Study of Art–based Research Interacted with Digital Technology to Enhance Cultural Representation

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Abstract

The innovation of digital devices has revolutionized the status quo of image design in relation to art-based research, the way in which the image designers converge sound and images with innovative technology. Theoretically this study is influenced by Lev Manovich who addressed to numerical representation, modularity, automation, variability, and transcoding written in *The Language of the New Media* in 2001. The researcher here employs three case studies to discuss two main questions: How do we exhibit the cultural texts interacted with new technology for transcoding symbols? Could we create artistic practices in combining sounds, images and the cultural texts in terms of the meta-interpretation approach?

The researcher has dealt with textual visualization for representing literal or historical texts in associated with creating exhibits to preserving the Oriental cultural heritage for years. Her studies especially focused on meeting foreign culture variability and its semiotic transcoding in conducting digital cultural representation. Through applying digital technology, the meta-relationship is revealed amidst the reproduction of cultural texts as exhibit objects, art-based media, and the interpreters to reinforce interaction among them.

Within this study, the researcher appropriated Rabindranath Tagore's (1861-1941 A. D.) poem—[My song] to resonate her reflection and insights retrieved from the first Indian trip to investigate Hinduism and Buddhism cultural heritage in the heading of a documentary film, entitled as [Seeking the Answer]. It served here as

the act of her meta-interpretation of Indian culture as a foreigner who has intertwined poetry, image and background narrator underlying the inter-textual approach. In addition, the researcher has recently focused on design innovation of the new media. The researcher intends to use flexible electronic materials to create digital exhibit objectives, which converge sound and images through the use of innovative technology—flexible speaker—to recall her memory of the earlier Indian trips.

Therefore, the cultural texts are decoded and transcoded into specific images and films, and exhibits to introduce the underlying cultural signification, as well as with sound effects to stimulate viewers' imagination of the time and the underlying environment between the past and the present. As the result, the artworks do help viewers/audiences to realize the significance of diverse elements of sounds, images and texts in relation to its cultural-heritage representation, in the hope of finding new angles of viewers-audiences' interpretations.

Keywords: Art-based research, digital technology, cultural representation, meta-interpretation

1. Introduction

Digitalized sound and Image technologies intertwined within new media arts are flourishing in the 21st century, which have great effects on modern life and contemporary art practices. The digital representation becomes the dominant form in the cultural and art-based research, because of its appealing characteristics, such as numerical representation, modularity, automation, variability, and transcoding (Manovich, 2001), which interacts with multiple professions and disciplines. In addition, the invention of digital devices and contents has revolutionized the quality of sound, image, and raw data, the way in which these texts are contemplated, and the forms of art that produce activities and aesthetics concepts. All objects, whether they are created from scratch on computers or converted from analog media sources, are composed of digital codes. And, there are three notions in conducting digital representation as follows:

1.1. Embracing variability

Through the image producing, digital coding, fast-and-amount outputting and

re-presentation easily of computerization, the digital images took on the crossing type hybrid. They created a new thinking and watching mode of images. Moreover, they became a new method of communication of the contemporary arts creations. The structures of hybrid could show out different levels so that image media could divide into digital photography, digital recording and computer graphics (Tsao, 2007). Through the digital retouching, the creations could edit with misplacement, collage and combination. The creations showed the regions, sources, types and visual hybrid. The shift of all of our culture to digitalization, the sense mode, image concepts, social cultures have the great impact.

1.2. Hyper-textual interaction

Hypertext is a particular case of new media, which converges media types — text of words, images and sounds. It causes alterative readings which will take up the differences between a computer screen and preceding its representational conventions and technologies. This is consistent with a general trend in modern society towards presenting more and more information in the form of time-based audio-visual moving image sequences, rather than as text. As new generations of both computer users are growing up in a media-rich environment dominated by e-devices rather than by printed texts, it is not surprising that they favor cinematic language over the language of print. Cinematic ways of seeing the world, of structuring time, of narrating a story, of linking one experience to the next, are being extended to become the basic ways in which digital users access and interact with all cultural texts.

1.3. Transcoded into hyper-real

The theory of simulations of Jean Baudrillard has influenced contemporary new media arts and design (Baudrillard, 1994; original work published in 1981). Through the digital devices and the cross platform of images and sounds, the reproduction of contemporary images and sounds leads to hyper-real scenes for their viewers and audiences through the deconstruction, collage, appropriation of the original historical or documentary data. The creator may transform the raw data into the synthesis of art and design objects. In semiotic terms, the digital interface acts as a code that carries not texts, music and visual senses but simulations. Under this concern, the researcher develops steps for enhancing the innovation and sustainability in providing long-term digitalized access to those substantial data of culture as follows: meeting variability, semiotic transcoding, and developing interaction through the meta-interpretation of viewers/audiences. In the performed semiotic analysis, the digital devices and artworks allow them to realize the significance of diverse elements of sounds, images

and data in relation to its embedded cultural heritage. Dealing with the different viewed aspects, diverse interactions, polysemous decoding of creations, this art-based research stands for the meta-interpretation approach. On the other hand, the researcher as the creator who employ the digital devices and the cross platform of images and sounds, the structural difference of digital media, and the rise of innovative digital interface, creates new state. Sharing the interests in the oriental cultures, the study here is also shown as another interdisciplinary example based on using digital image media to interpret the beauty of Chinese and Indian lyrical texts or literary works. It represents as the ways to preserve and represent the oriental cultures.

2. Research methodology

Every time we interpret an object or image around us, whether conscious or not, we are using the tools of the semiotics to interpret its signification. This kind of semiotic study emphasizes connections among viewers, content, and cultural context. A *triadic relation* or a *ternary relation* is an important special case in the semiotics. That is, the semiotics treats of a 3-place relation among *signs*, their *objects*, and their *interpreters* (Su, 2013). Instead of treating each component as a separate entity, the researcher seeks correspondences.

The principles of semiotics were formulated by American philosopher Charles Peirce (1839-1914 A.D.) in the late nineteenth century and Swiss linguist Ferdinand de Saussure (1857-1913 A.D.) in the early twentieth century. Both proposed important theories. In generally speaking, any a sign depends on conventions and codes for its meanings. "Saussure argued that the relationship between a word (or the sound of that word when spoken) and things in the world is arbitrary and relative, not fixed" (Sturken & Cartwright, 2001, p. 28). Saussure asserted that meanings change according to context and to the rules of language. On the other hand, Peirce emphasized on the processes of sign interpretation. "Meaning resides not in the initial perception of a sign, but in the interpretation of the perception and subsequent action based on that perception" (Sturken & Cartwright, 2001, p. 28). Saussure's idea help the reader or viewers understand visual systems of representation, and Peirce's concepts subsequently have been used for visual analysis. Both of them are critical for the researcher to facilitate her analysis of the semiotics later in this study.

Exploring Saussure's idea, followers like Roland Barthes (1915-1980 A.D.) have

established a semiotic model for cultural study since the late 60s' of the 20th century (Barthes, 1967 & 1972). In Barthes's model, a sign is composed of the *signifier,* a sound, written word, or image, in addition to the two levels of meaning of denotation and connotation (that is *signified*). All the concepts of certain an expressive form are evoked underlying the process of signification (Table 1).
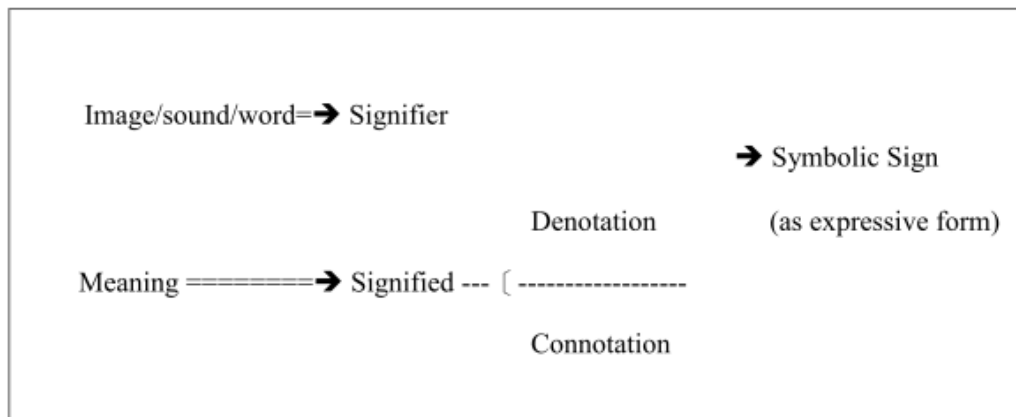
Image/sound/word=➜ Signifier

➜ Symbolic Sign

Denotation   (as expressive form)

Meaning ========➜ Signified --- ⌈ ------------------

Connotation

Table 1. The signification

Barthes's model is useful in examining how objects or images construct meanings: first, the sign is divided into a signifier; next, a signified later can show us that a variety of images can convey many different levels of meaning. Hence, a sign is a meaningful form or expression.

We live in a world full of signs. We use semiotics all the time without labeling it. And it is the labor of our interpretation that makes meaning of those signs. The production of a sign is dependent on social, historical, and cultural context. Without recognizing our interpretative acts, we bring to our signification cultural knowledge. It is also dependent on the context in which the meaning is presented (in a museum gallery, journal or a magazine, for instance), and the viewers who interpret it.

In other words, an image or object is encoded with meaning in its creation or production; it is further encoded when it is placed in given setting or context. Stuart Hall (1997) asserts there are three standing points for all viewers to read, such as dominant-hegemonic reading, negotiated reading, and oppositional reading. First of

all, viewers who take the dominant-hegemonic position can be said to decode images in a relatively passive manner. Viewers accept the clues about their dominant meaning of images. Second, negotiation and opposition are more useful to us. We can think of the term "negotiation" as a kind of bargaining over meaning that takes place among viewer, image, and context. The way of "negotiation" allows us to undertake a struggle in the process of cultural interpretation. Readers become active meaning-makers instead of passive recipients in the process of decoding cultural images. Third, an oppositional reading might read the image or object critically as an example of creating a counter-hegemonic statement to the dominant ideology.

Therefore, viewers need opportunities to broaden their experiences and achieve a balance of intellect, imagination, and expression by enriching the capacity for reflection, perception, and insight. The process of inner growth can fuel a path of evolving integration. The semiotics reading teaches us to exhibit spontaneity and employ critical thinking in cultural interpretation.

The research approach is based on the use of semiotic analysis. The researcher later will employ case studies to discuss the following questions: How do we exhibit the inter-textual texts, including sounds, images and archive data? Could we create artistic practices in combining sounds, images and the texts in terms of the meta-interpretation approach? Therefore, the cultural-lyrical data are visualized and transcoded into specific images and films, and graphics to introduce the significances of those embedded cultural heritage, as well as with sound effects to stimulate viewers' imagination of the events, the time and the underlying environment between the past time and the present.

3. Cultural representation in practices

The researcher has getting involved in art creation as well as supervised graduate students in the Lab of Zen and Cultural Creative Pedagogy that has dealt with textual visualization in representing the Oriental cultural heritages for a decade. There are three steps included within later art-based researches and practices to enhance the innovation and sustainability in providing long-term digitalized access to cultural heritage as follows: meeting variability, semiotic transcoding, and deriving connotation through meta-interpretation (Su, 2015).

3.1. Meeting variability for interpreting

The semiotic study of art and culture in India today represents a cross-cultural perspective from Taiwan that analyzes some documentary images created by the researcher. In her Investigation of eight Buddhist historical sites and visit of three biggest museums of India since the January of 2006, the researcher tried to use her camera and camcorder to catch the meaningful and inspiring details during her Indian trips. The investigation of the cultural and historical sites include visiting certain locations in Sankasia, Lucknow, Sravasti, Kushinagar, Sarnath, Boddhigaya, Nalanda, and Vaishali in the Uttar Pradesh of India as well as Lumbini in today's Nepal (see Table 2). During the trip, the researcher also visited three biggest museums of India: The National Museum in New Delhi, the Indian Museum in Calcutta, and Patna Museum. During the years of 2006-2007, she visited many significant cultural and holy sites along the Ganga River from Varanasi, via New Delhi, Agra, Haridwar, Rishikesh, Dehra Dun toward the Himalayas (see Table 3). She tried to make the language of the films which shows how travelers interact with the local natural sight, the geographical origin, the people, the religion, and the local social culture. She hoped this will form to an educational significance, while she demonstrates the results derived from the field study to the academics and her students in Taiwan.

Based upon those practices above, the researcher further conducted an essay in regard of the theme: "India and Taiwan: Growing Cultural and Educational Ties," and presents it in the international conference of "Taiwan Today: Perspectives from India," held by Delhi University in 2007. The researcher employed the methodology of the semiotics to interpret both the textual and contextual meanings of those photos and shots from the documentary film she made about Hinduism, Buddhism, other holy religions, things, and culture in the contemporary India. The essay addresses that the practice has impacts and great influences on its Taiwanese audience, and the researcher would bring the results to be reviewed by the Indian academics. In return, a cross-cultural examination of the growing cultural and educational ties between India and Taiwan has been apparently shown.

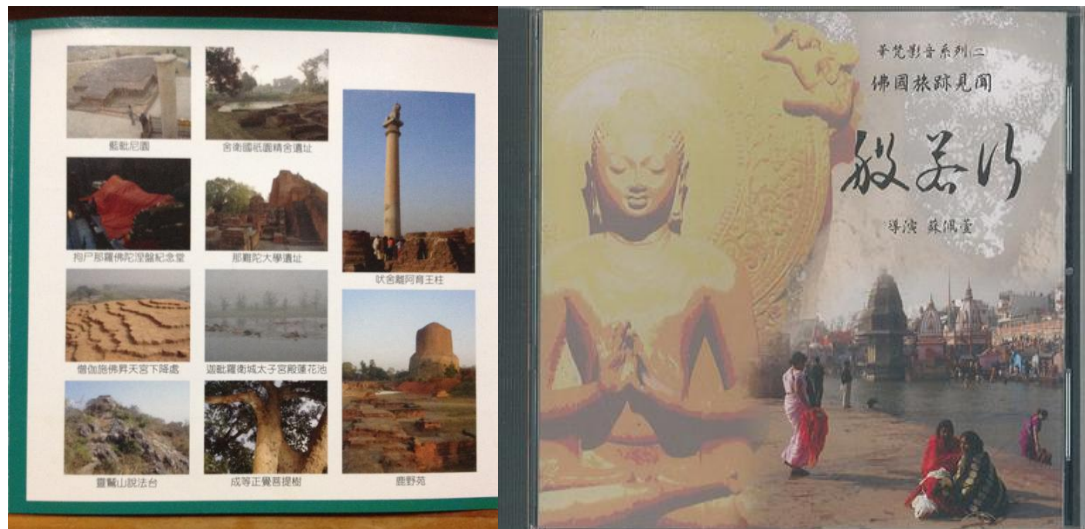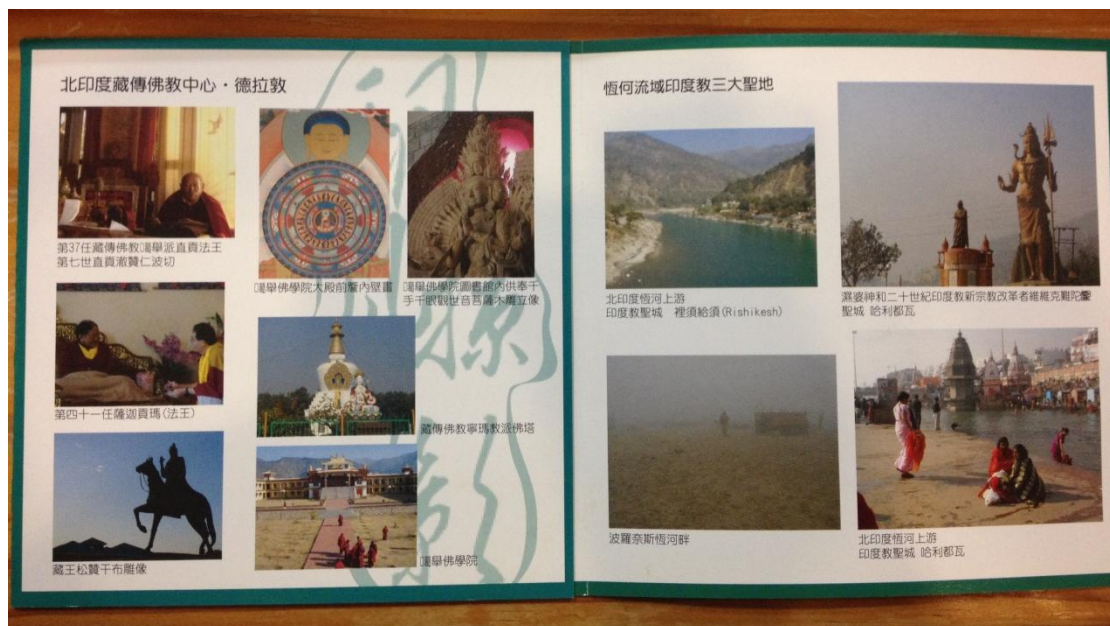Table 2. Photographs of Su's Northern-east India trip during 2006-2007

Table 3. Photographs of Su's Northern India trip in 2007

3.2. Semiotic transcoding for interpreting

Based on the cultural field study and art–based research mentioned above, the researcher later conducted two documentary films; in particular, she appropriated Rabindranath Tagore's (1861-1941 A. D.) poem—【My song】written in *The Crescent Moon* to resonate her reflection and insights retrieved from the first Indian trip to investigate Hinduism and Buddhism cultural heritage in the heading of the film, entitled as【Seeking the Answer】.

The original literary text of【My song】is listed as follows:

This song of mine will wind its music around you, my child, like the fond arms of love.

This song of mine will touch your forehead like a kiss of blessing.

When you are alone it will sit by your side and whisper in your ear,

When you are in the crowd it will fence you about with aloofness.

My song will be like a pair of wings to your dreams.

It will transport your heart to the verge of the unknown.

It will be like the faithful star overhead when dark night is over your road.

My song will sit in the pupils of your eyes, and will carry your sight into the heart of things.

And, when my voice is silent in death, my song will speak in your living heart.

Heading of【Seeking the Answer】serves here as the act of intertwining poetry, image and background narrator in the inter-textual approach (see Table 4). The images of the heading have denoted Indian life near the northeast India in terms of snapshots of Su's photography and video shooting. The symbols within the heading include the sculpture of Prince Siddhartha preserved in National Museum in New Delhi, Ashoka Pillar preserved in Vaishali, Jain temple in Calcutta, etc., which have been used to address to the conservation of cultural heritage in India today (Su, 2008).

Table 4. Analyzing how to intertwine poetry, image and background narrator

4-1 Images/ clips of the film		
Signifiers→ Signified	The villagers and children gathering	The village children surrounding
Texts of poetry /background narrator	"will wind its music around you, my child,"	"like the fond arms of love."

4-2 Images/ clips of the film		
Signifiers→ Signified	Sculpture of Prince Siddhartha (preserved in National Museum in New Delhi, India)→ symbol of Shakyamuni Buddha	Ashoka Pillar (preserved in Vaishali, India) → symbol of the territory of Buddhist teaching
Texts of poetry /background narrator	"it will sit by your side and whisper in your ear,"	"and will carry your sight into the heart of things."

4-3 Images/ clips of the film		
Signifiers→ Signified	Lotus floating above the water as a metaphor signified the worship of inner spiritual purity	Jain temple in Calcutta, India → symbol of the multiplicity and ornateness of Indian religious culture
Texts of poetry /background narrator	"And when my voice is silent in death,"	"my song will speak in your living heart."

In particular, the symbols of lotus flower (padma) and a cross-legged sitting posture named "lotus posture" (written as "Padmasanam" in Sanskrit) mean that one is engaged in meditative practices. The lotus and lotus posture are signifiers that demonstrate an established part of the Hindu Yoga tradition, Zen and other meditative disciplines. In this position the right foot is placed on the left thigh and the left foot on the right thigh with the soles of the feet turned up and the spine, straightly. The position is said to resemble a lotus, encourage "proper" breathing and foster physical stability.

To its extent, the lotus flower under the one's body also represents his or her purity of body, speech, and mind; floating above the muddy waters of attachment and

desire, the lotus is significant sign and has subtle connotation revealed in Indian art and culture. It is a common symbol that signifies how to purify oneself in this mortal world, how to dispel or release the mundane attachments, and then to achieve one's enlightenment. For example, the lotus icons decorated on the Dhamekh Stupa, Sarnath, to represent how Lotus flowers float above the water (see Figure 1).

Figure 1. Lotus decorated on the Dhamekh Stupa, Sarnath.

Interestingly, when shooting the image in Sravasti as below, a tiny piece of the holy relic of Shakyamuni Buddha is as small as the top of a pointer shown in the picture (Figures 2 & 3). The piece of the holy relic simulatively represents the body-image of Shakyamuni Buddha sitting on the blooming lotus. However, the piece of the holy relic is not only signifying a diminished mortal, but also simulation. All things are impermanent. That the perception of a constant "self" is an illusion.

In addition, in regard of the study of understanding Indian art and culture, the pragmatic and semantic practices of looking applied here do not merely give the viewers/audience the journal records, or a short reaction. Rather, the semiotic "readings" also interpret the connotative meanings of symbols in relation to its holly religion and the life impress of Hindu people, which lead everybody to rethink his or her life quality and the potential of art creation existed everywhere and every moment in our life.

Figure 2. A holy relic of Shakyamuni Buddha put on a bronze lotus base, Sravasti.

Figure 3. A pointer showing the holy relic of Shakyamuni Buddha in Sravasti.

3.3. Deriving connotation form meta-interpretation

The work of detecting social, cultural, and historical meanings in artifacts and images often happens without our being aware of the process while looking at the images. On the other hand, we tend to unconsciously perceive the value to be in a culture at large, which determines how the information we bring to read those objects. This raises the question: what gives an artifact image social or cultural value? Neither artifacts or images have values in and of themselves; they are awarded different kinds

of value—monetary, social, religious or cultural—in particular social contexts (Sturken & Cartwright, 2001).

Therefore, one purpose of conducting a semiotic-cultural study is to depict the meanings of contents in a certain context. On the subcontinent of South Asia, people live in the land called as "Bharata." Intruded by Ayrians about 1500 B.C., Mongolian in the 12th century, and Christians in the 18th century, they have developed a complex civilization underlying the interactions among multiple ethnic, religious and social groups and castes, since Vedic Age (1500-800 B.C.) till today along the Ganga River (Wang, 2004). Thus, there exists the complicated usage of language for diverse groups of people; 17 official languages have been used in the contemporary India which is derived from Indo-European, Dravidian, Titeto-Burman and Austro-Asiatic language systems (Shattuck, 1999). It is a multi-ethnic society.

In addition, it is such a religious country; people in India construct their life styles fully engaged in multifaceted religious practices. At least seven different kinds of religion dominate the way of Indian people's thinking and behaving for ages; it then divides groups of people into Hindu (85%), Islamist (10%), Christians (2%), Sikhs (1.7%), Buddhist (0.5%), Jain (0.5%), and Persia (0.3%) (Kao, 1993). The majority of population is the Hindu. They are the followers of Hinduism that divided themselves into four varna: brahman, kshatriya, vaishyas, and shudras. The culture in which Hindu People live is an arena of diverse and often conflicting ideologies. However, to varying degrees, all cultures are in flux and constantly in the process of being reinvented through cultural representations.

The variety and inclusivism revealed above have become the major characters of Indian culture, and these perspectives have further been shared with the field of the arts in India. Sharing the theory of "Samsara" (transmigration) and the idea of "Karma" or "Brahman," most of religion in India have preached very similar ways that help human beings purify their mind and pursue the highest spiritual goal—moksha—by achieving the unification of "Brahman" and "Atman" according to the teaching of *Upanishads* (600-300 B.C.) (Shattuck, 1999). We can easily find the shared beliefs among Hinduism, Sikhism, Buddhism, Jainism, etc. For example, a religious person who gets involved in the unification of "Brahman" and "Atman" may transform oneself into the state of "Nirvana" based upon the teaching of Shakyamuni Buddha.

From the ancient to the contemporary India, from the origin to later the development, the implication of Buddhist ethos has mixed with the mainstream influences derived from the Hinduism. The implication of Buddhist ethos is then recognized as a useful notion: the possession of multifaceted qualities presents a breadth of creative possibility in India today.

For instance, there are three main characteristics of Buddhist arts and culture in India: the applications of symbolism, ornateness, and formularization, revealed in traditional anonymous Buddhist arts (Wang, 2004; Su, 2007). Constrained by the doctrine and philosophy of Buddhism, formularized Buddhist arts depict a tranquil world that emphasizes balance and harmony of one's inner self with the universe. Through the practice of introspection and mediation, a Buddhist may worship any formularized religious objects or images as the symbol of Buddha or Bodhisattvas, by consequently thinking of the enlightened model, in order to purify one's soul. Therefore, Buddhist arts serve as symbolic media of transformation even though simple and rough. Sometimes, we may find out luxury decoration surround Buddhist arts showing off the favor of ornateness (see Figure 4). It is usually influenced by the taste of the Hindu. By looking at the series of bells, the layers of colorful cover and the clusters of golden flowers and leaves, a neat spiritual object can mix with exaggerate, trivial and elaborate patterns of decoration that demonstrate certain a possibility of overlapping the opposite extremes of ethos (Chang, 2004).

Figure 4. Buddha in the birth place of Maitrey, Sankasia.

3.4. Reflection on this semiotic study

An image creates meaning in the moment that it's received by a viewer, and interpreted. The meaning of images changes according to different context (age, class, gender, religion, and culture), time, and viewers. Who is the "you" to view those images has critical power to interpret the significance of art and culture. Some of the information we bring to reading those objects has to do with what we perceive their value to be in a culture at large.

The symbolic images discussed above demonstrate a process of change quite nicely by playing on accepted conventions of representation to make us aware of the almost arbitrary connections we took for granted between codes and their meaning in the study of art and culture. We realize that we, as foreign visitors, are trained to read for those religious codes such as aspect of the image that signify specific cultural meanings. As a result, a cultural-borrowing process generates and activates the interaction between both India and Taiwan. Apparently, film and photography are media through which the researcher see reinforced ideological constructions in India today. Its impact comes in part from the powerful thought of maintaining variety and inclusivism.

On the other hand, the researcher asserts that everything in the life path is the subject of the creation. Su's experience tells that "winding road gets to fine places (曲徑通幽)." It means the non-straightforward life attitude and aesthetics shows the wisdom from the traditional Chinese philosophy of Taoism (道). That is, if you don't stick with your straightforward life style, and you know how to adjust to your life, you will find the creation and surprise in the life. Su's art-based research in relation to Indian cultural study and later the "work at leisure" as documentary image designs are also good examples of proving Taoist life philosophy and points.

## 4. Transform from the semiotic study interacted with technology

The researcher recently has focused on design innovation. The researcher intends to use a kind of flexible electronic materials to create digital exhibit objectives, which deal with the convergence of sound and images with innovative technology of flexible speaker (i.e. FleXpeaker™), to recall her memory of the earlier Indian trips.

4.1. FleXpeaker™ as an innovative electronic material

It developed by Flexible Electronics Pilot Lab of the Industrial Technology Research Institute (ITRI), Taiwan; FleXpeaker™ is one of flexible electronics applications, which helps ITRI received the Wall Street Journal's 2009 Technology Innovation Award. There are numerous technologies and products related to flexible electronics; flexible electronics is general term for using organic material, printing manufacturing process, Electronic Circuit, Optoelectronic Components, or the technology of setting on Flexible Substrate with low cost and the characteristics of being flexible (Yeh, 2011). The technology utilizes paper and metal layers as the material with a thickness of less than 0.1 cm (see Figure 5) and uses standard printing for large-size paper-thin flexible speaker mass production. The great sound quality covers a range of 20 to 200 kHz. It is especially good for high-frequency sounds such as the chirps of birds and insects, where fidelity equals or exceeds that of conventional speakers (ITRI, 2012).

In addition, the FleXpeaker™ uses only 10% as much power of conventional speakers, making it environmentally friendly. The new technology will bring the acoustic speaker industry into a brand-new era, and help create revolutionary consumer products such as memory cards with voice capabilities and ultra-thin MP3 players. It could even be incorporated into other products that are integrated into green buildings, electric vehicles, entertainment, medical devices, and any exhibit spaces (see Figure 6 & 7). The technology of FleXpeaker™ will help create new lifestyles and cater to the pursuit of personalized, humanized applications (ITRI, 2012/ 2015) (see Figure 8). For instance, Pei-Hsuan Su creates new lifestyle video-audio cater, in which a piece of FleXpeaker™ is installed and presenting Su's artworks on both sides in her studio, to the pursuit of personalized applications (see Figure 9).

正視圖   側視圖

B2

B4
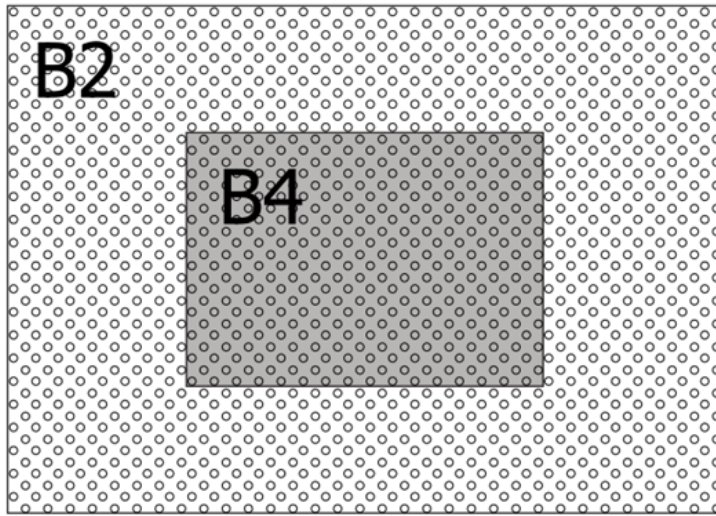
Figure 5. The outlook of FleXpeaker™: the front view (Left) and the side view
(Right)

FleXpeaker™

Figure 6 &7. Several FleXpeaker™ has served as exhibit caters installed in the Sun
Yun-Suan Memorial Museum , Taipei

Figure 8. One FleXpeaker™ has been hanging on the wall in the Lecture Hall of ITRI
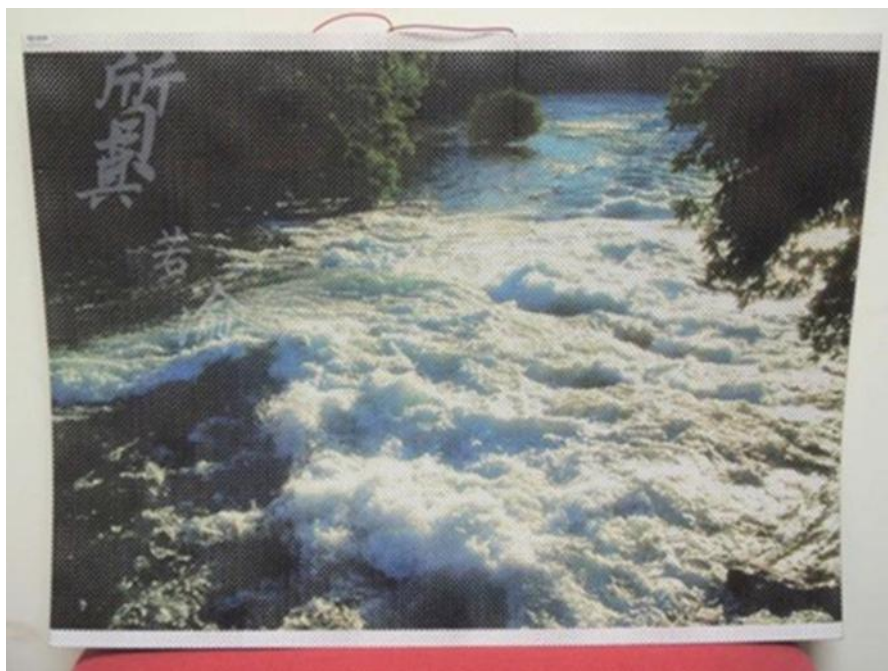

Figure 9. Pei-Hsuan Su 's image design works are printed on both sides of a flexible speaker installed in her studio.

4.2. Semiotic transcoding for image creation

For remarking her impression of the Indian culture, the researcher firstly has appropriated several sceneries of local life and activities about Hindu people in India, such as: photography shooting village people with ox or horse-drawn carriage, and the riverside of the holly city Haridwar (see Figure 10-12). Those photographs represent a

large mass of the Indian People who live under the middle or the bottom of the Hindu caste system. Their daily lives are full of labors, and they gather together to visit any holly sites, for example the Haridwar, along the Ganga River to purify their souls for salvation.

Figure 10. Village people with ox-drawn carriage in Sravasti, India.

In addition, she also cropped one particular lotus icon derived from the pattern decorated on the Dhamekh Stupa in Sarnath (see above Figure 1) to represent the symbolic meaning of purifying oneself (see Table 5). Lotus means "the flower of life" in the Hinduism. In other words, lotus served as a metaphor signifies that one purifies oneself in the life circle. Furthermore, she cropped a Sanskrit word from the right mudra of Hindu God *Ganesha* (see Figure 13) to represent the symbolic connotation of the enlightened soul (see Table 5). The right hand of Hindu God *Ganesha* posts a particular Hindu mudra that signifies *"God bless you with no fear."* As the matter of facts, the Sanskrit word written on it as a metaphor signifies an audio symbol in relation to the sound "OM" that means the universal vibration. "OM" is the basic sound of the Universe as most Indian people believe. By reading the symbolic "OM" with reminding Hindu God's blessings, the one may carry the enlightened soul into the heart of the Universe.

Figure 11. Village people with horse-drawn carriage in Sravasti, India.

Figure 12. Riverside of the Ganga in Haridwar, India.

Figure 13. An illustration drawing Hindu God –*Ganesha*

Table 5. Hindu symbols and their semiotic meanings

Symbol	Denotation	Connotation
	Lotus flowers flatly float above the water. Lotus as a metaphor signifies the beauty of one's life.	One purifies oneself in the life circle. Lotus means "the flower of life" in Hinduism.
	The Sanskrit word written on the right mudra of Hindu God *Ganesha* signifies *"God bless you with no fear."*	By reading the symbol "OM" with *Ganesha*'s blessings, the one may carry the enlightened soul into the heart of the universe.
	The word as a metaphor signifies an audio symbol referred to the sound "OM."	The sound "OM" means the universal vibration.

4.3. Integration of image and sound with technology

For creating images printed on the paper-thin flexible speaker, the researcher arrangs the lotus icon printed on the front center of the piece. Next, she edits two photographs bearing labor activity of the Indian folks both on the right and left sides of the centual icon; she also puts the riverside secenary of the Haridwar (see Figure 12 above) on the upper side in addition to the natural view of blossoming lotus (Figure 14) on the bottom.
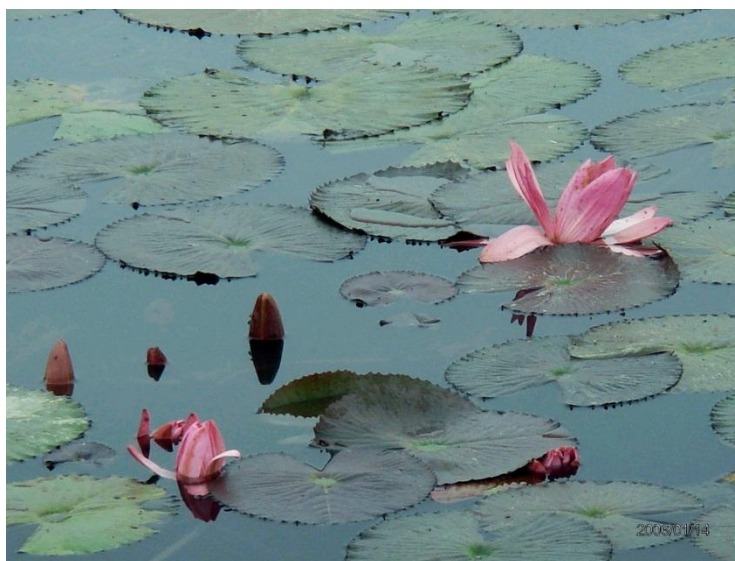

Figure 14. Lotus flowers bloosoms in India.

On the rear side of the flexible speaker, the researcher prints on a simple photograph she took in secluded riverside along the Ganga in Rishikesh, 2007. The image serves as a vehicle to recall her bird-eye view of the sparking sunlight reflected on the river while she standed on a suspension bridage across the Ganga (Figure 15).

She only add one Sanskrit word— ॐ (i.e.“OM”) on the middle of the image. The researcher later creats a symbolic image surronded by glamourous halo, which echoes to the radience of sunlight reflection. Moreover, the researcher edits a short period of Hindustan melody mixed with her vocal reading Tagore’s [My Song], followed by the sound ‘OM’ for the flexible speaker’s broadcasting. By pointing to a blue-tooth audio receiver imbedded on the frame, the viewer/audience may empower the device of FleXpeaker™.

Figure 15. Sparkling sunlight on the Ganga River in Rishikesh, India.

This design object helps its viewers to take part in the experience of converging sound, images and documentary data by mixing a series of contemporary innovative technologies and devices. The reproduction of contemporary sounds and images leads to the hyperreal scenes at the exhibit spaces where sounds and images are produced, copied and stimulated in a way that mimetic cannot be told apart from the original data. Just as "Simulations" of Jean Baudrillard, the digital visual communication media and digital interface changed into various ways and forms. However, it shows the hybrid of contemporary images and sounds. The creations are within the range of the Post-modernism, which stress on the interdisciplinary and inter-textual of semiotic translations.

Therefore, the social-context Indian life and culture are visualized and transcoded into specific images and life photography printed upon both sides of the surface of **FleXpeaker™**, as well as with sound effects to stimulate visitors' imagination of the events, the time and the underlying environment. As the result, the device and image artworks do help ones to realize the significance of diverse elements of sounds, images and data in relation to its cultural representation.

5. Conclusion

Digital media have had a revolutionary impact on the contemporary sound-images producing, social structure and senses of human. According to the progressing of digital media, we had the different aspects and thoughts on creating arts and conducting art-based research. As D. N. Rodowick has mentioned, the trends of contemporary "new media" are fashioned upon a cinematic metaphor, and helping us see how digital technologies are serving (Rodowick, 2007). Each sound and image like a node is an independent existence with intertextuality. The innovation of media has perpetuated the cinematic as the mature audiovisual culture, lasting till the twentieth-first century. And, how we are preparing to embrace the new audiovisual culture whose broad outlines we are only just to distinguish in this era (Rodowick, 2007).

In the performed semiotic analysis, it is encouraged that interested viewers/audiences can be introduced to several kinds of expression of the digital images design or synesthesia design. And, they can be led to deepening their knowledge of material or non-material culture heritage, which bring also the result of improving their understanding of aesthetic connotation. As a result, such a design objective, employing the material of FleXpeaker™, combines images, Hindustan melody and Tagore's poem which is understood as a work holding linguistic sadness, which reveals the limitation of human life. It is based on such approach the viewers/audiences can be expected to realize such association and forming their recognition as well as imagination.

On the other hand, the results suggest the use of visual and sound effects, lighting, and color of the digital design as possible underlying factors for the significant correlations found between personality traits and design preferences in practice. And then, it should open an opportunity among the viewers/audiences to interpret the artworks in person. In addition, the study has to be recognized by its eastern and western viewers/audiences underlying a cross-cultural basis of interpretation. In conclusion, the research would make a contribution to explore new types of cognitive interpretation of oriental cultural heritage, in particular the non-material cultural heritage, and result in a complex interaction between vision and participants' actions in creative design.

As the result, the artworks do help viewers/ audiences to realize the significance of diverse elements of sounds, images and texts in relation to its cultural representation, in the hope to find new angles of interpretation. Therefore, this research is completed for an aim to introduce to the world, for the people interested, to share and appreciate the beauty of oriental Indian culture. The researcher has conducted a cultural study here that is to depict the meanings of contents in a certain context. She tried to combine the content of conventional literature with image and graphic designs of the present modern world to offer images cultural value. This additionally brought the merit of deepening one's understanding of culture. In a sense, those images and texts are the carrier of culture and are the media and tools for the culture interchange between the East and West world.

References

Barthes, R. (1967). *Elements of Semiology* (Trans. by A. Lavers and C. Smith). New York: Hill and Wang.

Baudrillard, Jean. (1994). *Simulacra and Simulation* (Sheila Glaser Trans). U.S: University of Michigan Press. (Original work published in 1981).

Chang, F. (2004). *Introduction of the Aesthetics*. Taipei: Wu-Nan (in Chinese).

Hall, S. (1997). The work of representation, In *Representation: Cultural representations and signifying practices*, S. Hall Ed., London: Sage, pp.13-63.

ITRI. "Kevin Kelly: 'I Was Amazed by ITRI's Innovations.'" No.69, 2nd Quarter 2012. Retrieved from https://www.itri.org.tw/eng/Content/Publications/contents.aspx?&SiteID=1&MmmID=617731525164776565&MSid=617762363015606130

ITRI. "2012 ITRI Forum: New Technologies and Venture Capital." No.69, 2nd Quarter 2012. Retrieved from https://www.itri.org.tw/eng/Content/Publications/contents.aspx?&SiteID=1&MmmID=617731525164776565&MSid=617762362453772447

ITRI_Flexible Electronics Pilot Lab. https://www.itri.org.tw/eng/Content/MsgPic/Contents.aspx?SiteID=1&MmmID=617754414641431112&MSid=617754437633612573 (2015/3/16)

ITRI_ Innovations and Applications_Smart Living_Smart Endpoints_ FleXpeaker™ https://www.itri.org.tw/eng/Content/MsgPic01/Contents.aspx?SiteID=1&MmmID=620651706136357202&MSid=621024025257654754 (2015/3/16)

Kao, M. (1993). *Introduction of Art History of India*. Taipei: National Institute for Compilation and Translation. ISBN:957-9324-87-5 (in Chinese).

Manovich, L. (2001). *The Language of the New Media*. New York: MIT Press.

Rodowick, D. N. (2007). *The Virtual Life of Film*. Harvard University Press.

Shattuck, C. (楊玫寧 Trans.). (1999). *The world of Hinduism 印度教的世界*. Taipei: 貓頭鷹出版社. ISBN: 957-0337-42-7 (in Chinese).

Sturken, M. and Cartwright, L (2001). *Practices of looking: An introduction to visual culture.* New York: Oxford University Press.

Su, P. H. (2007). Study of semiotic reading of Buddhist culture in India today in regard of a cross-cultural perspective from Taiwan. Presented in *Conference on Taiwan Today*. Department of East Asian Studies, University of Delhi, Delhi, India.

Su, P. H. (2013). *Viewers and Codes of Images: A Series of Semiotic Study and the Cross-media Interpretation.* Taipei: Lapen Press. ISBN: 978-986-314-090-0 (in Chinese).

Su, P. H. (2015). *The Digital Innovation of Appropriating Oriental Cultural Heritage in Creative Design.* Presented in the First early career researcher conference in Digital Arts and Humanities Research_Blue Skies Above, Solid Ground Below: Innovation and Sustainability in Digital Humanities, King's College, University of London, UK.

Tsao, H. Y. 曹筱玥（2007/12/1）。〈台灣數位藝術發展史〉。國立台灣美術館－台灣美術丹露專題網站（2016/1/20 瀏覽）。Retrieved from http://taiwaneseart.ntmofa.gov.tw/thesis/5%E5%8F%B0%E7%81%A3%E6%95%B8%E4%BD%8D%E8%97%9D%E8%A1%93%E7%99%BC%E5%B1%95%E5%8F%B2_%E4%B8%AD_.pdf

Wang, U. (2004). *Art of India 印度藝術*. Beijing: Renmin University of China Press. ISBN: 7-300-05427-7/J · 120 (in Chinese).

Yeh, J. C. (2011). The applications of flexible electronics go everywhere in the future, in *CompoTech China*, Oct., pp. 39-41 (in Chinese).