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(Mid Term Final)

Aesthetic Perception and Technology

In every culture, the evaluation of art and aesthetics is impossible without understanding the concept of aesthetic perception. Even though art and aesthetics could be studied through diverse discipline, traditionally, if one is to find the essential values of art, there is a common belief that aesthetic judgments can't be performed through the lens of typical sociologists or ethnographers. Instead, in a general sense, aesthetic perception is referred to as a learned or justified belief of appreciating art without any preconception. However, in the contemporary world, the understanding of aesthetics is changing as the criteria of defining art has been shifting to a much broader way. Since the 20th century, the definition or judgment of art has become more problematic than ever before. Along with many reasons, the advancement of technology opened an era of interdisciplinary field within art or design practice. If the 'Romanticism' of the 18th century and 'Arts and Crafts Movement' of the 19th century enabled designers, artists, and architectures to separate themselves from others in society and set special boundaries for their position, 'Fluxus movement' and contemporary philosophical concept, such as 'Rhizome,' have changed the way people approach art and aesthetics. Now, technology plays a crucial role in establishing the quality of many products whether it is in an architectural form or simply art. Not only did the technological epiphenomenon in postmodernism bridge gap between science, design, art, and information, it redefined the definition of aesthetics. Digitally driven forms in contemporary architectures are merely part of an illustration of the postmodern paradigm.



Artists, designers and architects cannot avoid the technological aspects of today's pervasive computational environment and due to this flow, the criteria for aesthetic perception has become much more pragmatic. Also, the anxiety to use new technology in aesthetics has been generating diverse approaches to visualization. Some might contend that these experimental artifacts related to new technology in the world of ubiquitous computing are still surface driven and have their limitation. Nevertheless, people, such as Bruce Sterling, a science fiction author,

believes that the cloud of connectivity would allow the best environment for building a sustainable industrial structure that would solve many fundamental problems that we face today. In that sense, the interdisciplinary practices in related fields to aesthetics and technology are emerging as areas for significant research.

Design Research Related to Aesthetics and Technology

To fully understand the research area focused on modern technology influencing aesthetic perception, it is first necessary to analyze many artists or scientists' methodological approach. One is an exploration finding biomorphic compositions in design through technology. Another example is an attempt to visualize information and ideas in diverse space. Also, there are many who explore the interactive relationship between physical environment and digital space.

While some might regard culture as the only cause and content of aesthetics, fundamentally, men/women have been drawing a comparison between built form and nature since the beginning of art history. Even though the majority of designers in the modern age were bound and driven by the mechanism of machine and technology, there were still important studies on the relationship between nature and form within the field of design research at this time. One example is Le Corbusier's development of a modular system through measurement of the human figure. Function used to be the criteria of establishing the aesthetics of form during that period. However, the idea of following natural principles for a modular system set a new standard for harmony in architectural space. Later on, Modernism's aesthetic of production shifted to a new level, rather than experimenting with new technology to learn the mechanism or the capability of a material, creators focused on the aesthetic potential that could be articulated from the system. For instance, since the 90's a computer generated space transformed the whole concept of architecture. Before entering the contemporary world, the general understanding of architecture used to be a built structure from contents of cultural hegemony; today it is often regarded as the virtual reality built in a physical space. The fact that the process of developing architectural form in a virtual environment resembles evolution in nature, shows a possibility that this approach could eventually open way of finding an ideal form. Contemporary architects use this consequence of the digital architecture and give actual structure to it in a physical space. In this sense, the belief is that the computational method would eventually enable designers to develop a sustainable form. Although architectural discipline was the first to apply this concept, this approach isn't necessarily limited to spatial design research. Recent art works of Theo Jansen, such as the kinetic sculptures dubbed beach animals, also show a great example of using engineering knowledge to design organic form that functions in a sustainable manner. While these particular creators and works do not relate directly to the traditional standard of aesthetics, they are still appreciated by people and considered aesthetic.

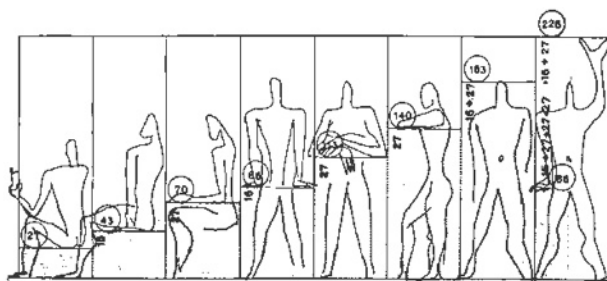
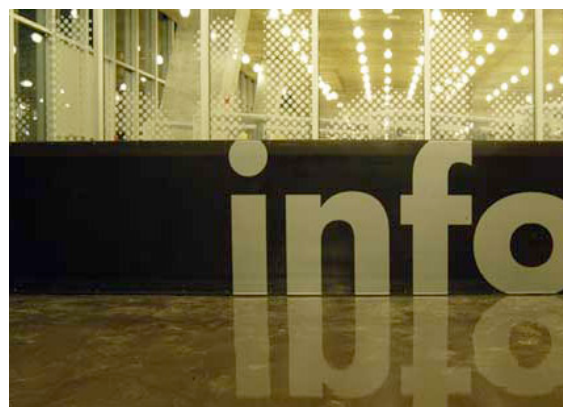
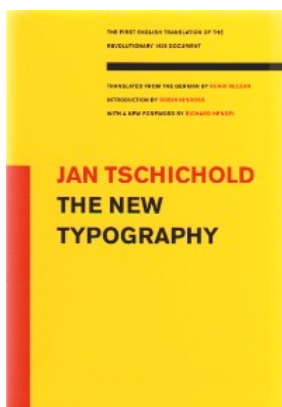


Abb. 25



Even the most complex form of computational idea, boils down to one category; it needs to be visualized to be affordable to people. To be more specific by using Don Norman's words, *in product design, where one deals with real, physical objects, there can be both real and perceived affordances, and the two need not be the same. In graphical, screen-based interfaces, all that the designer has available is control over perceived affordances. The computer system, with its keyboard, display screen, pointing device and selection buttons (e.g., mouse buttons) affords pointing, touching, looking, and clicking on every pixel of the display screen.* In other words, however complex a concept is, it has to be graphically reorganized to be perceived to the users. To that end, there have been visual experiments regarding new forms of monitoring for the network users. Many believe that particularly pervasive computing has the potential to generate diverse data visualization that would enable the public to have access to useful information instantly. However, current trends in the visualization of information shows us that they are not limited within web based environment. Recently, information visualization projects are crossing boundaries between different dimensions of spaces. These experiments are meaningful because they are establishing a new lineage of interdisciplinary design research that would eventually generate an effective communication tool in a ubiquitous computing environment.

The history of design shows that even in the past, technical inventions decisively affected the movement of design exploration. In the modern age, designers recognized engineering as a crucial part of aesthetic creation. Since the late 19th and 20th century, the innovative technical discoveries have been enthusiastically accepted by designers and were developed into a form that would draw a new way of communication. Initially, international style of Bauhaus was the mainstream in the field of interdisciplinary design research at this period. It influenced upon the development of art, architecture, graphic design, interior design, industrial design and typography. Standardization, rationalization, and efficiency regarding mass production were some of the key factors that determined the aesthetics of a design during that time. Along with the pioneers of the Bauhaus, revolutionary thinkers in the modern world, such as Jan Tschichold, were able to set a tradition of making typography as part of other fields of creativity.



However, it wasn't until the contemporary age, when tools for visual communication, such as typography, became physical element of an architectural space.

Seattle public Library project, by Rem Koolhaas architect, includes an effective information system that enables people to communicate with the space. It has been designed as a

functional community hub where people have access to categorized books and digital information. However, the most intriguing aspect of the design is the visual elements that notifies how people may interact with the library itself. The large scale typography that are engraved in several places of the Seattle library interior shows a new approach considering the change in the way information is being delivered. Rem Koolhaas's project is a good example of interdisciplinary design research that juxtaposes diverse methodologies in a nontraditional way to set an adaptable system in an era of planetary information network. As Koolhaas proves, even architecture itself is also becoming an effective communication medium that transmits information and ideas. Another example of visualizing information through an architectural space can be found in MVRDV's projects. MVRDV's methodological approach of devising a research driven diagram for spatial design also shows that information visualization is not limited to a 2 dimensional interface. The cross over exploration between various discipline implies that the contemporary field of creativity exists in a manner that uses technology as a vehicle of expressing ideas without spatial limitation. This hybridized field in contemporary design is approached without reference to the aesthetics of the past.



As mentioned above, in this era of wireless networks, the computational technology is advancing at a high speed, changing the definition of aesthetics and functions, communication and design, and even the boundaries and conceptions of surrounding structures. One of the significant change in the contemporary design research that led to hybridization of new media and new technology has been an attempt to pull out the virtual world to a physical environment. Designers are creating new varied way of thoughts regarding media and correlation of individuals through physical interactive systems. The ability to communicate and interlink diverse media has become one of the crucial criterion for designers related to visual studies. Historically, there have been various experimentations of expanding the boundaries of virtual world in diverse discipline. These efforts of creating a dreamlike universe of coexistence enabled the people to experience what seemed to be physically impossible in a tangible environment. The initial stage of this ideation was first shown in the film industry. Even before the hyper realistic computer graphic effects took over each screen of the block buster movies, creators explored the fundamental idea of connecting virtuality and reality in movies, such as 'who framed Roger Rabbit(1988).' Even though most people marveled at how the movie introduced a huge technical leap in film industry by portraying a world where virtual characters coexist with normal people in a physical mundane life, this film was meaningful because it broke down the conceptual boundaries between the virtuality and the reality. As technology evolved to a new level, so did the research area related to connecting the two worlds. Doug Aitken's 'sleepwalkers' collaboration project(2007), a large scale outdoor film installation in New York(2007), is a great example of successfully capturing virtual moments in everyday life and juxtaposing them within a mundane environment. The artist uses the walls of buildings and cityscape as a canvas to portray a dreamy atmosphere where the two worlds coexist. Another lineage of creative research that focus on the idea of connecting the two worlds are performed

by media designers or artists that use physical computational methods. A German architect and artist Christian Möller's body of work expresses one of the essential and most structured exploration of what is possible to be revealed by the junctions of motion pictures, computation, sound and physical space. Möller's 'Nosy' project is a robotic video installation. A robotic video camera would capture the random moments of its surrounding and display them in bitmap graphics onto three towers. Along with the serendipity, the transition of the physical environment to a digital form in an architectural space are the interesting aspects of his work. The interaction of the robotic installation and people passing by who generates the digital display becomes an aesthetic picture. His other projects, such as 'Mojo'(San Pedro, California, 2007) or 'Daisy'(Changi Airport T3, 2008), also represent investigation of how people react to physical interactive system in public space. 'Mojo' is a robotic arm holding a theater spotlight that follow passengers or viewers with its light beam. Project 'Daisy' is also a robotic sculpture with a similar feature but in this case, a cargo ship propellor of fiber glass are attached to a robotic arm. The robotic sculpture move and face its viewers and becomes a live character at the public space. Both of these projects display an ironic and humorous situation of nonrealistic element interacting with the amused passengers. The attempt to interlink a digital atmosphere to a real physical environment are also shown by other media architecture projects, such as Galleria Department Store of Seoul (UN studio, 2004). The store's media facade generates ambiguous digital images on its multiple screens and the surface of the architectural surface becomes a large scale pixelated interface. Projects such as Hyposurface moving wall, an interactive kinetic structure that reacts to sound and movement, is also a good example. Hyposurface's engineering transmits digital flow into a physical movement that generates a visual affect on a real environment.

As the above examples suggest, transforming a real physical form into a digital/virtual element is a huge thread which many creators explore. Even though the majority of the design research are all about the media surface of an architecture, the fact that visualized data, sound, movement and other information are able to be translated into another form in diverse dimensions of space implies a great leap in the field of visual communication studies.

Areas of Interest

By analyzing the cultural, historical, and technological aspects of the contemporary field related to aesthetics, it becomes clear that technology and design are more driven by the pervasive computing system and prospers greatly from it. The advancement of technology opened an age of interdisciplinary design, and suggested a new view point towards aesthetics. Moreover, in the field of creativity, a significant area, such as physical interactive media studies, that allows creativity to flourish is emerging and redefining the definition of collaborative design research in a much broader sense. However, the irony is that even though the design research that are focused on understanding the dialogue between creativity and technology are showing a great potential for adapting bodies of design work in the pervasive computing world effectively, they are not covering the fundamental problems that could be generated in an environment of planetary network system.

The computational idea of building a fundamentally sustainable system through design has its limitation unless the study compensates for e-waste problem of a ubiquitous computing environment. In addition, there needs to be a new criteria for the field related to visualization of information in the pervasive computing world. Benjamin Bratton and Natalie Jeremijenko shows their concern about this matter particularly by pointing out the questions raised in today's information visualization projects; the complex authority matters in design or universal, political

issues related to the visual analysis. Lastly, the area of study that focuses on the physical interactive system and digital experience, still has a tendency of being experimental rather than pragmatic in most cases. Yet, the field of interdisciplinary design research is a study of the future and there are great possibilities lying in this path. As long as the creators cognize areas of improvement and give effort to solving those problems, they would be able to expand people's experience into a whole new level.

Over the years, there have been a lineage of designers that created communications or objects that influence, and inform everyday life. People are aware that the physical world and virtual world used to be just a click away and now the boundaries between the actual and virtual space are rapidly disappearing. In this new environment, technology changed the general aesthetic perception and, in this sense, it is crucial for a designer to have an ability to communicate and adept visual objects through diverse media. Some of the areas that I am interested as a visual communication design and spatial design back ground, are the bodies of study that develop architectural environment as an effective communication medium for the people and use the method to enrich the lives of the general public. My belief is that for a designer, training oneself to approach to an idea though scientific and creative manner would be also critical. I am assuming that the broad range of perspective would create a new varied way of thinking regarding media and correlation of individuals through our everyday life.

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Suspicious Images, Latent Interfaces

Architectural League of New York

Situated Technologies Pamphlets 3

By Benjamin H. Bratton, Natalie Jeremijenko

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Poetry aesthetics philosophy influences architecture.

Architecture influenced graphic design, typography..

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Galleria Department Store, Seoul, 2004; Architect: UN Studio; Media facade: Arup Lighting; photo: Young Doo.

The interface between virtual and real urban space: DAZ are proud to present a number of media façade projects as part of Berlin's Media Façade Festival. The presentation will provide technical background information on how these projects were achieved and feature seminal new developments in media communication in public space. The focus of the exhibition Media Façades, taking place as part of the equally named Berlin festival, will be on the relation between digital images and the structural shell of a building. Merging architectural structures with digital displays generates new hybrid forms conventionally described as media architectures.

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