MODERNISATION OF GRAPHIC DESIGN: THE POSSIBILITIES AND CHALLENGES OF DIGITALISATION

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ABSTRACT

As inventions go, the contrivance of design as a dynamic, fluid, operational vehicle of human technology has always been subject to arguments and debates. The digitalisation of graphic design is a comparatively new field of research, a progressive process that evolves with technological developments. Undoubtedly, the evolution of design practices has transformed the entire design process in ways not deemed possible in the past. The advantages of digitalisation are particularly tangible in the range of possibilities generated by computer-based design tools. The main argument for the increase in "design capital" has been the accessibility of modern art tools to both design practitioners and the wider society, through mass digital culture absorption and the emerging technologies of production and reproduction. In presenting the fundamentals of digitalisation in design practices, this paper retraces the key cornerstones in the evolution of graphic design as an aesthetic medium from the 19th- to 21st-century, while pointing out the expanding, reflexive relationships between design and our environment. The researcher's aim is to connect the socio-historical developmental frames of social progress and the practical uses of digitalisation in art and design today. The innovations in computer-mediated design work today grew from experimental platforms in the 20th-century, inasmuch as technological diffusion in the 21st-century Information Age derived from the widespread global embrace of the World Wide Web, multimedia and graphical computing systems. As a result of this development of the technological 'canvas', the production of design, aesthetic and cultural objects has shifted from the traditional artist-craftsman-specialist paradigm to reflect a more encompassing, diverse scope of ideas fostered by the exposure to different facets of creative capital and inspirations.

Key Words: digitalisation, graphic design, technology, design practice

INTRODUCTION

The impact of a social trend, event and invention is reflected on the development of design practice. Tangible human endeavours such as art and design provide referential discourse and texts underlying the knowledge behind the creative practitioner's skill. As our needs for cultural consumption, debate, self-expression and inspiration shift, these changes provide nascent possibilities for social and economic improvement, from new product innovation to the distribution of knowledge on the Internet.

Yet, how exactly have newer design methodologies evolved, been incorporated and catered for continuous changes in society?

PROBLEM STATEMENTS

The main hypothesis presented in this paper is that contemporary design industry have taken practical risks in the process of using and adopting digital forms to produce cultural art, although these advantages might be both beneficial and detrimental. Technological design has become an interdependent field of study incorporating diverse aspects such as aesthetics education, scientific experimentation and the promotion of culturally-relevant outcomes. Digitally-enhanced graphic art and design outputs will continue to reflexively shape the role of the modern graphic designer as well.

LITERATURE REVIEWS

The introduction of steam-powered printing presses and mechanised typesetting in the 19th-century began marking the hold of machines over designing: the sector became less dependent on hiring labour which encouraged graphic artists to be more directly involved in production and execution. The Second World War saw the earliest stages of modern digital computing before the computer became an important digital design tool. The development of digital computers, with the Manchester Mk1 as one of the earliest to be in service, was the result of effort to store virtual data in a man-made machine (Gere, 2008: p.46). The two World Wars did increase the use of visual metaphor, and brought about the creation of new visual 'languages'. During that turbulent era, photography became an important means of visual communication. Expounding "vision" as a source of knowledge in the progress of society towards modernity, Jonathan Crary (1990) implicates the observer's distinct view of culture by stating photography's parallel to money, arguing that both shared a similar type of social influence with the camera obscura during the 19th-century, by tying and enjoining elements under a "global system of valuation and desire" (Crary, cited in Gere, 2008: p.37). However, the computer and digital office technologies demonstrated their worth in their complex ability to manage information, and continued to advance functionally and aesthetically and would later be able to digitise photographs, producing art that would have been impossible to create in the 19th-century.

Evolving Technology Necessitates Shift in Design Practice

In the early 20th-century, a decisive shift was noted in design practices, as technical development responded to the needs of Western national interests during the Cold War, and design construction grew extensively while borrowing the untested capabilities of digital technology (Gere, 2008: p.113). The transitional phase of social and cultural perceptions about the computer - symbolised at first as a tabulation device and 'weapon' for military purposes, later as an essential communication instrument - was a gradual but inevitable process.

It is not surprising to note that graphical elements in early computers were considered as important as functionality in research carried out to further improve the machine. Pioneer animators like John Whitney participated in digital art image production that necessitated collaboration with programme researchers and computer scientists (Darley, 2000: p.13). This contrasts with today, whereby designers produce their work fully on digital platforms such as desktop publishing, game design and music production, without relying on computer specialists.

With the invention of the computer interface in the 1950s, the design world warmly welcomed an evident shift in the production of graphic design works, where tools and technologies signalled the infiltration of computers and digitised audio-visual imagery into various aspects of cultural production sectors, from art to sound to image, multimedia to computer games to publishing (Gere, 2008: p.141). Cultural art forms exploded in tandem with changes that came with industrialisation, with "avant-garde" turning mainstream through television, multimedia, interactive art installations and electronic musical performances (Gere, 2008: p.114), culminating with Japanese hand-held games (e.g. *Space Invaders*) and other forms of electronics-based video games in the 1980s. Popular entertainment mediums advanced until the Information Age, when visual-based software such as Apple Macintosh computers symbolised the new media century (Gere, 2008: pp.174-182). McGee (1999) pointed out that the division of labour simplified planning, collaboration and production of goods in larger quantities and at faster rates.

Graphic designers today are accustomed with computers as a central designing device but in the 1960s, computers were treated as augmentation – an additional means of exploration for artists' work. Conventional artists – trained chiefly in mastery of form, function, materials and aesthetics – started to experiment with digital processes in creating industrial imageries (Gere, 2008: p.175) and viewed experimentation as a means of supplementing their design outcomes (Darley, 2000: p.12). Ubiquity, turned mainstream, as modern dependence on technology perched on an intersection between deconstructionist design philosophies and poststructuralist criticisms of conventions, while the powerful effects of computer-mediated communication chiefly brought about a removal of the artist's presence. The developmental trajectory of designing during industrialisation, in sum, saw the move from handcrafted work to draughtsmanship and sub-specialisations (McGee, 1999), and practitioners in the modern era could exert their influence and resources independently of being hired employees.

METHODOLOGY

Using a case study of a hybrid-media graphic artist and other cultural research insights, this paper is aimed at uncovering qualitative insights to exemplify the role of technology in the improvement of cultural arts and the design process.

RESULTS

By the 1980s, design practices had legitimately been "transformed" by computerisation, but few artists would acknowledge the new tool from an idealistic viewpoint; instead, as art historian Stephen J Eskilson (2007) argues, they considered the machine a terrible gateway that hindered creative development; allowed to seep into human consciousness, it could "obscure much of the richness and complexity" of socially-robust works. As visual communication tools and applications meandered contentiously onwards, technological development in design perhaps needed an iconic form, one who would not be unhappy being labelled as experimental, daring and intellectually keen (Whiteson, 1988).

April Greiman: Drawing the Bridge from Art to Technology

April Greiman braved critics with her emphatically philosophical attitude, as her emergence on the American New Wave graphic design scene of the 1980s was not coincidentally at the same moment when the earliest forms of desktop publishing were released. However, not all designers embraced the computer's integration into design practices. Accustomed to producing work by hand, some were affronted with the seemingly artless methodologies of transferring their design skills onto a computer for "bit-mapping" purposes. Digital techniques were viewed sceptically, as artists resisted the notion that their tactile skills would not be jeopardised by electronic and web-based technologies (AIGA, 1998). In pioneering the experimental movement, Greiman digitally deconstructed the *Design Quarterly* magazine's thirty-two pages with horizontal folds (Eskilson, 2007: p.356). The result: a nude, self-image poster *Does It Make Sense*, a rough collage of scientific symbols and supernova photographs commission by the Minneapolis Walker Art Center in 1986 (Figure 1).

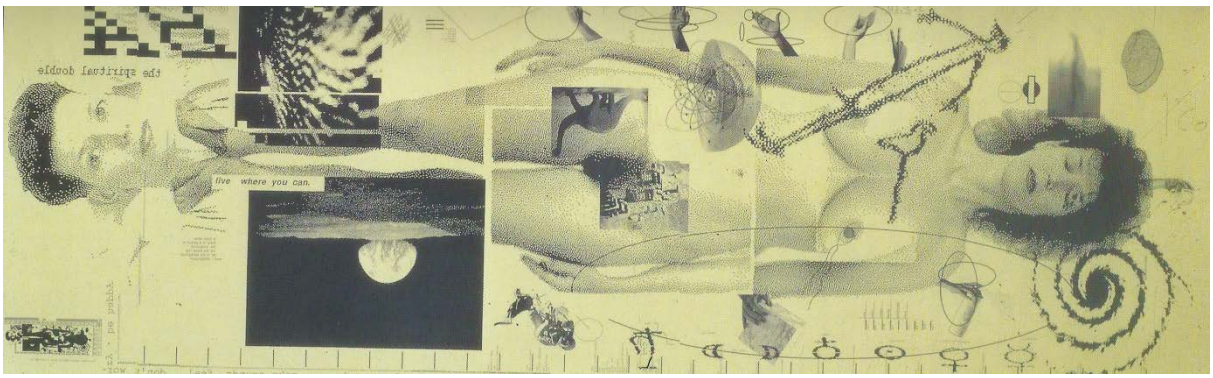

Figure 1 April Greiman, *Design Quarterly* (1986)

Greiman captured element of harmonious contradiction, exemplifying the collision between scientific genres and the chaos of human thought. For Eskilson, the poster's purposefully-applied illusion of being poorly designed in terms of composition gives it shades of vigour and candour missed by International Style artworks.

Greiman herself did not doubt the abilities of digital art: instead of allowing unfamiliarity to restrict her work, she applied digital media to produce memorable and prestigious works, including video footage manipulation to produce oil paint effects on a seven-storey building façade mural, *Hand Holding a Bowl of Rice* (Figure 2).

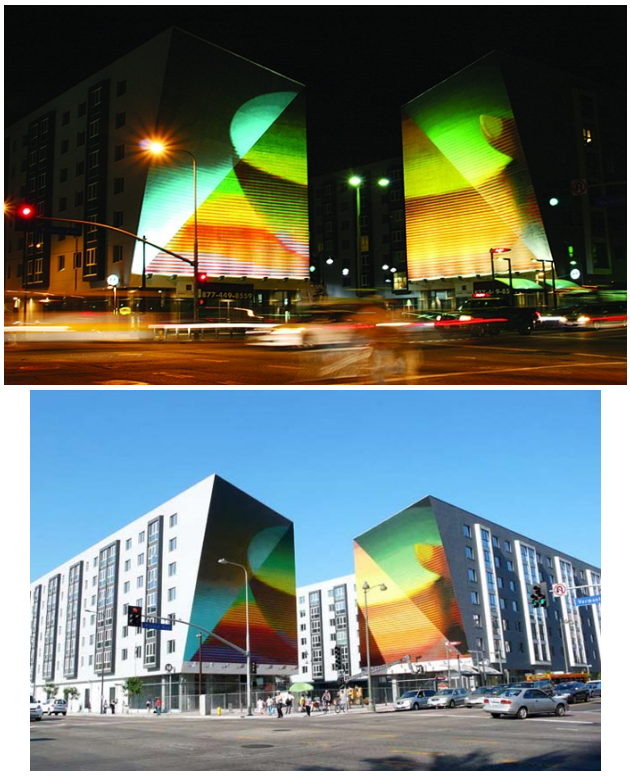

Figure 2 April Greiman, *Hand Holding a Bowl of Rice* (2007)

Digital Design: A Stakeholder Perspective

Since the introduction of the earliest computers with military-industrial potentialities, speed and flexibility are two attributes in constructing designs of practical utility. Digitalisation processes have become the modern designer's key modes of execution. Image manipulation software, computer processing and the invention of the "Undo" button provides for quicker execution with minimal mistakes - a contrast with traditional art mediums, whereby each stroke of the brush and each print is an irreversible documentation of culture for perpetuity. The fearlessness to innovate with digital formats have encouraged some to experiment with different outcomes, since the ability to erase and redo now lay in their hands. In Greiman's (1990) words, "Mistakes are accidents, and accidents often reveal unexpected possibilities". Eric Martin (in Greiman, 1990) commented that innovations in art conception and cultural production would naturally be perceived as replacements for the traditional mediums of artistry. Relaying a few examples, Martin concluded that no entire replacements or alternative of art mediums have materialised. As new technologies float into our consumption orbits (e.g. the camera, telephone, radio, television, electronic synthesiser, computer), none have entirely dwarfed the older mediums they apparently replaced.

Digital art, for instance, is a unique medium, while paintings require its own set of skills. Nevertheless, the ease available to designers to digitally recreate products and graphics also implies increased risk of intellectual plagiarism. User-friendly computer software makes design replication a clouded practice as art is effortlessly copied. Duplication is useful for research and documentation, or when the designer purposes to reuse or reference previous elements in their future creations, but digital reproduction is controversial if the artists take copying, however excellent the quality, lightly (Paul, 2008: p.28).

Despite computers may be a powerful outlet for designers today, but the traditional domains of arts and crafts are preserved as time- and space-bound dialogues with cultures past, present and future. From a stakeholder perspective, it is argued that authentication would depend on the how far specific creative communities would authorise content and context reproduction. The key question: *Can the 'feel' of artworks be duplicated?*This must be answered in line with their relevance in fostering art appreciation among society. The lasting impact of what Eskilson devised as the "technology aesthetic" (2007), must consider whether replication is the deliberate wrecking of original works to account for an individual producer's tastes, or whether these factors are signs of our unique cultural ability to produce great social texts, instigate behavioural changes and shape our ideologies of what truly constitutes outstanding public achievement.

Altered States: Graphic Designers Today and Tomorrow

One of the notable transformations of the production process, as noted by Greiman (1990), is that an increasing amount of processes can be done in-house, i.e. the design department or creative studio, rather than involving relations with external parties and third-party suppliers. Whereas previously other parties handled multifarious processes, designers today are tasked with multiple roles: graphical manipulation, sound recording and production, printing and publishing of media, all with the use of necessary equipment. Designers who are empowered to work using computer-based platforms and digital production modes must have increasing grasp and knowledge of the entire production process, besides facing a level of risk tolerance (Holtzschue& Noriega, 1997). Paul (2008) believes designers working with digital platforms must continue adapting to the limitless modifications and reconfigurations of the computer's abilities, from improved operating speeds, screen resolutions and Web browsing experiences. Hence, the graphic designer's role would invariably broaden along with the complexities involved in manipulating texts and discourses.

CONCLUSIONS

No less significant is the development of the culture of 'cooperation among specialisations' in digital design with the introduction of innovative environments for designers' personal use and for purposeful collaborations. Ultimately, their individual and collective outputs will form the cultural products and texts which must be studied and documented in order to authenticate and assess function and performance.

Peer To Peer Alternatives (P2P) founder Michael Bauwens believes the egalitarian nature of the digital movement is similar to traditional peasant cultures, but with decentralised governance, it gives more room for "individual and collective creativity", lessening the emphasis on social participation in work as a "salaried means of survival" (Gere, 2008: p.220). Critics would naturally deconstruct digital designs for future improvement, and in so doing, continually shape new forms of cultural texts. The contemporary design industry must work hand-in-glove with new media sectors to improve personal communication, social interaction, networking and working experiences globally. The social benefits and detriments of designing in the digital environment must be understood, before designers can assume the promise to produce a full scope of practical, ethical yet enthusiastic insights to improve social attitudes and meet economic necessities. It is through the design communities' integration of specialised craft skills, experiential insights and technological abilities that enables the global culture of social participation to be idealised and the concepts of selfhood, relationships and community, redefined.

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Images

Figure 1: April Greiman (Does It Make Sense?, 1986) in Eskilson, S.J. (2007) *Graphic Design: A New History*. Connecticut: Yale University Press.
Figure 2: April Greiman (Hand Holding a Bowl of Rice, 2007). Available at: http://aprilgreiman.com/?projects=wilshire-vermont[Accessed 15 July 2014]