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Sunghui Lee

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Rochester Institute of Technology

A Thesis submitted to the Faculty of
The College of Imaging Arts and Sciences
In candidacy for the degree of
Master of Fine Arts

Ten Bulls of Zen

By Sunghui Lee

Thesis Approval

Chief Advisor: James VerHague

Date:

7.27.04

Associate Advisor: Chris Jackson

Date:

7/27/04

Associate Advisor: Jason Arena

Date:

8/3/04

School of Design Chairperson: Patti J. Lachance

Date:

11-17-04

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THESIS PROPOSAL

for a Master of Fine Arts Degree in Computer Graphics Design

Rochester Institute of Technology
College of Imaging Arts and Science
School of Design

Title

The Better Communication of Zen through Computer Graphics Design; How to Transmit the notion of Zen to Beginners

Purpose

My thesis will demonstrate how the notions of Zen can be communicated through computer graphics design more efficiently than other methods. Comparing to the past educational methods of Zen, the new media makes the audience to feel Zen with their fingers and eyes by mouse and screen. It will help people learn Zen through experience.

Background

Ever since the invention of the written word, religion was the driving force behind improving methods of communication. For example, Gutenberg developed typographical printing for the Bible, and Koreans invented metal printing for the Sutra. I believe that Computer Graphics can perform the same role in transmitting information and ideas about religion and philosophy, and perhaps do it better than other media.

The reason that I choose Zen is because it is the one of the most difficult religions to explain. To give enlightenment, masters of Zen have tried many things. However, they were mostly too hard for common people to understand.

Methodology and Limitations

My thesis will have two parts. The first part will be research on the traditional educational methods such as the poetry, tales, and literal descriptions. The research will be launched on the website. The other will be a project that provides a virtual experience of terms of Zen.

I will suggest several examples to explain notes regarding Zen. The intended audience is people who never have learned about Zen before. Users will solve or perform tasks given to them by the program and thus learn the meaning of the terms of Zen. Moreover, they will compare the project with the traditional ways of teaching via a research web site.

Review of Literature

Practicing religion in the age of media: explorations in media, religion, and culture (2002)

On-line resources

- Hyundai Bulkyo: <http://www.buddhapia.co.kr/mem/hyundae/auto/newspaper/250/w-2.htm>
- www.deabul.or.kr: <http://www.deabul.or.kr/home/searchsiteofdonga.htm>
- Ministry of Information and Communication/ Republic of Korea:
<http://kidbs.itfind.or.kr:8888/Strategy/0101/Market/0093809.htm>
<http://www.kisdi.re.kr/imagedata/pdf/10/1020021403.pdf>

- Whakyesa: <http://www.hwagyesa.org/chamsun/>
- Bupbo: <http://www.pubpo.com/news/607/sub7/607g05.htm>
- Manmulshinmun: http://211.233.38.149/PDF_01/72/72_12.pdf
- 10 Bulls: http://www.cs.sfu.ca/people/ResearchStaff/jamie/personal/10_Bulls/Title_Page.html
- Buddhnet: <http://www.buddhanet.net>

Preface

In the ancient times, letters were used sacred and nonrepresentational things. The hieroglyphics of Egypt, China, and Maya were possessed by great monks and kings and were used to get oracles or record holy documents. Until the recently, specific classes of people took sole possession of characters as a means to transmit their power and position. In the western world, even the Holy Bible was not available to most people prior to the Reformation, though almost everybody believed in it. The introduction of mass printing was one of the most important elements that helped make the Reformation a success.

The eastern world was not very different. In the case of Buddhism, its origin was in India, despite the fact that it faded away there and has spread out to the rest of Asia. Before it faded away, many temples in India possessed precious documents and books. Monks in countries far away wished to bring them to their countries, no matter the cost. Many monks traveled to India, and some of them left valuable documents about their journeys. With their efforts, the notion of Buddhism took root in Asia and aided cultural exchanges between western and eastern world. In short, there has always been important relationship between religion and media.

Emergence of Religion and Mass Media

As described above, religion and media have historically affected each other, and the relationship between them has accelerated the growth of both. Since television was invented, the environments of religion have changed dramatically in many ways, because new media has had a massive impact on the public in comparison to past mediums. Therefore, it is important to research the relationship between religion and mass media. In the 19th century, even newspapers were new to people. They soon became powerful tools in sharing ideas and shaping public opinions. Today, we live in a world with many mass mediums, such as televisions, the internet, PDAs, cell phones, satellites and multimedia. These new mediums are full of possibilities. Therefore, more theologians and media scholars have drawn their attentions to them. Nevertheless, digital media, such as the Internet, multimedia CD-ROMs and cell phones, comprise the very latest fields in media. Though there is a recent movement in studying modern media such as television, the new mediums have not been professionally discussed as much thus far.

Three Reasons for the Research

Cultural Changes

New technology has dramatically changed our way of life and created a new generation that has become saturated with the new media. When I was young, I went to libraries to write my essays, used public phones to call home, and wrote notes by hand. Now, encyclopedias have turned into CD ROMs, and many people carry cell phones with them everywhere, almost everyone uses personal computers to write.

Methodological Changes

Certainly, these changes have affected religions, too. Most religions in the world use mass media to deliver their beliefs to the public. They use TV and radio stations, video sermons, CD-ROM Bibles, and Internet web sites. For a long time, many researchers have been interested in televangelists because of their far-reaching effect on public. Today, however, computer-based media, while is still not well-known to researchers, has many possibilities. Although it is not clear what effects the new mediums will have, the new generation is already using them and they have thus started to emerge in their culture and religion. It is impossible to prevent it from happening.

In the column “21st Century and the Media” (www.bupbo.com), Gong, Jongwon (the former editorial writer of Chosun Ilbo) said “since the arrival of the new media in the late 20th, people become aware of the world which the media controls.” In the column, he expressed concern that Buddhists have not utilized the benefits of the new media, and insisted that this must change.

Conceptional Changes

For a long time in the western world, the church was the only authority on religious beliefs and people thus followed them. In the 16th century, Protestantism was first and foremost a movement that signaled a new independence from the Catholic church¹. As time went on, religion became more and more individualized. Many people began to place a greater importance on their own understanding of their religion. Television evangelists are a good example for this concept. This approach to religion has two sides:

1. It may be dangerous when an individual misunderstands a particular religion
2. It may be an excellent method to deliver true beliefs to the masses.

However, researching the harmful effects of media is not my goal. In this project, I will discuss the advantages of how the media can be used.

Market Value of Buddhism-Related Products

Is it wise to invest in Buddhism-related products? Printing continues to be the most widely used way to communicate with the public. Various books about religions can be easily located in bookstores. Religious publications are almost always in demand, and their market potential could be tremendous when the religion being discussed is a popular one such as Christianity, Islam, Hinduism, or Buddhism. As a result, it is not hard to find religious bookstores in most cities or find web sites selling religious materials. The interesting thing is that today, people who are tired of the boring and hectic aspects of the materialistic world are seeking spiritual enlightenment. Thus, Asian philosophy became more popular in the western world, and it is not hard for people to find CDs for Yoga or meditation in music stores. These items serve not only religious purposes, but also for personal ones. For example, a non-Hindu can practice yoga as a way to improve his or her health.

During the course of my research, I noticed that religious societies have the same concerns about the new media industry. Today, the most popular religion in Korea is Christianity, followed by Buddhism. Both religions try to reap the benefits of mass media, including television and radio broadcasting. Up until now, Christianity has reached more Korean through the use of mass media than has Buddhism, and the same can be said for other countries.

< Chart 1 - Religious multimedia products in stores>

	Store	Keywords	Products
USA	CompUSA	bible, religions Buddha, Buddhism, and Buddhist	Electronic Holy Bible (Columbia Telecommunications) Bible Collection Suite (ValuSoft) Bible Wisdom (Topics Entertainment) Bible Wisdom, Jewel Case Only (Topics Entertainment) Books and Bibles, Jewel Case Only (Simply Media) Thomas Nelson's Discover The Bible (Thomas Nelson, Inc) Treasures of the Bible, Jewel Case (Topics Entertainment) PDA Bible (Handmark) Bible to Go (Cosmi Software) Deluxe Bible for Palm and Pocket PC (Cosmi Software) None
	Walmart	bible Buddha, Buddhism, and Buddhist	The Bible Collection Suite PC None
	Circuitcity	bible, religious Buddha, Buddhism, and Buddhist	Bible to Go (Cosmi Software) None
Korea	Christian Mall	www.biblebank.com	
	Buddhapia	http://mall.buddhapia.co.kr	Software- total: 1

As can be seen in Chart 1, it is expected Christian software comprise most religious products in America, as most of the population is Christian. However, Buddhist software is rarely found in Korea, though there is a large population of Buddhists. For this reason, Buddhists are beginning to realize that they lag behind in mass media and must develop new media materials

“The 21st century is the time that empathize the cultural element, such as the emotion and the sensitivity of human being. In the 20th century, people produced mass production with less variety. However, people will empathize software products in the way of small production with large variety in the 21st century. Therefore, people shall recognize the importance of ‘image’ as the composition of community, art, culture, and other elements.” said Oh, Nahyun (Buddhism character goods developer) in the special feature for the new year’s day of Manmul news. He suggested that Buddhists change their petty temples and economic system and begin to develop products more aggressively.

Products related to Buddhism are not only important for Buddhists and potential converts, but also for the Korean sightseeing industry. Oh, Nahyun mentioned in his article that creating Buddhism products would also help the sightseeing business. Kim, Jongmyung, a professor at Dongguk University, expressed the same opinion (an essay on Modern Buddhism, <http://www.buddhapia.co.kr/mem/hyundae/auto/newspaper/250/w-2.htm>). In the essay, he noted that Buddhism product is a valuable resource in the Korean tourism industry because the traditional cultural properties in Korea are, for the most part, Buddhist culture and its assets. The most interesting part of his essay states that the development of software is most important and urgent thing needed to introduce these assets to foreigners.

Why did I choose a multimedia project to demonstrate the new media for Buddhism, other than the Internet or other materials? There are two reasons. First, the Buddhism circle has realized its necessity as I explained before. Second, a multimedia project is probably the best method to express Buddhism, particularly Zen.

Zen: The Religion of “Seeing” Intuitively

The enlightenment in Buddhism is so individual that it cannot be easily explained in words. After he found the true knowledge of life and death, he wondered if people would understand it or not. Therefore, he observed people before he made the first sermon and decided to teach them, because he found that each person is different. This means that individualism is the one of basic tendencies of Buddhism. Buddhists usually learned Sutras to understand Buddhism, but Zen is a different method concentrating on personal meditation. To find enlightenment, monks applied various abstract materials to concepts: poetry, paintings, and stories. Nevertheless, the basic concept has never changed. People can find the truth by themselves, not through others. Today, the emergence of computer-based media has affected the way of worship and understanding of beliefs. From past research, people realized that new media such as the Internet could give users more opportunities to learn about a particular subject and it gives individuals more independence of knowledge. As a result, compared to other religions, Zen and new media have more similarities and thus more possibilities for use.

Second and most importantly, Zen is the religion of “seeing” intuitively.

One day, Buddha held a lotus flower in his hand and showed it to people. For a long time, he did not say anything. People could not understand what their master was trying to tell them. Only Mahakashyapa understood Buddha's teaching and smiled.

Buddha said,

"I have the truth of enlightenment that I found by myself.
This is such a delicate and complicated truth that I cannot use languages to deliver.
I only can deliver it without the help of Sutras and I deliver it to Mahakashyapa."

(Or "What can be said, I have already said. What cannot be said, I have conveyed to Mahakashyapa.")

What Buddha said above is the core of Zen. Buddhists used other abstract ways, such as paintings, poetry, and stories, to teach others. In the era of computer graphics, it has become possible for people to see what they could not see in the past. 3D programs, interactive multimedia, and the Internet can create unreal images or experiences. With these new methods, people can express the philosophy, or true knowledge in Buddhism, in a new way.

New Media: Image, Multimedia and the Internet

The property of Zen corresponds in the entire new media. In thesis project, a target medium is a multimedia and there are several reasons.

First, it was hard as an individual to research the actual effect of the image on Television. Moreover, it was not an interactive medium with viewers as much as the new media and the on-line services of broadcasting companies were included in the area of the Internet.

I did not choose the Internet media because there are already many religious web sites compared to multimedia. In addition, it is still difficult to use many dynamic methods for the Internet. Very recently, people have been able to see religious services from the Internet without difficulty. Jung-Ahng Daily News in Korea recommended 159 sites related to Buddhism. Most of big temples and churches have web sites and they helped me in many ways during the research. Nevertheless, none of the sites used dynamic applications.

Progress of project

Brainstorming

1. Topic: Ten Bulls of Zen

The *Ten Bulls of Zen* is the one of the most important and classic themes in Zen teaching. While studying the basic concepts of Zen, I happened to learn the *Ten Bulls of Zen*. It seemed to be a perfect subject to express the variety of multimedia, as opposed to other educational poems, stories, and paintings in Zen teaching.

First, these ten paintings include all of the most important notions and progress in Buddhism. They show what Buddhism is, how to accomplish the enlightenment, and how to help others who do not know the enjoyment of the enlightenment.

It is a complex of paintings, poems and short essays. As a result, it has more opportunities to express it in various ways. For example, the simple paintings could be an animation or game. Otherwise, the poems could be songs. There are many possibilities, indeed.

A complete story is in these charming paintings. Even though Zen is very hard philosophy to understand, these pictures help it seem easier to learn. If you look at other pictures and poems about Zen, you will be easily confused. These are examples called Wha-Do in Korean.

'What is a thing that goes, comes, and talks?'

'How can you put out a bird in a bottle without breaking it?'

2. Contents

The main idea was a virtual reality game by Flash actionscript at the beginning of the project. *Ten Bulls of Zen* is a story where a person wanders to find a bull lost in a forest. It symbolizes that people should find their true selves. The second picture, which is the motive of the game, shows the person looking for a bull, which is his true self. Yet that is a useless effort because it is always in him, not in the forest. However, it would be hard to understand one painting without knowing whole pictures and a story. It was necessary to keep the entire paintings in one piece.

Other than that, there are sections, such as traditional Buddhism and audio files, included. *Ten Bulls of Zen* is too hard to understand not only for Westerners, but also for Asians. Furthermore, Zen is the most complicated notion in Buddhism. That is, it is impossible to understand Zen without studying the background of Buddhism.

Teaching Zen perfectly is not a goal of this project. This is an introductory educational product for people who have not known Zen before. In other words, the final goal of this project is to give chances to people to casually access Zen.

3. Application

Why Flash? Many use Flash for CD-ROMs other than Director, but it can be used for the Internet, too. Today, web sites do not have dynamic movements and large audio files less than CD-ROM titles, because of speed. Many people still use modems to access the Internet and feel that is enough for their budget. For people like this, web sites that have large files are useless. One of the most important aspects of popular web sites is a simple structure with small files. They do have features like movie files, but they are in separate sections for people who use high-speed Internet service.

However, high-speed lines will eventually be used by most users, and the time will come when all sites can use the multimedia contents made in Flash. According to a report announced by FCC (The Federal

Communications Commission) on July 23 in 2002, users of high-speed Internet lines increased 33 percent from 9.6 million to 12.8 million during the second half of 2001.

Technical Methods	Number of Users			Rate of increase	
	12/2000	6/2001	12/2001	12/2000~6/2001	6/2001~12/2001
ADSL	1,977,101	2,693,834	3,947,808	36%	47%
Other wireline	1,021,291	1,088,066	1,078,597	7	-1
Coaxial cable	3,582,874	5,184,141	7,059,598	45	36
Fiber	376,203	455,593	494,199	21	8
Satellite or fixed wireless	112,405	194,707	212,610	73	9
Total lines	7,069,874	9,616,341	12,792,812	36%	33%

For these reasons, Flash seemed a more interesting tool than Director at the time.

4. Design and Color Motives

The motive of the project is 'Asia' other than the specific image of Korea, China, or Japan. Buddhism and Asian culture are very significant sources for tourism in Asian countries. If the majority of viewers of the project were people other than Asians, it would be important to make it in Asian-style to rouse their interests. Because the goal of the project is the **experience** of Zen and Buddhism, it seemed good to me to use just a general Asian image. The majority of the western world only knows the Japanese Zen style as an artistic movement. Actually, what they think as Zen style is not exactly Zen style. Many of the art works in one book about Zen art were pieces that have little relation to Zen. It was more about Japanese art works. What if I created neutral images of Asia upon Zen style that people are familiar with? The result is not really satisfying to me now, but it would be a later goal for other my projects.

Besides, Asian paintings are smooth and transparent, and vector images are very clean and simple. Therefore, the main problem was to make these vector images look like Asian paintings. To do so, I researched Asian paintings, drew every picture in Flash by hand, and layered transparent images to give a water impression.

Production

Format

- EXE and swf Flash files (with autostart)
- 800x600 pixel
- Full-Screen

Style

- Strong red background with black text that is occasionally vertical
- Asian paintings, hand drawings

Contents

- Ten Bulls of Zen--each ten sections: paintings, annotations, and comments
- Basic lecture on Buddhism
- Sutra: Audio file of reading Sutra
- About Zen
- General information about Ten Bulls of Zen
- Meditation

Interface

- Flow chart

Troubleshooting

1. Action script

The foremost problem was that I had not studied complex actionscript before. Because my objective was to create a game working through actionscript, it was urgent to study how some specific actionscripts work.

In the beginning, I concentrated on placing trees in a row.

```
spacing = 100;
plantLocx = 0;
plantLocy = 0;
count = 0;
totaltrees = 12;
function placetree() {
    count++;

    for (i=0; i<=totaltrees; i++) {
        _root.forest.trees.attachMovie("tree1", "plant"+i, i);
        if (i<1) {
            _root.forest["plant"+i]._x = plantLocx;
            _root.forest["plant"+count]._y = plantLocy;
        } else {
            if (i>totaltrees*.5){
                for (j=0; j<(totaltrees*.5); j++){
                    _root.forest["plant"+i]._x = (plantLocx*i)+20;
                    _root.forest["plant"+i]._y = plantLocy*i;
                }
            } else {
                _root.forest["plant"+i]._x = plantLocx*i;
                _root.forest["plant"+i]._y = plantLocy*i;
            }
        }
    }
}
```

However, this wasn't enough to place trees in a good shape.

```
xorigin = -50;
yorigin = -80;
yspacing = 20;
xspacing = 200;
scaling = 20;
ymovetotal = 10;
columns = 2;
totaltrees = 4;

function placetree() {
    for (i=0; i<columns; i++) {
        for (j=1; j<=totaltrees; j++) {
            n = (i*totaltrees)+j;
            nm = "plant"+n;
            if (n>=0) {
                _root.forest.trees.attachMovie("tree1", [nm], n);
            }
        }
        myRandomNum = myRandom(0, 20);
        _root.forest.trees[nm]._x = xorigin+((i*xspacing)+myRandomNum);
    }
}
```

```

        if (n<=3) {
            xspacing = xspacing-30;
            _root.forest.trees[nm]._x = xorigin+((i*xspacing)+myRandomNum);
        } else {
            xspacing = xspacing+30;
            _root.forest.trees[nm]._x = xorigin+((i*xspacing)+myRandomNum);
        }
        root.forest.trees[nm]._y = yorigin+(j*yspacing);
        _root.forest.trees[nm]._xscale = (j*scaling);
        _root.forest.trees[nm]._yscale = (j*scaling);
        _root.forest.trees[nm]._alpha = (j*scaling);
    }
}

function myRandom(minval, MaxVal) {
    return minVal+math.floor(Math.random()*(maxval+1-minVal));
}

function movetree() {
    for (i=0; i<columns; i++) {
        for (j=0; j<=totaltrees; j++) {
            n = (i*totaltrees)+j;
            nm = "plant"+n;
            (ymovetotal*j)*-1;
            _root.forest.trees[nm]._xscale =
            _root.forest.trees[nm]._xscale+(ymovetotal*j)*2;
            _root.forest.trees[nm]._yscale =
            _root.forest.trees[nm]._yscale+(ymovetotal*j)*2;
            if (n<4) {
                _root.forest.trees[nm]._x = _root.forest.trees[nm]._x-
                (ymovetotal*j)*5;
            } else {
                _root.forest.trees[nm]._x = _root.forest.trees[nm]._x+
                (ymovetotal*j)*-5;
            }
        }
    }
}

placetree();

```

During this process, I discovered that Flash actionscript is more complicated than I thought it would be, even though it was not high-level actionscript. It forced me to think about what the designer's role is in multimedia projects. Which skill set is more important to the outcome of a project--design or programming? To be an expert in both is not an easy task,, and I presume that it is up to an individual designer how much programming he or she gets into.

The second problem with scripting was that the movements and arrangement of movieclips were hard to control compared to the animated scenes. At this point, I found an error. It worked if I place trees in the right positions. Nevertheless, it was too hard to calculate their movements to look natural when they were moving.

At this point, I had to choose the best way to present this movement. One was the way I had already tried, and the other was a frame-by-frame animation. I believed it was not possible to continue using the first

method with my limited actionscript knowledge by that time, and decided to change plans. It was much more efficient to make a walking scene with the animation than to calculate the movements of clips. When you change the directions, it would jump the scene like below.



In the case of the animation, there was also the problem of directions, as this game only has a “proceed” button. When it has multi-directional buttons, it would look unnatural while it changed movie clips. Thus, a scripted game would be more suitable.

2. Contents

After I completed the game, my advisors said that the project did not contain many facts about multimedia, because I only had a game for multimedia in the beginning. I realized that it was not enough to present it as a multimedia work, as well. After a second brainstorming session, I added the voice annotations, Sutra album, one animation, and meditation sections. Especially, the section for meditation presented the many benefits of multimedia.

As I have said several times before, Zen is one of the most difficult philosophies in Buddhism, so a person who has not studied it for a long time can hardly teach people about it or even discuss it. It was not so different for me, too. I have had many problems while studying it. The contents in the project may not seem correct if monks looked at it. In the real projects of a commercial company or Buddhism organizations, however, it will not be a problem as long as they had some specialists in Buddhism available.

Summary

Most of the testers suggested that the piece should contain more entertainment. They felt that some entertainment would give users more of a motive to explore the religious pieces and would help ensure that they would not become bored before fully exploring them. Some wanted the project to be more fun and less educational. Although it was a religious piece, most people expected more entertainment, considering the multimedia format.

Furthermore, some testers said it would be better to give users a more compelling reason to look through the contents in the right order. They did not feel that the storyline was tempting enough for them to go straight to the next chapter. Some pointed out that a more robust cascade could have improved this aspect of the project.

In the process of obtaining this feedback, I learned that the external sound links in the project do not work properly on Windows XP operating systems. All of the users who had Window XP systems complained that they could not hear any sounds except for when they clicked the buttons.

