the constant three-dimensional sonic events interweave, exchange, shift, or derive in sudden moments. The time structure, originating from the number of strokes in the characters of the Chinese title, constructs the wave of sound speeding up and down, and comfortably grows wide and

narrow in space. The making of electronics is based on the granular synthesis technique developed by Fernando Lopez-Lezcano at CCRMA-Stanford, as well as the Erhu-Synthesize software newly explored by Hsiao Yi-Song at the NCK-University in Tainan. (Extracted and rewritten from the program notes by Chao Ching-Wen)

6. Conclusion

According to our discussion, the works of Wu Ting-Lien and Tzeng Shing-Kwei contain many cultural symbols, presented either by instrumental timbre or quotation of melody, that evoke in us memories from the history of Taiwan or conjure up images related to the larger dimension of Asian culture. Also, the works of both composers reveal a certain hybrid style. The political and human concern in the work of Tzeng remind us of a similar attitude presented in the works of Luigi Nono, such as *Como una ola de fuerza luz*. On the contrary, we can find a similar interest in the stillness and purification of sound in the works of Chao Ching-Wen and Nono with different styles, like *Fragment – Stille, An Diotima* or *.....sofferte onde serene...* In spite of possible influences from Chinese philosophical and literal text, the works of Chao and Tseng Yu-Chung have emphasized the treatment of sound itself rather than the combination of existing cultural materials, distinguishing their styles from those of their predecessors and reminding us of our cultural memory in a more abstract but profound way.

As we have presented in the previous section, most of the Taiwanese composers of electro-acoustic music were trained at universities in the United States. Even Tzeng Shing-Kwei, who had a typical European training of composition and electro-acoustic music, has recently spent a good deal of time and energy – as visiting researcher or guest composer – going to the United States (2002/2003 at the University of Stanford and the University of North Texas, 2005 and 2006 in CNMAT of U.C. Berkeley) to pursue the new trend and the new technologies of electro-acoustic music. However, the composers graduating from American Universities never abandon their opportunity to present their works or to enlarge their knowledge or techniques of electro-acoustic music in IRCAM or at the summer campus of Darmstadt. For example, *Natural Boundary* of Chao Ching-Wen was recently created at Darmstadt in the spring of 2006, and the creation of the work of Lin Mei-Fang (another young feminine composer who studied mainly with Wu Ting-Lien in Taiwan) in IRCAM has recently impressed many European professional musicians as well.