Usability Attributes of the Celluloid Interface: Perceptions of Interactivity in the Age of "Blade Runner"

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A user interface can broadly be defined as being those attributes of a system that a user connects with. It is a conceptual structure made up of an input language for the client, an output language for the system and a modus operandi for choreographing interaction. The usability of an interface is defined as the efficiency and level of gratification with which users can accomplish tasks in a specific environment of a product. High usability means that a system is typically easy to learn and remember; efficient, visually and perhaps aurally satisfying and fun to use; as well as swift in its capacity to recover from errors (Nielsen, 1993).

Some media theorists view cinema as being a kind of cultural interface for society that acts akin to a collective consciousness (Manovich, 2001) but more generally the notion of the user interface is applied within the context of human-computer interaction. What is the mainstream public's view of the human-machine interface?

Cinema is a popular form of entertainment that implicitly shapes the belief of the masses on a wide variety of concerns. This art-form also has the capacity to mirror the predominant societal customs, issues and systems of the time. A film can contain a wealth of detail in its sub-text that when subject to interpretation can be transformed into new knowledge. Indeed, in this vein, academic studies have explored diverse topics ranging from the cinematic image of chief executive officers of non-profit organizations in the U.S. (Lee, 2004) to the pedagogic effects of motion picture depictions of analytical chemistry in action (Lucy, 2000). In the latter paper the author remarks that fictional representation can function as a mechanism to foster contemplation of an actual scientific technique's authentic potential for better or worse.

McMurdy (1973) argues for a closer relationship between imaginative literature and public administration scholarship, highlighting the significance of personal discernment in the evaluation of organizational phenomena and the beneficial role that fiction could have in testing existing theories and developing new insights. Academic interest in the fictional portrayal of some occupations such as the legal profession has grown appreciably in the past decade, a fact noted in a recent study of admiralty lawyers in popular culture by Jarvis (2006). Computer science and information systems, though, are lagging behind in this eclectic technique of mining popular culture for wisdom that could inform scholarly progress. The commentaries by Mathews & Reifers (1984) and Grupe (1996) are a rare exception as they examine nascent public attitudes towards the computer as reflected in cartoons published in print media since the 1940s. In a more applied outlook, the Institute for Creative Technologies (affiliated with the University of Southern California) is a research centre that is a partnership between the Hollywood entertainment industry, the U.S. military and academia (e.g., Gratch, Rickel, André, Cassell, Petajan & Badler, 2002). The goal of the centre is to create technical environments that evoke synthetic experiences for learning, training and other operational functions and it does so with input from film personnel such as cinematographers as well as traditional IT researchers.

Films of the science fiction and action genres often feature plots where computers are prominent devices (Vos Post & Kroeker, 2000). Clarke (1993) notes that the stories of science fiction author Isaac Asimov could shape the destiny of computer ethics. Aaron Marcus, a leading user interface designer, claims to have developed an early interest in his current field of expertise by being exposed to images of future technology at the movies and on TV (Marcus, 2006). Indeed, some scholars have advanced the notion that works of speculative fiction in general can act as an inspiration for future technological development in an actual sense (Boutillette, Coveney, Kun & Menides, 1999).

In terms of the technically literate audience, is the public perception of the usability of current and future computer systems being influenced by what is depicted in the cinema? In this study, examples of usability issues from films such as "Blade Runner", "2001: A Space Odyssey", the "Matrix" trilogy and "Minority Report", amongst others, will be investigated in terms of their technical validity, ethical rationale and potential cultural side-effects. An allied matter to be addressed is whether or not the creative inclinations of user interface designers are shaped by these genre-based forces. The usability attributes of the fictional interfaces depicted in films of the science-fiction variety will be classified in the long-term and arguments will be raised as to the effect these have on the expectations of users as they relate to actual human-computer interface technology.

"Blade Runner" is a science fiction film released in 1982 but it depicts a dystopian Los Angeles in 2019, a future where the technologies on display are a hybrid melange of the past, present and fute. There is a sequence in the story where the lead character Deckard (portrayed by Harrison Ford) is using a computer device known as an Esper. This apparatus is employed in this scene to manipulate photographic imagery in the search for a particular individual. Terse vocal commands of an alphanumeric nature control the mechanism in its operation, with the Esper providing feedback via high frequency sounds. A person viewing this scenario who is not an IT practitioner or academic may be oblivious to the technical minutiae unfolding at this juncture. Perhaps they may even be bored by the detail. Accumulated technological wisdom, however, may affect the experience of the viewing. With this background, the sequence could serve as a touchstone for debate about usability issues. To a computing academic experiencing this "Blade Runner" segment, what is the meaning of the Deckard-Esper interface as enacted on screen? This key question will initiate a novel phenomenological study to launch the overall research project.

Phenomenology is a research technique employed to obtain an intricate, richly textured understanding of human experience in a wide variety of contexts. In stark contrast to positivist enquiries, this practice concentrates on subjective experience as being the prime source of all knowledge defining objective phenomena. Akin to producing a complex piece of literature that juggles multifarious dominant themes interleaved with allusions, the output of this research approach succinctly describes observed commonalties in terms of ideas, issues and subject matter when individuals are confronted with a phenomenon that they experience. To achieve this goal requires the pursuit of four main stages of the phenomenological process: epoche, reduction, imaginative variation and synthesis of composite structural descriptions (Moustakas, 1994). Epoche is an idiosyncratic term coined by the originator of phenomenology Edmund Husserl and refers to the initial step of sweeping aside the personal bias of the researcher in order to accentuate a naïve interpretation of the human experience under consideration.

Once the state of epoche has been suitably negotiated, the reduction stage is undertaken by describing the phenomenon using richly textured language so as to obtain a deep level of comprehension. All statements rendered in the ensuing text are then inspected with the thought that they are of equal value, this being a procedure known as "horizonalizing". The aim is to extract a structural appreciation of the interweaving between person, conscious experience and the phenomenon that stimulates the latter. The third step, imaginative variation, revolves around speculative ruminations to explore possible experiential meanings through divergent thinking and systematic reflection. To conclude, synthesis assimilates the structural and textural vantages encountered in the previous stages into a coherent unified statement, which encapsulates the quintessential nature of the phenomenon.

West (1997) advocates the existence of a "hermeneutic computer science" to augment the formalist orthodoxy permeating the study of information technology. Such an approach can provide strategies to deal with the problems encountered with complexity. Hermeneutics is the study of interpretation, usually of texts but also of systems in general. Phenomenology is one strand of this paradigm and the concepts to be plumbed in the ensuing investigation will possibly include multiple-perspectives, cooperative and transient meaning, emergence, self-organization, variation, evolution as well as elucidation in general.

The "Blade Runner" film segment as described above will be employed as a phenomenological stimulus to be viewed by a number of academics from the domain of information systems. The interpretive research methodology as outlined above will then be adopted to gauge the subjective experience of this unique cohort. Conventional HCI research often involves the deployment of usability labs that consist of sophisticated video recording equipment and observation facilities such as one-way mirrors to permit fastidious scrutiny of users engaging with the interface of a product (Dillon, 1988). In an ironic sense, the motion picture sequence to be viewed in this research project will be akin to a cinematic usability lab, the one-way mirror here being the film artifact and the message that its viewers experience via the unilateral conduit of entertainment.

REFERENCES

Boutillette, M., Coveney, C., Kun, S. & Menides, L. J. (1999**). The influence of science fiction films on the development of biomedical instrumentation.** *Proceedings of the IEEE 25th Annual Northeast Bioengineering Conference*, 143-144.

Clarke, R. (1993). Asimov's laws of robotics: implications for information technology - Part I. *IEEE Computer*, *26*(12), 53-61.

Dillon, A. (1988). The role of usability labs in systems design. In: E. Megaw (ed.) *Contemporary Ergonomics 88*. London: Taylor and Francis, 69-73.

Gratch, J., Rickel, J., André, E., Cassell, J., Petajan, E. & Badler, N. (2002). Creating Interactive Virtual Humans: Some Assembly Required. *IEEE Intelligent Systems*, *17*(4), 54-63.

Grupe, F. H. (1996). Computoons: The evolving image of computers in cartoons. *IEEE Computer*, *29*(4), 55-62.

Jarvis, R. M. (2006). The admiralty lawyer in popular culture. *Journal of Maritime Law & Commerce*, 37, 23-48.

Lee, M. (2004). What does Hollywood think nonprofit CEOs do all day? Screen depictions of NGO management. *Public Organization Review: A Global Journal*, *4*, pp. 157-176.

Lucy, C. A. (2000). Analytical Chemistry: A Literary Approach. *Journal of Chemical Education*, *77*, 459-470.

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

Marcus, A. (2006). CHI at the Movies and on TV. *interactions*, *13*(3), 54-55, 71.

Mathews, W. M. & Reifers, K. (1984). The computer in cartoons: A retrospective from *The Saturday Review. Communications of the ACM*, *27*, 1114-1119.

McCurdy, H. E. (1973). Fiction Phenomenology and Public Administration. *Public Administration Review, 33*, 52-59.

Moustakas, C. (1994). *Phenomenological Research Methods*. Thousand Oaks, CA: Sage.

Nielsen, J. (1993). *Usability Engineering*. Boston, MA: Academic Press.

Vos Post, J. & Kroeker, K.L. (2000). **Writing the future: Computers in science fiction.** *IEEE Computer*, *33*(1), 29-37.

West, D. (1997). Hermeneutic computer science, *Communications of the ACM*, *40*(4), 115.

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