

Why Aesthetics and the Visual Design Discipline are Overlooked by IT Website Research

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ABSTRACT

This paper proposes a pluralistic research proposal for balanced website design that involves both visual aesthetic design and positivist IT website development. Despite the visual nature of the Internet, the existence of hundreds of millions of Internet users, and the presence of millions of business websites, many of which are designed by professional graphic and interactive media designers, current IT website development theory and research is primarily functional and does not consider visual aesthetic design. The theories that guide visual aesthetic design and IT website development remain philosophically separated; we believe that separation is limiting and unhelpful to IT.

We develop and present a rationale for the current separation of aesthetics from positivism in the IT discipline. We trace the philosophical development of aesthetics and its descendant disciplines, and follow the more recent development of positivism and the scientific method. Based on assertions by both philosophers and IT researchers, we demonstrate the continuing separation of the aesthetic and positivist paradigms, and offer as an explanation positivist lensing. The paper concludes with a proposal that IT researchers and website developers close the visual aesthetic design versus IT website development paradigm gap in both research and development.

INTRODUCTION

Balanced website creation involves a subset of the fine arts in the form of visual design, as well as a subset of science in the form of software engineering (Lawrence, Tavakol, & Soyhela, 2007; Krug, 2006; Mullet & Sano, 1995). For IT researchers, this cooperative arrangement is not a happy one (Tractinsky N. , 2006; Tractinsky N. , 2004; Lavie & Tractinsky, 2004), perhaps because art and science are so different: philosophically, systematically, and emotionally. Although balanced website creation involves both visual design (an application of art) and functional design (an application of science and software engineering), current IT theory and research does not consider visual aesthetic design (Hassenzahl, Schöbel, & Trautmann, 2008; Tractinsky, 2006; Tractinsky, 2004; Lavie & Tractinsky, 2004; Hassenzahl, 2004) . For that matter, visual aesthetic design theory does not consider IT (Burrough & Mandiberg, 2008). We acknowledge that IT website developers attempt to address aesthetics, either by themselves or via outsourcing to visual designers, but there is a paucity of research in IT that links visual aesthetic design with functional design. Hence, theory in both the visual design and IT disciplines lags behind practice. Thus far, this lag is not resolved either in IT or in visual aesthetic design. Why does this theoretical separation in such an important area exist?

AESTHETICS AND ITS IMPORTANCE TO WEBSITE DESIGN

Philosophical aesthetics is the theory and study of beauty (Sheppard, 1987; Runes, 1977; Hofstadter & Kuhns, 1976). Art deals with the creation of beauty, while visual aesthetic design is an applied artistic discipline that employs aesthetic theory and artistic techniques to achieve a predetermined or planned product (Heinrich, 2007; Mullet & Sano, 1995; Rand, 1993). These concepts, at least insofar as they were adopted by western civilizations, originated with the Greeks more than 2,400 years ago (Hofstadter & Kuhns, 1976).

Classical Aesthetics and the Concept of the Universal Ideal

Plato (circa 428 BC – 347 BC), is commonly viewed as the founder of philosophical aesthetics (Sheppard, 1987; Hofstadter & Kuhns, 1976; Russell, 1972). The genesis of the word "information" can be traced to Plato and his colleagues; it means taking the form of something into the mind, where that form then can shape the mind (Hofstadter & Kuhns, 1976).

In his theory of forms, Plato suggested that there exists an infinite number of ideal—but nonetheless real—forms, of which physical things are imperfect copies. Being metaphysical, the ideal transcends value and price. Plato emphasized that the maker who copied the ideal (or “universal”) can only judge the quality of the material copy by applying proportion and measure in comparison with the ideal. To make a beautiful thing, one must know in advance its ideal form, its purpose, and its deficiencies; the knowing must precede the making (Hofstadter & Kuhns, 1976; Russell, 1972), which is an essential tenet of both contemporary design and planning. Ever since the rediscovery and circulation of Plato’s aesthetic ideas at the outset of the Italian Renaissance (1350-1750), those ideas have guided the aesthetic decision-making of millions of artists and visual designers (Rand, 1993; Sheppard, 1987).

Modern Aesthetics and the Concepts of Experience, Taste, and Pleasure

Gordon Graham writes, “Sometimes philosophical aesthetics ... has been thought inextricably tied to Idealism, which is at heart the belief that philosophy is the understanding of the abstract ideas of the intellect ... (Graham, 2003, p. 223).” However, David Hume (1711-1776) rejected Platonism and espoused empiricism, which views aesthetics as a normative, value-based system. Hume maintained that a universal ideal did not exist—he believed that human minds were not divinely informed (Kolakowski, 1968)—and that all human knowledge is derived from individual and collective abilities to interpret and analyze sensory experience. Contrary to Plato, Hume argued that no ideal form is necessary or even possible, and that this condition necessitates the operation of a normative model. In other words, there is no ideal form that is a cat—merely human judgment of what is a beautiful cat (Russell, 1972, p. 661). The quality of judgment is conditioned empirically by experience, presumably, with cats.

A contemporary of Hume, Alexander Baumgarten (1714-1782) developed an analogous, evaluative view of art that redefined aesthetic judgment to mean “taste”—judgment wholly dependent on the individual’s aesthetic sensibilities and capacity to appreciate beauty (Graham, 2003, p. 246). Aesthetic judgment could be guided either by principles and rules (objective taste) or by personal preference (subjective taste). Baumgarten’s approach further departed from the traditional Platonic intellectual judgment of ideal beauty and replaced it with sensual judgment of material things—transforming the concept of beauty from supreme perfection into hedonistic pleasure. Thus, Hume, Baumgarten, and their like-minded contemporaries gave rise to the modern view of art and beauty, where all things can be evaluated based on their ability to elicit sensory pleasure and assigned a material value based on the amount of pleasure they produce. We note that modern aesthetics does not resemble classical aesthetics; the Greeks would have regarded modern aesthetics as ignoble or depraved. Nevertheless, the contemporary concepts of pleasing appearance, user satisfaction, and system value originate with Hume and Baumgarten (Heath, 2008).

Although generally absent from the IT literature, aesthetics (taste) and pleasure, as defined by contemporary usage, is an emerging topic in computer interface design and the human-computer interaction (HCI) literatures. In their study, Lavie & Tractinsky (2004) confirm recent research which shows that the aesthetics of visual interfaces—specifically, website interfaces—is a strong determinant of users’ satisfaction and pleasure. Crockett found that pleasure plays an important role in aesthetic judgment of visual interfaces (Betz, Crockett, Davis, & Sparacino, 2004). Heinrich (2007) discusses the idealized concept of aesthetic beauty in interactive interfaces, but found these aesthetic beauty concepts difficult to measure and evaluate—instead, he advocates adopting pleasure as a primary determinant of a successful interface. Petersen, et al., observe that one of the main purposes in the design of interactive computer interfaces is to stimulate emotion. “... The interaction ideal pursued as part of this ‘emotion locomotion’ is to design for pleasure and attraction. ... Interfaces should be smart, seductive, rewarding, tempting, even moody, and thereby exhilarating to use (Petersen, Iversen, Krogh, & Ludvigsen, 2004, p. 270).” This view was echoed in another study, where “... participants preferred an interface evaluated as more attractive on the expressive aesthetics dimension (a concept strongly related to engagement and fun) despite an acknowledged inferior

usability. (De Angeli, Sutcliffe, & Hartmann, 2006, p. 278).” The authors also noted that this finding was consistent with other current research in website interfaces.

Positivism and the Absence of Aesthetics from IT Research

Positivism, the philosophy of science, was developed by August Comte (1798-1857) as a rebuttal of the theology and metaphysics of the time, which he regarded as illogical, unsubstantiated, and long-winded (Runes, 1977). Comte’s positivist philosophy, which was an outgrowth of the Enlightenment (circa 1650-1790), maintained that the highest form of knowledge is knowledge derived from sensory phenomena and achieved by experience. At the beginning of the 20th century, positivism matured into a stricter, scientific form called logical positivism, which emphasizes now-familiar scientific attitudes, cooperative research, intersubjectivity, and the unity of science (Runes, 1977, p. 285). In this paper, we refer to logical positivism simply as “positivism.” The cornerstone of positivism is its rigorous method of systematic inquiry which is commonly called “the scientific method.”

According to Goles and Hirschheim, “Most of the research in the field of Information Systems appears to be guided by one set of philosophical assumptions -- those of positivism (p. 249).” They then caution, “such paradigm unity could prove problematic as it might stymie alternative conceptions of problems in the IS field (p. 249).” Despite the hundreds of papers in the IT literature devoted to system design, we find the emphasis to be almost exclusively functional—a condition we regard as consistent with the functional heritage and comparative youthfulness of the IT discipline. Sidorova, et al (2008) found IS research to be consistently focused on a core of topics that do not include aesthetics; our reprocessing of the same data finds only three articles that address “aesthetics,” although none address visual aesthetic design. Thus, the seeming eclecticism of IT discipline appears to be limited to reference disciplines that are positivistically like-minded, such as the post-positivist behavioral sciences (psychology, sociology, decision science), and management, engineering, and computer science.

Possibly, positivism is philosophically contrary to Platonic aesthetics, where ideas are perfect universals and matter can only be abstracted as imperfect copies. From a positivist perspective, ideal forms do not exist; the only reality is that which is sensed and measured. Conversely, many artists and visual designers still ascribe to some aspect of Platonism and the perfect universal (Graham, 2003; Norman, 2002; Rand, 1993). The opposition of positivism to competing paradigms is well-documented (Goles & Hirschheim, 2000; Runes, 1977; Hofstadter & Kuhns, 1976; Kuhn, 1970), as is IT’s anchoring to positivism (Hallnas & Redstrom, 2002; Goles & Hirschheim, 2000; Iivari, Hirschheim, & Klein, 1998; Orlikowski & Baroudi, 1991). Tashakkori and Teddlie (1998) describe this positivist polarity as “paradigm wars” between the positivists and anti-positivists. While we do not perceive positivism to be at war with aesthetics, Schaeffer (1976) suggests that the consistency with which individuals apply the tenets of positivism to their lives often results in a pervasive world view—a positivist lens through which individuals view their environment. “People have presuppositions, and they will live more consistently on the basis of those presuppositions than even they themselves may realize. By presuppositions we mean the basic way an individual looks at life, his basic world view, the grid through which he views the world. ... Presuppositions also provide a basis for their value and therefore the basis for their decisions (Schaeffer, 1976, p. 19).”

Maintaining the IT Identity while Excluding Aesthetics and Visual Aesthetic Design

While some researchers believe that the focus of the IT discipline is not sufficiently unique, we propose two compelling reasons for the current focus of IT: 1) IT's pursuance of a distinct organizational identity and 2) IT's interest in the IT artifact (those things that are directly related to IT and its identity). Benbasat and Zmud (2003) argue IT needs a strong identity to distinguish itself from related disciplines—and to survive. They argue that a discipline establishes its identity both through its boundaries and its research core that defines those boundaries; the core is determined by discipline-specific research. Taking an opposing view, Agarwal and Lucas (2005) caution that an exclusive focus could limit the perceived relevance of IT—and negatively affect IT's ability to survive. Although they agree with the need for a strong IS identity, they warn that if the focus on IT is too narrow, the relevance of IT to other disciplines would decline in the views of both academics and practitioners (Agarwal & Lucas Jr., 2005). Sidorova, et al. (2008) found general agreement across the IS (IT) literature that IS research remains focused on how individuals, groups, and organizations interact with IT (Sidorova, Evangelopoulos, Valacich, & Ramakrishnan, 2008). They did observe a broadening of the literature to include website research since 2000, but all of the research that they examined continues to be functionally-oriented. Therefore, recent studies agree that positivism remains both preeminent in IT research and directly linked with the identity of the IT discipline. After careful evaluation, we observe that the scientific, functional approach of positivism appears to influence the world view of IT researchers, who, despite the importance of visualization in website development, have thus far excluded aesthetics and visual aesthetic design from the IT literature. We attribute this exclusion to conscious choice influenced by positivist lensing.

The View of Aesthetics through a Positivist Lens is Imperfect

Positivist lensing—viewing the world through positivist presuppositions—provides a plausible causal explanation for the absence of visual aesthetics from past IT literature in general, and website research and development in particular. Edwards notes, "...since the first computers were not consumer products, their form followed function, and their function did not require anything beyond the basic configuration to do the job (Edwards O. , 1998, p. 131). Goff adds, "IT applications are about finance, about accounting, about making money. They are not about impressing anyone. They are designed to work well (Goff, 1998, p. 5)." Because this predominating functional view of IT continues (Sidorova, Evangelopoulos, Valacich, & Ramakrishnan, 2008), it is possible that IT researchers either may fail to see a connection between aesthetics and IT or they may incorrectly apply positivist approaches to aesthetics.

To illustrate positivist lensing of things aesthetic, we employ the *Five Pillars of Positivism* summarized by Goles and Hirschheim (2000), which itemizes the scientific method and its major supporting philosophies and tools of the positivist system. In Table 1 we list each of the five pillars; in the adjacent column we list a corresponding, consistent view of aesthetics through a positivist lens. From this exercise, in Table 1 we show that if positivism is consistently, but inappropriately, applied to non-positivist disciplines (e.g. aesthetics and visual aesthetic design), the lensing effect can be distortive.

Table 1 - A Lensed Comparison of the Philosophies of Positivism and Aesthetics		
	The Five Pillars of Positivism (Goles and Hirschheim, 2000)	Aesthetics Viewed through a Positivist lens
1	Scientific method – the method is valid for all forms of inquiry	The scientific method is valid for resolving aesthetic problems and testing Aesthetic theories; alternative forms of inquiry—including those used by aestheticians and artists—are not scientific and therefore pointless.
2	Reductionism – everything is reducible into smaller and smaller parts	Fine painting is pigment applied to canvas, music is disturbed molecules in the air, emotion is chemical processes in the brain, religious beliefs are unfounded
3	Empiricism – only data experienced with the senses is valid	Attitudes of art and beauty are outcomes of habit and environment, resulting from accumulated experience
4	Science and its process are value-free, and transcend all cultural and social beliefs	Art and beauty, not being scientific, are without inherent value and cannot be judged to be good or bad
5	Logic and mathematics – the tools of science	Art and beauty only can be quantified or understood through logic and reason; Emotion and enjoyment without scientific explanation are irrelevant

DISCUSSION

Aesthetic design and its effects are not systematically studied in IT literature, despite the fact that these effects are created by designers to be perceived by the general public. Granted, aesthetics is a right-brain-oriented area, and is frequently separated from predominantly left-brain-oriented positivist inquiry. But, as the explosive growth of the number websites and website users continues, we believe that maintaining this separation has become a detriment to some areas of IT research. Objectively speaking, the large number of aesthetic design variables that can affect webpage perceptions is worthy of consideration by IT researchers and developers, if only to allow them to make effective use of the information that is gleaned from them. Above and beyond the informational content of aesthetics, understanding and mastery of aesthetic design can provide IT researchers and developers with a viable means to gain greater control over specific website outcomes. Lastly, gaining usable knowledge and experience of aesthetics provides an avenue into human enrichment. The purpose of this research is to begin the closure of the paradigmatically-separated areas of aesthetics and positivism within IT.

To that end, we must first understand and present a rationale for the current separation of aesthetics from positivism in the IT discipline. We trace the philosophical development of

aesthetics and its disciplines, and follow the more recent development of positivism and the scientific method. Based on assertions by both philosophers and IT researchers, we demonstrate the continuing separation of the two paradigms, and offer as an explanation positivist lensing. We believe this research makes a contribution in that area.

CONCLUSION

When IT developers perform website design, they are using—either directly or indirectly, consciously or unconsciously—aesthetic characteristics, because the website user inevitably will perform a visual assessment of the developers' work. Still, IT developers create websites without a framework, a typology, or a systematic understanding of aesthetic variables and their effects, as evidenced by the absence of same from the IT literature. We believe this defect in website research and development can be remedied by integrating the theory and skills of visual aesthetic design with IT website systems.

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