예술적 담론으로 본 한·중·일 지역문화 재조명

– 전라도편

The Society of Korean Dance History

Research Institute of Korean Dance

일시 | 2012년 11월 24일(토) 오후 1시 ~ 6시

장소 | 한양대학교 한양종합기술연구원(HIT) 6층 대회의실

주관 | 한양대학교 우리춤연구소

주최 | 한국무용사학회, 한양대학교 우리춤연구소

후원 | 한양대학교, NRF 한국연구재단, 2012전북방문의해

2012 INTERNATIONAL ACADEMIC SYMPOSIUM

Digital Gallery Work "Four God Flags" in EXPO 2012 Korea and New Work of Silent Scape

Naoko Tosa (Professor, Kyoto University)
Jong-Il Park (Professor, Hanyang Univesity)
Ryohei Nakatsu (Professor, National University of Singapore)

Abstract

We have created a video artwork called "Four God Flags" for the exhibition called Yeosu Expo 2011 that was held in Yeosu, Korea in 2011. The created artwork was exhibited at the exhibition place called Digital Gallery in Yeosu Expo 2011 during the expo. This paper describes the overview of the expo and how this artworks has been created under the collaboration between an artist, designers, and engineering researchers.

I. Introduction

Big events such as art exhibitions, technical exhibitions, etc. are a good chance to demonstrate the achievements obtained through collaborations among people with different background. The authors have been carrying out collaborations in the interdisciplinary area between art and technology. One of the authors, Naoko Tosa, is well known media artist who has been active in introducing technologies into media art and interactive art she has created. On the other side other two co-authors, Jong-Il Park and Ryohei Nakatsu, are researchers in the area of communication engineering and have been eager to integrate contents and technologies.

They started their collaboration when they were colleagues at ATR(Advance Telecommunication Research Institute)[1] in Japan in mid 1990s. At present they continue their activities in different countries, so to speak Japan, Korea, and Singapore. These counties basically have different cultures but at the same time share lots of cultures as Asian countries. Therefore based on their collaboration it is expected their collaboration could create new artworks that could fill the gap of various cultures in Asia and would express something core in the Asian culture.

Based on such basic understanding they discussed the basic concept of a video artwork the called "Four Gods Flags" that would express the birth, fight, integration, and future of various Asian cultures. Fortunately this concept was accepted by Yeosu Expo 2011[2] Committee. Through the creation process of about more than one year

---

1) http://www.atr.co.jp

they have created the video art work which was exhibition at the expo during its open period.

This paper describes this artwork focusing the relationship between this artwork and Yeosu Expo, the concept of the artwork, and the creation process of the artwork.

II. Overview of Yeosu Expo 2012

1. Yeosu Expo 2012

The Expo is one of the world's oldest and largest international events sponsored by BIE(Beaurou International des Expositions). There are two types of Expos. One is the International Registered Exhibition(World Expo) which takes place every five years and lasts for six months. The World Expo is characterized by the broad scope of the chosen theme, which must be of universal concern to all of humanity. On the other hand International Recognized Exhibition (International Expo) is held between two World Expos and its duration is three months. The theme of the International Expo must represent, as with the World Expo, a global concern but it must be more specialized in its scope. For both Expos participants include states, international organizations, civil society groups, corporations, and citizens.

Yeosu Expo is one of International Expos and was held at New Port area in Yeosu, Korea from 12 May 2012 until 12 August 2012 for three months. The site of International Expos and was held at New Port area in Yeosu, Korea from 12 May 2012 until 12 August 2012 for three months. 2,710,000 m^2 consists of exhibition area of 250,000 m^2 and auxiliary facilities. The site has the geographical edge that comes from being adjacentto the ocean, and thus, is ideal for realizing the Expo theme, "The Living Ocean and Coast." The site over looks Hallyeosdo Marine National Park and Odong Island, and is surrounded by 317 is lets, having the perfect natural conditions to make the Expo's theme to come alive. The whole view of Yeosu Expo is shown in Fig.1.
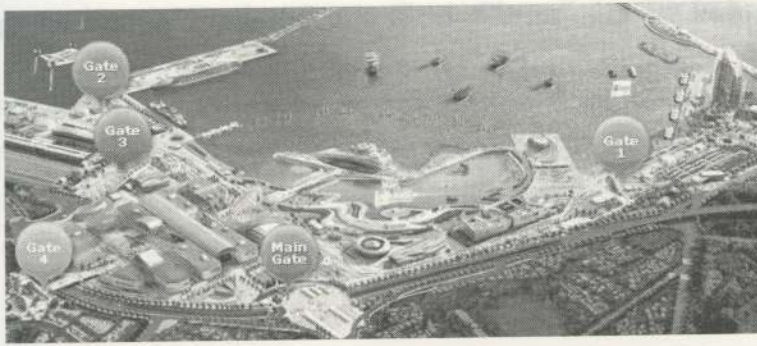

Fig. 1 Bird view of the Yeosu Expo site.

2. Expo Digital Gallery

Expo Digital Gallery (EDG) is one of the key architectures of the Expo. A large LED screen is installed on the ceiling on the passageway of the International Pavilion and is called EDG. The screen is 218 meters long and 30 meters wide which is 6,324 units of 60 inches TVs combined together. At the EDG several video works including our artwork were displayed.

Unlike other pavilions, it is not necessary for visitors to wait in a long line to watch the EDG, but they can simply look us and see the screen while walking and therefore EDG gathered a lot of attentions during the Expo. The view of EDG and international pavilions are shown in the left side of Fig. 2. Also the right side of Fig. 2 illustrates how EDG looks like.
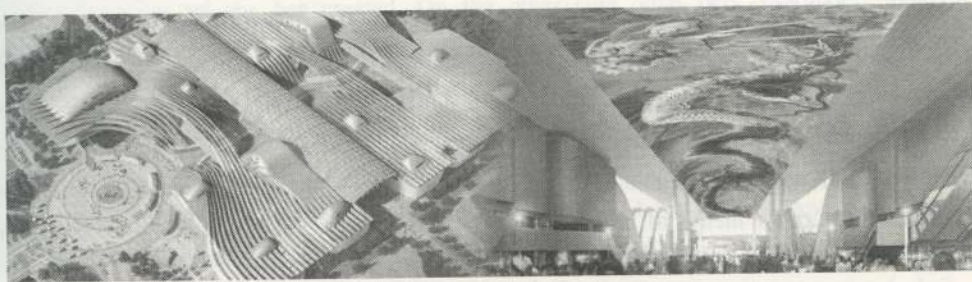

Fig. 2 Expo Digital Gallery and its inside.

3. The process of the selection

The construction company, GL, announced an open call for proposals the contents to be exhibited at EDG. Various persons and organization submitted their proposals and after their review our proposal on "Four Gods Flags" has been selected as one of video works to be exhibited at EDG during the Expo.

Ⅲ. Concept of "Four God Flags"

From the ancient time both in Korea, China, and Japan, there has been a legend that four sacred beasts or four gods exist in four directions protecting people. These four gods are; the blue dragon of the east, the white tiger of the west, the red phoenix of the south, and the black turtle-snake of the south.

This idea has been related to the concept of "feng sui." Good feng sui is realized at a place with mountains in the back and water in the front, such as Yeosu city. It has been said that a place with good feng sui is well protected by the four gods.

In the Expo Digital Gallery, a main street of the 2012 Yeosu Expo, the images of these four gods will be shown in a huge ceiling LED display with the size of 218m x 30m and appealing their dynamic movements to the audience.

The background images express underwater scenes with traditional Asian landscape taste. This is based on the idea of integrating traditional Asian culture and the ocean, which is the main theme of the Expo.

At the same time as Expo would be an occasion to show people the vision of our future world. We tried to express how knowledge and wisdom came out of old concept of the four gods and also tried to express our future where people all over the world could be united filling the gap of various cultures.

After the dynamic movements of the four gods, they are merged and represented by the blue dragon, as 2012 is the year of dragon (Fig. 3 a, b, c, d).

Then the process of how human has progressed and obtained knowledge and wisdom throughout the long history is visualized by a group of old Chinese characters that came out of the blue dragon. These old Chinese characters gradually change into the normal Chinese characters and also change into a text (Fig. 3. e, f).

Then we tried to express the future when people would have richer wisdom, exchange their wisdom and share their wisdom filling the gap of countries and cultures through the image that each of these characters would change into a form of Maitreya and they chat each other. Maitreya is a god that appears in the long future and is relevant to express the image of out future. And then in the final stage the images of Maitreya change into the images of the four gods to express the dynamism human should maintain even in the future regardless of their country, culture and religion(Fig. 3. g, h).
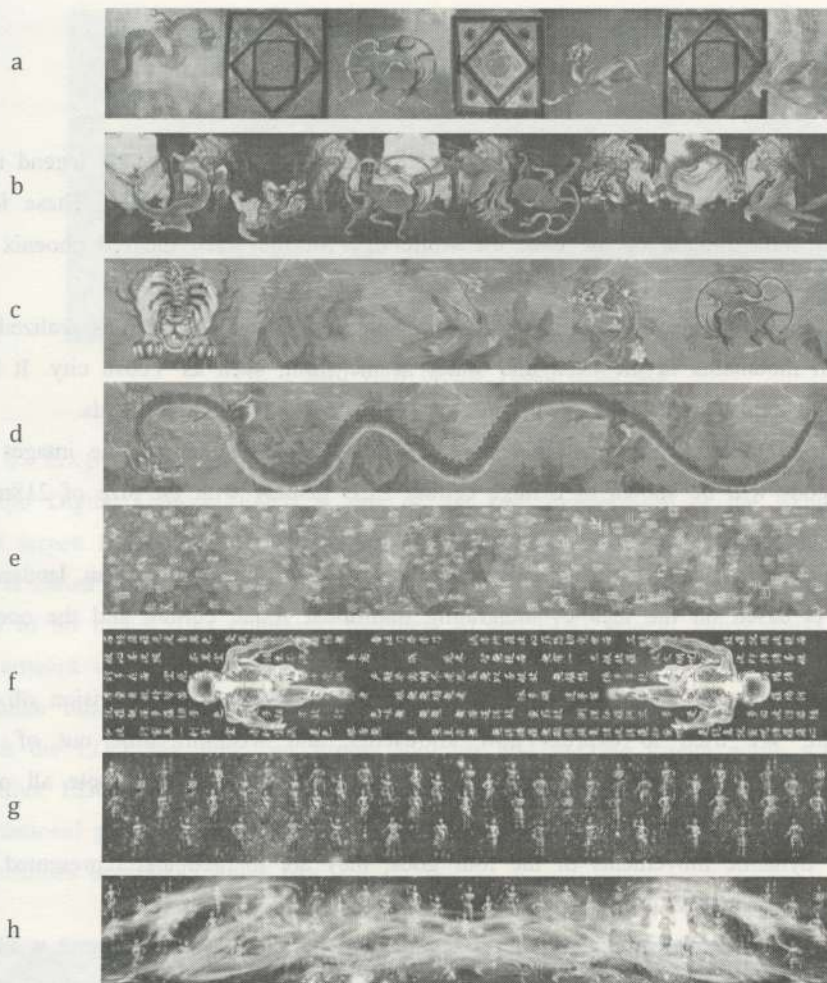
Fig. 3 Screen shot of the video artwork "Four God Flags"

Ⅳ. Creation Process

1. Four Gods of Goguryeo Tombs and animation(Fig. 4)

Four gods that are depicted on the ceiling of Goguryeo ancient tomb were used to express their resurrection. The video begins with a scene that these Gods begin to move slowly, directing the movement was solemn. The animation was created with hand-drawn images of all the keyframes, then with morphing animation assignment carried out on them.
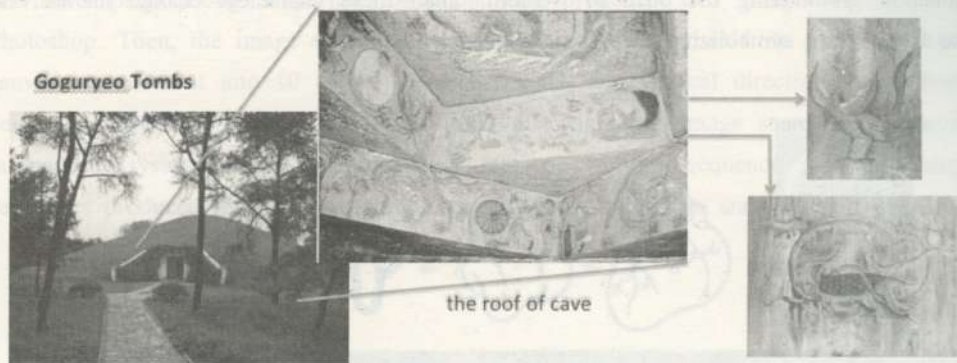
Fig.4 Four God of Goguryeo Tombs

2. Dragon with Korean pattern

Dragon is a sacred animal commonly used in Asian countries. We created the dragon image so that it looks like a dragon in Korea. It has big eyes, a feature of the Korean dragon, and its face is not thin like the Japanese dragon. As there are various beautiful patterns of dragon designs in South Korea, these patterns were attached to the body of the dragon it. It is very effective and you will see a very beautiful scene of dragon' swimming underwater.(Fig. 5.)
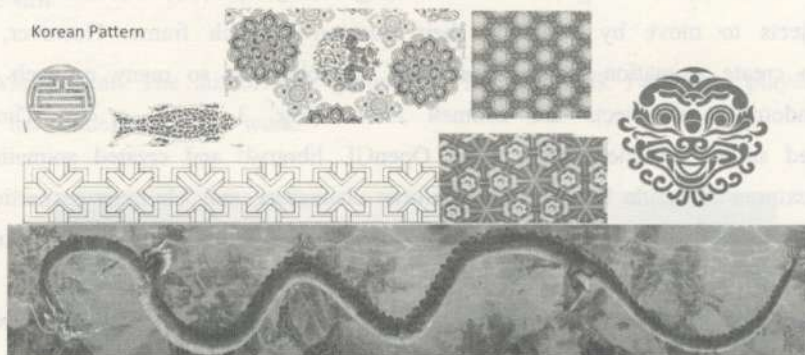

Fig.5 Dragon with Korean pattern

3. Background Sansui image and oracle bone script animation

As the theme of the Expo was "sea," we have created a background landscape image expressing an ocean. The landscape image itself is an animation which we created showing the old story of the Korean turtle that goes for a journey to get a rabbit heart for its king. In addition, the change from oracle bone scripts, which are the roots of Chinese characters, to modern Chinese characters is expressed by

animation symbolizing the birth of wisdom. Then these characters change themselves into Heart Sutra symbolizing the Asian philosophy.
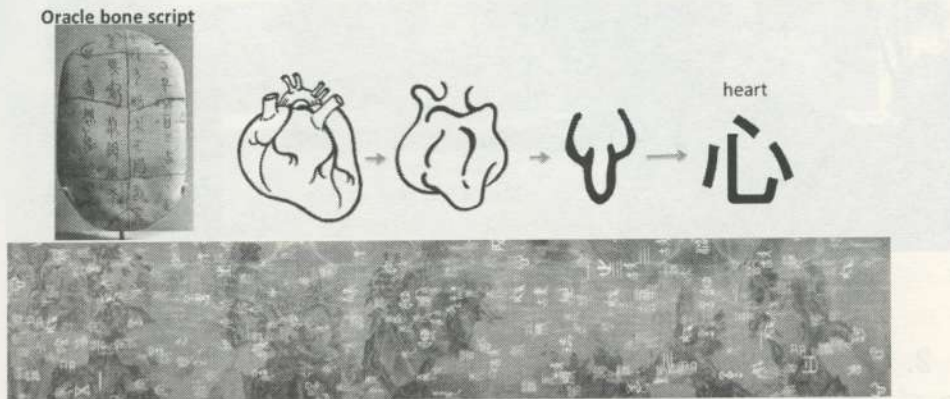

Fig.6 Under water Sansui with Oracle bone script animation

4. Rendering of the animation

The animation was rendered in two ways. First, Adobe Photoshop program provides animation functions and the scenes such as appearance and dynamic movements of the four gods were created using the functions (Fig. 3. a, b, c, d) Photoshop program allows objects to move by assigning their position at each frame. However, it is difficult to create animation when the number of objects is so many or each object moves randomly, or objects are zoomed in/out (Fig. 3. e, f, g, h). Thus we implemented simple particle system using OpenGL library[3] and created animation by mapping textures of oracle bone scripts, Chinese characters, and Maitreya to particles.

Conventional particle systems are used for physical simulations by calculating attributes of particles such as position, velocity, mass and applied forces [4]. These systems may not intuitive to animation designers because particles move by invoking forces rather than assigning positions. Moreover, movements of the particles can cause sense of incompatibility with those which is created by using Photoshop program. Thus we simplified particle system so that each particle has only position and velocity. A particle moves according to the destination and the time to arrival. The image is zoomed in/out according to the change of z component of position. Random movements of the particle were archived by adding noise to velocity of them.

EDG has resolution of 6820×960, which is very large compared to the resolutions of common videos. The width of rendered images in Photoshop is limited to 5000 pixels. In case of using OpenGL, resolution is depend on display. Thus we divided canvas

---

3) http://www.opengl.org

into two parts along horizontal direction and produced two image sequences in Photoshop. Then, the image sequences were combined side by side. In particle system, canvas was divided into 10 and 2 along horizontal and vertical directions respectively because a display whose resolution is 1280×960 was used. Image sequences produced in particle system were also combined into one image sequence. Finally, image sequences produced in two ways were converted to a video file and played at EDG.

V. Conclusion

The created video artwork of "Four Gods Flags" was regularly exhibited with other video works the Expo Digital Gallery(EDG) of Yeosu Expo 2012 from mid May 2012 until mid August and gathered lots of attentions and interest from visitors of the Expo. Especially our artwork was recognized as the most distinguished one among the video works exhibited at EDG. Based on our contribution to the Expo, one of the authors of this paper, Naoko Tosa, was awarded by Yeosu Expo Committee(Fig. 7.). We confirmed through this successful work that the collaboration of art and technology based on shared cultural resources of East Asia could broaden the new horizon of creative art.

Acknowledgement: The authors are grateful to Mr. Jung-Sik Park who played a great role in the rendering of the work.

Fig. 7 Naoko Tosa receiving an award from Yeosu Expo Committee

Reference

A. Witkin, "Physically Based Modeling: Principles and Practice - Particle Systems," ACM SIGGRAPH97 course material, 1997

http://www.atr.co.jp

http://www.expo2012.kr

http://www.opengl.org