A Study on the Value Change of Digital Image According to Digital Technology

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Abstract — The strategy through visual sense is one of the ways that subject builds the outside world and communicates. The visual sense seems higher level of dependence than the other senses and contributes to inter-communication. For this reason, the desire of image dates back to primitive art and visual image(visual media and visual culture) has dialectically developed in the history of mankind. Visual subject, based on perspective of Renaissance, was moved from God to human beings. Andre Bazin's 'la genese automatique' through technical art has epochally changed the paradigm of visual art and visual culture. From primitive art to photo and film, the image, based on visual sense, has reflected human wish, appealed visual desire and led to evolution of image. In the late 20 century, without dialectical evolution of technology and culture, rapidly progressive digital image has changed social and cultural implication over rational strategy of production and distribution and it strengthened authority of image through visual approach of endless desire. The goal of this study is to analyze the value change of digital image developing a new Renaissance through production, reading, communication, and implication of evolution due to digitalized image, which has evolved as object and tool of desire.

Index Terms — Digital Image, Image, Technology Art, Visual Art

I. INTRODUCTION

After emerging of Homo erectus, the media for interaction and communication developed from gesture to voice, and unfortunately, they were impossible to record, to preserve, to deliver on account of the volatility of media. Visual information is important part of sensory for collecting and analysing information. Human desire of primitive men for recording image as communication tool made the Cussac Cave in 28,000 BC and the Cave of Altamira for recording movement.

As detonator of the Renaissance art, the technique of perspective became viewpoint of visual arts to focus on human being, and they emphasized on reason and rationality. After the age of Aristotle, the principle of the

camera obscura had magnified and led to invent photograph. Walter Benjamin, on Technology Art after the advent of photography, insisted: 'For the first time in world history, mechanical reproduction emancipates the work of art from its parasitical dependence on ritual. To an ever greater degree the work of art reproduced becomes the work of art designed for reproducibility'(Walter Benjamin, *The Work of Art in the Age of Mechanical Reproduction*, Seoul: Gil Books, 2009, p44, 52)

The emergence and proliferation of photography have had a strong influence on presence and method of traditional art and induced it to change and needed to reestablish fundamental perception of the art. Art of Technology, was started by photography, is on the rise as integral methodology through developed technology and generalization. Mechanical reproduction art, which depend on technology categorically, boosts democratic production and consumption of art and demands to establish new values of the art. However, mechanical reproduction is enough to generate some controversy surrounding mechanical reproduction art and artist. Andre Bazin defined photographic conduct as 'la genese automatique' which is metaphysical 'genèse' about controversy of photography. In other words, Bazin stresses that photo is revealed by absence of human being and there are two point of view- 'epistemological point of view' as exhaustively excluded empirical data according to generative processes of photo and 'ontological point of view' placing value on metaphysical being revealing trail of light. And he emphasized that picture which is generated by 'ontological point of view' is creative action of human being using technological characteristic of photo.

Technology art realized by desire of human being is possible to produce in human being's absence because of mechanical characteristic. For this reason, with some controversy on art, questions has arisen about value of original on reproduction. Walter Benjamin claims that 'One might subsume the eliminated element in the term "aura" and go on to say: that which withers in the age of mechanical reproduction is the aura of the work of art.'(Walter Benjamin, *The Work of Art in the Age of Mechanical Reproduction*, Seoul: Gil Books, 2009, p45~47) On the other hand, John Berger suggested that meaning of the work of art can change and can use image of reproduction according to variety of purposes. For this

reason, reproduction possibility of image by means like photos and films has revolutionary potential power.

The age of visual image which was started by screening film at Grand Cafe in Paris has made a big difference of civilization of mankind despite of a little over 100- year-history and digital civilization in the late 20 century has made new Renaissance of visual image. Digital visual image introduced for external efficiency like production and transmission occurs internal change and dramatically makes a difference of the artistic merit for digital image through rapid spread. Advancement of technology and proliferation of technology media can't help using technology in art field both directly and indirectly. Use of technology, especially in visual art field that record image is generated by lens like photos and films, has changed the concept of meaning production as indispensable methodology. In traditional art field, it is difficult to do artistic activities without technology both directly and indirectly. William J. Mitchell asserted that Still image and video have lost credibility due to technique like morphing, retouching and cloning.(W. J. Mitchell, *The reconfigured Eye: Visual Truth in the Post-Photographic Era*, Cambridge, 1992) Generalization of fabricated possibility by technology destroys social credibility of visual image because of failing realistic presentation and status of visual image has changed since inventing photography. Jean Baudrillard writes: 'Image is the reflection of a basic reality. It masks and perverts an basic reality. It masks the absence of a basic reality. It has no relation to any reality whatsoever: it is its own pure simulacrum.'(Jean Baudrillard, *Simulacra and Simulations,* Trans. Ha Tae Hwan. Seoul: Minumsa, 2008,p 198) And he indicated that simulacra and simulation, which is based on information, model, game of data communication, has peculiarities of full fabrication, secondary substantiality, complete controlled purpose. He also pointed out that reproduction of faultless image which is generated by digital technology obscures gap between original and copy and collapses line between reality and simulation. And he insisted that digital image through creation and control of reproduction reality amplifies infinitely and produces the value of it. Marshall McLuhan wrote about extension of perception by media- "During the mechanical ages we had extended our bodies in space. Today, after more than a century of electric technology, we have extended our central nervous system it self in a global embrace, abolishing both space and time as far as our plane is concerned."(Marshall McLuhan, *Understanding Media*. Trans Kim Sung Gi, *Understanding Media*, Seoul: Minumsa, 2009, p30) In deed, sense of mankind has extended in space through internet and electric media. And digital image, in extended sense, as visual media has played great role. Marshall McLuhan's opinion that consciousness has extended technically has been verified through digital technology. Kim Hye Jin claimed interaction and meaning production of art and technology. She said that Media

technology and visual art have a influence each other as 'complementary relation' and visual art should suggest critically direction of development of digital media technology. Lee Won Gon argued that the completion of digital opens possibility of new expression and prospective media environment (both artificial and humane) will be dynamic due to new creation and transformation in non-linear process.

Thus, the combination digital art with technology is indispensable in art work, especially digital art like photography and film. There is a esthetic point by combining visual image which has desired since the genesis of early human beings, with technology called 'digital'. First of all, how has collapsing boundary between production and consumption changed the value of digital image? The next thing, what is interpretation for meaning-production change and alteration of communication? Lastly, What is the value of digital image in the future?

II. DIGITAL IMAGE

1. Digital Technology & Digital Image

Digital, against analog, has brought about the revolution of technology in cultural production and communication through encoding of information. Digital technology digitize as electrical signal '0' and '1' for reducing information loss, storing information and transmitting information and has changed the foundation of technology and industry. Both in method of recording voice and letters and in the method of organizing form to turn into image firmly pass over 'line by line imitation' which was chosen by mankind in history of civilization. Analog image is a kind of transformation which cloning representation covertly is sent in order making proper respond like line is sent as line, volume is sent as volume, form is sent as form. Digital technology has made a material difference to record of image and change fateful property in creation in cultural history. Digital technology has been turning point in recoding and playing image and has surprisingly improved popular production and accessibility of image. Uniqueness of image production, that only professional groups make films, has enlarged to the public and democratization of production is realized. It means that unconscious desire, revealed in the Cussac Cave and the Cave of Altamira, of mankind for image becomes to accomplish. Digital technology has metamorphosed social value and social awareness for image improving outcome and increasing economics of production system. Digital image, produced on all sides, make image as realistic as possible through high presence and authority and level of dependence for it continuously has been increasing.

Since technology revolution applied in visual art, concept of visual art and stereotype of production and consumption have changed totally. Technology art is possible to produce in human being's absence because of

mechanical characteristic. For this reason, Walter Benjamin questioned about authenticity of original value on reproduction. On the other hand, in the theory of Jean Baudrillard, he claimed digital visual art is more than reality and can't distinguish between original and reproduction and also the value of disposable existence lose. Therefore, all digital image productions have the values as original and also is copied artistic 'aura' when the image is made. For this reason, digital image's position gets higher. Reproduction by technology, with emerging photography, generates some controversy surrounding art and artist. Andre Bazin defined metaphysical 'genèse' as 'la genese automatique'.

Digital visual art rapidly has spread in the late 20 century, it has both 'epistemological point of view' or realization of hyper reality by technology and 'ontological point of view'. Realization of 'ontological point of view' by technology assigns lossless artistic 'aura' to all digital production. The public encounter digital production of 'ontological point of view' like digital films, digital image fair, digital broadcasting and they can feel 'aura' transferred by digital technology. Digital production of 'ontological point of view' hardly distinguish it with original and it have authority and 'aura' when it communicates with audience.

Digital, against analog, realizes presence and heightens the 'ontological' value increasing visual reproducibility. That is to say, Digital produces hyper reality and makes digital 'aura' which is perfect realization of visual desire and unique value. All digital image productions, of course, don't have digital 'aura' of 'ontological point of view'. When digital technology applies and conducts for realizing 'ontological point of view', lossless artistic 'aura', that is to say, digital 'aura' generates.

Production of digital image is democratized by technology, the value of reproduction is reproduced, digital image increases geometrically and finally demand of customer has outstripped. And customer accesses digital image by means of non-linear, a value of existence of digital image is established newly. Ontological meaning of digital image made by digital technology diversifies consumption, the endless visual desire is satisfied and power of digital image has strengthen.

2. Production & distribution of Digital Image

Digital technology made many producers through democratization of making content. And various media and changed consumption diversify digital culture. Digital image, in the digital culture, expands position of producer through unconscious desire of mankind about vision and satisfies desire of consumer through network and divided digital media. Diversified digital image by meeting the demand of the times longing for image is reproduced, shared, spread, distributed. It causes decentration of consumption and it contribute to diversity of taste in post modern context.

Digital image made by digital technology has changed all traditional patterns of creation , acceptance, production, distribution, consumption, enjoyment. In the digital world, maker's authority is shaken by idea like Roland Barthes's 'death of the author' and Harold Bloom's 'creative misreading'. Producer hasn't omniscient and transcendental position to lead audience. Digital process combined digital technology expands chance of production and acceptance through network links and it weakens authority of producer. And then, production generalization and efficiency of distribution for digital image expanding influence and feedback speeds infinite amplification of revolutionary potential power. The change of paradigm for production and distribution through technology has significant meaning. And the change of visual culture is not hope of new age by developing digital technology but response for mankind's wish. It is result of demand and request.

In the technological determinism, technology change social influence and separate it from social influence because it is spontaneous.(Marita Sturken, Lisa Cartwright, *Practices of Looking : An Introduction to Visual Culture,* Trans. Yoon Tae Jin, *An Introduction to Visual Culture*, Seoul: Communication books, 2006, p. 15.) However, in digital image era, digital is only core processor which reflects the demand of humankind, not leading value. Through primitive art, perspective and machine art, Humankind has pursued pleasure and has longed for production of more vivid image and reflection of desire involuntary.

Digital production realizes desire of democratic production through popular proliferation which was made by method of realizing desire of humankind seeking visual pleasure. Digital distribution allows digital production to share and to increase limitlessly and the value and implication of image have expanded.

3. Consumption & Reproduction of Digital Image

Stuart Hall categorizes readings as situations of readers/viewers/listeners for reading visual culture, art work, cultural image of visual production - 'dominant' readings, 'negotiated' readings, 'oppositional' readings. (Marita Sturken, Lisa Cartwright, *Practices of Looking : An Introduction to Visual Culture,* Trans. Yoon Tae Jin , *An Introduction to Visual Culture*, Seoul: Communication books, 2006, p. 45-46)

The implied meaning in image with internal meaning of image reproduces according to viewer's situation. The producers of image create meaning of image by encoding process of abbreviation and viewers compromise the dominant meaning of image according to personal situation or accept actively image by oppositional reading. The imaginative power and discontinuity of digital image magnify reproduction of image through 'negotiated' readings and 'oppositional' readings. Specially, 'oppositional' reading for digital image reinterprets image through appropriation and

changes internal meaning and produce cultural diversity. Appropriation is to take possession of another's imagery, often without permission, reusing it in a context which differs from its original text. Appropriation accords with dominant culture and it with reappropriation reproduces and derives. Digital image made by technology accelerates to reproduce and derive.

The image as visual information produces complex meanings according to various interpreted contexts as well as the primary visual information. And also, according to viewers, the image produces separate meanings and its produced meanings spread infinitely. The meaning of image connotes itself and also in external environment (that is to say, internet which is unique network of communication), additional meaning is produced.

A lot of images are produced and exists on all sides, the viewer can't accept all images. The viewer accepts requisite image and reproduces the meaning in their situation. The viewer's active acceptance and reproduction of meaning play an important role in digital world overflowing with images. To interpret images through viewer's situation is to communicate with society and culture. It needs viewer's active will.

Over the age of mechanical reproduction, now in digital age, digital image can't distinguish original with reproduction, it has reproduced repetitively according to desire of consumption. The change of technology alters fundamental art and revolution of digital technology becomes to change general paradigm for art and production and consumption of image. In digital era, authentic notion of image is reproduced by viewers and has change the meaning. In the past, originality increased the value of art. But, originality of digital image has changed over and over again through producing and reproducing and desire of possession. And the demand of image has enhanced the authority and value of image. Creative consumption of digital image is reproduced and reconsumed again and again. Interaction of production and consumption is going along complicatedly beyond physical spaces.

The production and consumption of digital image make a kind of cultural ghetto or build trans-nation over the boundaries extending an 'imagined community'.(Asu Aksoy and Kevin Robins, Thinking across spaces, Transnational television from Turkey, 2000, p. 343, p.356~358) In making community beyond space, the consumption of digital image have important meaning and digital image is reproduced in its space and have new value. As art work is analyzed and consumed in different cultural space and social spaces, in 'imagined community', digital image newly is reinterpreted and reproduced.

III. COMPREHENSION & COMMUNICATION OF DIGITAL IMAGE

1. Digital acceptance

Image as visual information delivers meanings. Traditional viewers passively interpret images which are delivered through production and distribution, on the other hand, digital viewers interpret actively image and accept it and contribute to communication through conflict and anticipation. Reading of image is accepting process subjectively according to personal experience. So reading through personal experience and judgment has very important meaning in postmodern society of producing and distributing image. In digital image era, personal environment and interest act as big variable in accepting and analyzing the meanings.

Digital viewer accesses non-linearly digital image through network and personal media and interprets image by accepting environment and purpose and personal situation. Digital image is incessantly produced and reproduced in network. The viewers according to personal situation access to image and accept image, they interpret differently as showing up of non-linear image in this process. The space accepted digital image is personally intensified space, so reading of image be influenced by personal taste and habitus and the meaning is produced as various interpretations of each individual. In network, the digital image encoding by digital is interpreted according to viewer's situation, the digital image is aggregation of information and it makes hyper reality beyond reality and it makes the viewer accept and focus on. Reading of digital image, based on personal experience, produces and reproduces comparative meaning. And easy distribution widens communication and builds and enhances 'imagined community', that is to say, community which shares common interests. In virtual space, the community shares value based on identical interpretation and reading and communicates with each other.

2. Interaction & Digital communication

In network based on digital, interaction that producer communicates with viewer is important for digital image to read and communication. The change from one-sided and linear method of delivery to bilateral diversified inter-communication, the change of communication produces and reproduces and monopolizes and re-monopolizes image making new value. View's reproduction is main factor of diversity, classification, differentiation, it satisfies desire of customer longing for various reading and the viewer becomes to be immersed in digital image. The reading according to viewer's situation is appealing and it enhances power of digital image and has a strong influence in unconsciousness of each viewer.

To express light sense and to pursue visual desire is main factor to strengthen authority of image. Due to interaction, viewer's active reading strengthen authority of

image. The space of interaction is hypothetical space which is not real space and there is various reading in the space. In virtual space, the viewer becomes free from physical space and can access to visual desire. Emotional release for space of viewers approach visual desire and influence of image magnifies. And also producers substantialize inherent image in virtual space.

Interaction speeds up post-modern tendency, that is to say, medium experience, decentration, self-reflection, imitation, reproduction, and it creates polysemy. Interaction reflects volition of personal situation and show individual desire. At that time, the existing meaning is changed and reproduced and then new meaning and value is made.

Communication based on digital produces multi-layered value and specialized image, in communication of digital image, is analyzed differentiated meanings by viewers. The image connected by hypertext has each meaning and it spreads through consumption of viewers and new meanings are produced in that process.

Image exists separated form in virtual space and, in communication channel, reseparated image makes negotiating pattern. Linked digital image is divided non-linearly and is given value according to personal situation. Digital image existed in virtual space produces meaning through actively anticipation of viewer. It has pattern of non-linear comparing with traditional communication. In digital communication, virtual space is not real, that is to say, phantasmal space. In virtual space, network makes encoding and separated image communicate.

Digital communication is given value by viewers, date marks produce real images and make meanings. In this communication way, the choice of viewer is necessary and significant. It is main factor to vitalize image. Thoroughly personalized digital communication is method of expressing individual desire and it spreads non-linear image and reproduces image endlessly.

IV. FUTURE OF DIGITAL IMAGE

1. Authority & Hegemony of Digital Image

The demand and need of humankind for image have been continued, it has developed from primitive art, perspective, slide and afterimage to photo and film. Such a kind of civilization evolution is not coincidence but inevitable outcome. Digital civilization took place in the late 20 century and it satisfies desire for image and transforms fictitious image into real image. Digital image actualize unconscious image and it builds contact point between consciousness and unconsciousness.

Rapid evolution of digital changes civilization formed since the emergence of human beings and digital evolves fast. The birth of digital visualizes due to necessity of knowledge information civilization. Digital evolution develops rapidly beyond humankind control. Digital technology having technical perfection evolves for

satisfying inner desire in unconsciousness of humankind and reflects unconsciousness of human beings.

The evolution of digital image subdivides collective unconsciousness into private unconsciousness realizing unconscious desire for image and it has strengthened authority of image through reproduction, appropriation and reappropriation. The evolution of digital image by collective unconsciousness strengthens authority of image and formation of hegemony is a factor of reinforcing power of image.

Antonio Gramsci explains hegemony is a process of negotiating power in socially, financially and politically different class structure, not ruling the other class. (Sturken, Marita, and Cartwright, Lisa. *Practices of Looking : An Introduction to Visual Culture,* Trans. Yoon Tae Jin , *An Introduction to Visual Culture*, Seoul: Communication books, 2006, p.43).

Visual hegemony naturally delivers expression and purpose of producer, communicates and works as dominant method. And unconscious visual image has a power. He claims that the concept of hegemony has change unceasingly due to conflict of social negotiation. Visual hegemony is applied to continual production, consumption, signified, reproduction. In the process of negotiation, viewer becomes an agent and image has a power. "Viewing" which relates to scopophilia, voyeurism and exhibitionism is traditional symbol of power, it strengthens power of viewer. In digital era, subject of power has been changed from viewer to digital image.

2. Digital myth

Roland Barthes uses the term, "myth" which is cultural values and belief related to intensional meaning of image. Myth means generalization of hidden rules and convention of particular group. When culturally and historically distinct characteristics is generalized, myth is produced.(Sturken, Marita, and Cartwright, Lisa. *Practices of Looking : An Introduction to Visual Culture,* Trans. Yoon Tae Jin , *An Introduction to Visual Culture*, (Seoul: Communication books, 2006, p.10).

In digital era, image forms substantiality through virtual image, disintegrates boundary between original and reproduction, deconstructs value and belief about reality and existence and denies traditional myth. The belief and myth about unique work are deconstructed respect and mystery by digital reproduction and finally they are generalized. From pole to pole, image and picture are reproduced and can be consumed through network from necessity anywhere and anytime. Duplicated image is reinterpreted as new meaning and reproduced by mathematic combination. Reproduction image transcends meaning of original and creates new value. So, virtual image become original beyond reality. Hyper reality image continuously is reproduced and reproduction image is duplicated as original meaning or created reproduced meaning.

The analog work and image are worth and divine because they are unique, digital image can't distinguish between original and reproduction. Digital image and picture are reproduced perfectly as original, consumed variously, given value, and then visual power strengthens.

Myth is formed by generalization of cultural and historical characteristics. In digital era, virtual image is more realistic than original image. Digital as mathematic concept builds digital myth through duplication, distribution, reproduction in the real world. The birth of digital myth has consolidated value of image and amplified desire of image demanded consecutively. The wish of humankind for image has been amplified unceasingly. In digital era, digital image is close to desire of humankind and it enhances the value and meaning of image beyond established value and perception.

IV. CONCLUSIONS

The human desire recording image has developed and unceasingly evolved from primitive art, perspective which changes visual subject, mechanical realism to digital image era.

The prevalence of visual media and generalization of image substantialize the age of image through popularization of visual culture. Since the late 20 century, the digitization of image has changed production externally and internally and it has changed the value of image drastically. Digital visual culture has been made by the collapse between producer and viewer and by diversification of encoding and decoding. And Digital visual culture produces new desire of humankind and leads specialization of communication and negotiation.

This thesis discusses image esthetics in the age of digital, the digital era has been changed by digitization of image which is desired endlessly since the genesis of early human beings.

First of all, how has collapsing boundary between production and consumption changed the value of digital image?

The next thing, what is interpretation for meaning-production change and alteration of communication?

Lastly, What is the value of digital image in the future?

There is "digital image" in chapter 2 of this thesis, there is "Comprehension & Communication of Digital Image" in chapter 3 and there is "Outlook of Digital Image" in chapter 4.

The first study question is 'How has collapsing boundary between production and consumption changed the value of digital image?'. Collapsing boundary between production and consumption has extended subject of production due to democratization of making image. Various media which distributes production image and varied consumption departmentalizes visual culture. And pluralistic digital images, meeting the demands of the times, are produced, shared, spread, distributed and finally decentralized.

In digital image, authority of producer fundamentally changes and omniscient and transcendental position have been weakened. In digital image, generalization of produce and efficiency of distribution extend influence and diversity of image. And revolutionary potential power of image amplifies, so social value and meaning of image have enlarged.

The second study question is 'what is interpretation for meaning-production change and alteration of communication?' The viewer compromises dominant meaning of image through personal situation or actively accepts the meaning of image and newly interprets changing the dominant meaning or changes the internal meaning. In the image of digital era, the concept of authenticity is reproduced through consumption and the value of meaning has changed. The digital image can't distinguish original and reproduction so desire of possession grows and the demand for image also increases. Finally, the authority and value of image are strengthened. Complicated mutual negotiation, in production and consumption field, makes a kind of cultural ghetto or builds trans-nation beyond meaning of space extending an 'imagined community'. A work of art, in different cultural and social space, is differently interpreted and consumed. Like this, the image of digital space newly is reproduced and reinterpreted in 'imagined community'.

The third study question is "What is the value of digital image in the future?" Digital visual culture is changed from one-sided and linearly method to bilateral and various method. And various communications have made a difference and has extended reproduction, appropriation and reappropriation. The desire of customer longing for reproduction and various reading strengthen authority of digital image and unconsciously have influence on viewer. The digital image realizes unconscious desire of humankind and power and hegemony of image is strengthened by reproduction, appropriation and reappropriation. Above all, in digital era, the visual culture makes virtual reality through mathematic combination and virtual reality becomes vividly real beyond reality. The analog work and image attach significance to uniqueness and make value and is held sacred. On the other hand, digital image duplicate reality completely because visual image can't distinguish original with reproduction. And then digital image and visual image are consumed diversely and is given value.

The myth is formed by generalization culturally and historically distinct characteristics. And, in digital visual culture where virtual image is more real than original, digital myth is also built by duplication, distribution, reproduction. For this reason, the desire which is demanded continuously for image has amplified. In the

digital era, visual culture has made the value and meaning of image beyond traditional value and perception approaching human desire for image.

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