



Digilog Bamboo: Interactive Ink-and-Wash Painting Project

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ABSTRACT

This study is in the form of digilog [1] that synthesizes analogue sentiment and digital technology, which reinterprets the Four Gracious Plants in modern context. Interactive Ink-and-Wash Painting Project aims to enable audience to communicate with the work through synesthesia by expressing the four paintings of the Four Gracious Plants in interactive art. "Digilog Bamboo", which is a part of the painting project, is "performance interactive art" that paints bamboo with breath using Daegeum, a traditional Korean musical instrument. [2] This study embodies spiritual value of bamboo in the East through digital technology, and encourages cultural communication with the world across space and time.

Keywords: Cultural technology, digilog Bamboo, interactive ink-and-wash painting, Interactive media art, and interactive performance

1 INTRODUCTION

Tradition is the basis or the drive for enriching present and future's cultural creation, and serves as the foundation for establishing direction of development of modern society and future culture. Today's culture is re-created with the digital power, and as a result, enables communication with the world. Consequently, there is a need for the original oriental painting not to boast its beauty in the form of history, but to be reinterpreted and appreciated in modern context. By digitally reconstituting the spiritual and aesthetic values of the ink-and-wash Four Gracious Plants (Confucianism is an East Asian ideology originating in China with Confucius as its founder, which establishes benevolence as the highest ideal to rule over all ethics), analogue sentiment and digital technology adequately blended to be produced as interactive art work [3]. This is expected to represent value of traditional culture and emotionally communicate the past and present to modern people through interactive art.

2 FOUR GRACIOUS PLANTS: THE BAMBOO

There is no doubt that the idea of ink-and-wash painting or its history has the absolute place in oriental art history. Ink-and-wash painting connotes high level mental ideality with philosophical root and period background. Four Gracious Plants (Ancestors discovered the aspect of noble man in the inherent properties of the four plants (plum blossoms, chrysanthemum, orchid, and bamboo), and expressed the virtue of noble man through those properties) shown in Fig. 1 is representative of oriental philosophy and mentality, and it required the painter to reach a certain state of mind or character. In other words, the reason why a noble man of virtue used the Four Gracious Plants as subject of painting was that noble man considered those plants as the subject of himself [4].



Fig. 1. The Four Gracious Plants traditionally portrayed in ink-and-wash painting(From the left plum blossoms, Orchid, chrysanthemum, and Bamboo), by Sehwan Kang.

Bamboo, amongst the four plants, indwells mental value in its upright nodes and green leaves, which represented clean mind and principles. In Confucian perspective, bamboo's root(spirit) symbolizes strength, inside of stem(mind), emptiness, and nodes(body), uprightness. Thus, even today, it cannot be overlooked that as noble men are known to have emptied their mind to accomplish their goals and setting their body straight to cultivate virtue, when their mind and spirit were disturbed [3], they always tried to regain calmness by painting, keeping in mind the symbolism of bamboo that stretches towards sky at all times amidst fierce winds. Hence, this study turns to digital technology to seek ways to communicate bamboo paintings with high spiritual value to modern people.

3 DIGILOG BAMBOO: INTERACTIVE INK-AND-WASH PAINTING PROJECT

3.1 Digilog Bamboo: Picture

The work “Digilog Bamboo (Digilog discussed by Korean humanist O-Young Lee refers to the term that integrates digital and analog. It was presented as a way to enhance competence of digital era by expressing analog sentiments through digital technology)” presented by in this study is an interactive artwork in which a performer plays Daegeum to create a painting. “PoongJookDo (wind-bamboo drawing, in the _rst half of 17th century)” of aristocrat artist, Jung Lee, that established stylistic tradition of bamboo paintings of Chosun era was used as reference for this painting [5]. This painting has high cultural value as it is even drawn at the back of 50,000 Korean won bill.



Fig. 2. PoongJookDo, by Jung Lee

3.2 Digilog Bamboo: Interface

Daegum (Writers mastered Daegeum along with writing and painting, and it is a healing instrument that is usually played for cultivation of mind, which is very much like the purpose of painting the Four Gracious Plants), a traditional musical instrument is used as interface to represent spirit of scholar and formative elements of pens, paper, and ink [4]. This work was designed to for the user to blow in energy through breathing with proper attitude and spirit for Daegeum, instead of actually playing Daegeum, for everyone to easily operate the work. Thus, audience does not need to exert considerable effort to play Daegeum, but instead simply breathe into it (This method was designed for the audience to prevent any trial and error or access error that damages the nature of interaction. Only optimal technology was used to fit the concept of the work).



As this breathing responds to yin and yang of energy and mind form is exposed in virtual space, light and shade of ink is determined by the strength of energy [6]. Because length of nodes, bamboo blades, and light and shade of ink change by length and strength of breath, each user creates different final painting.



Fig. 3. Traditional musical instrument: Daegeum

In one breath, a node is formed, and then another breath creates bamboo blade. Usually, 5-7 nodes are drawn, and 3-5 groups of bamboo blades are drawn. Sounds were extracted from "DaegeumSanjo" musical program and made into 30 different sound tracks to be played as Daegeum sounds. When bamboo tree is generated on the screen, Daegeum sound tracks are randomly played.

3.3 Digilog Bamboo: Skill

Technical device used in this work is relatively simple. Miniature microphone built in Daegeum receives the strength of breath, which the computer uses to determine light and shade of ink. In order to create a bamboo tree with consistent light and shade, performer must sustain consistent breathing, and by doing so, he finds calmness in mind and body. Also, as the length of breath determines the length of nodes, consistent breathing creates straight and uniform bamboo tree.



Fig. 4. Performer must sustain consistent breathing

The above process was programmed with Adobe Flash Action Script, and controller was structured to enable easy access of users considering all market environments [6].

“Microphone Level” and “Blow Accumulation” are the main components of graphic controller, and “Processed Brush Power”, “Sensitivity”, and “Debug” are the additional components.

“Microphone Level” controls the sensitivity of microphone, and “Blow Accumulation” accumulates breaths. Once the accumulation exceeds the value set for the strength of breathing, Daegeum soundtrack plays in the background as graphics is generated on the screen. “Gauge bar” fills up in gray as much as the accumulation.

“Processed Brush Power”, a submenu, refers to the concentration of ink, and as strength of breathing reaches 110, the ink becomes more concentrated. “Sensitivity” controls the speed of output [7]. “Debug” tests reaction speed of breathing with input virtual tree after all the above menus are set. The figure shows the product of “Digilog Bamboo” shows two trees in one screen.

4 EXHIBITION AND FUTURE WORK

“Digilog Bamboo” was produced for exhibition in the West. It was intended to provide opportunity for sharing and communicating East and West culture and spread Korean culture through experience. Thus, numerous exhibitions in the West (The works were presented in Spain(2009), Greece(2009), U.S.A.(2010), Japan(2009), and Malaysia(2011)) and international thesis presentation can be seen as disproof of the achievement of this goal. Moreover, technical modernization of oriental painting received award for excellence in International Arts Festival of Castilla y Leon (2009. 06) hosted in



Spain, proving that it is ready to communicate with the world. In other words, in line with the concept of this work, an opportunity was presented for art of the East to be shared with the world through scientific technology.

If the 20th century focused on "more" and "faster", the 21st century is directed towards human-centered value, "emotional empathy" and "communication" in cutting edge digital technology civilization. Digital technology is truly meaningful when integrated with analogue sentiment to create something new, and in the process, new light is shed on the value of traditional culture [8].

Interactive Ink-and-Wash Painting Project currently produced bamboo and orchid. Chrysanthemum and plum blossoms that contain meaning in their flowers are the future research topic, and once the research is complete, the 4 paintings will be produced in one space.

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