

account when developing any similar publicly accessible system. (By M. E. Modell, Commack, NY) [Excerpted from COMPUTING REVIEWS, May, 1985].

Woods, David D. (Westinghouse Research and Development Center, Pittsburgh, PA)

Visual momentum: a concept to improve the cognitive coupling of person and computer. INT. J. MAN-MACHINE STUDIES, 21, 3(Sept. 1984), 229-244.

The author proposes that the concept of "visual momentum," based upon knowledge about human perception, be used as a heuristic to aid in improving display design, so that users will be better able to cognitively process successive displays, thus maximizing the amount of information they obtain from the display system. "Visual momentum" is defined as "a measure of the user's ability to extract and integrate information across displays ... a measure of the distribution of attention."

Looking at a CRT is a subset of the psychological perceptual process involved in looking at the world. Certain general propositions from the psychological literature are referenced. The principle of "visual momentum" consolidates several human performance problems with visual displays, in order to better inspire solutions. The strong feature of the paper is a carefully documented excursion into the relevant literature. The consolidation of ideas about computer display system use led to a worthwhile theoretical statement. (By J. N. Rose, Delhi, NY) [Excerpted from COMPUTING REVIEWS, June, 1985].

Foley, James D. (The George Washington Univ., Washington, DC); Wallace, Victor L. (The Univ. of Kansas, Lawrence); and Chan, Peggy (Arthur Young & Co., and The George Washington Univ., Washington, DC) The human factors of computer graphics interaction techniques. IEEE COMPUT. GRAPH APPL. 4, 11(Nov. 1984), 13-48.

The design of man-machine interfaces utilizing interactive computer graphics is still largely an art. This paper attempts to provide a foundation for some aspects of this design process. The main subject matter of the paper concerns "interaction tasks." These are similar to the "logical input devices" found in several device independent graphics packages. Six interaction tasks are defined: Select, Position, Orient, Path, Quantify, and Text. The

factors affecting the choice of implementation technique for the interaction tasks are described. A large number of implementation options are presented, together with relevant ergonomic factors and results of comparative experiments.

The paper makes reference to much ergonomic and human factors literature which is, as yet, little known by the computer graphics fraternity. A bibliography provides a wealth of background reading. The paper makes a significant contribution not by providing answers but making designers aware of more options, and of the many ergonomic considerations which should be taken into account. (By R. Rolph, Cambridge, England) [Excerpted from COMPUTING REVIEWS, June, 1985].

Murch, GERALD M. (Tektronix, Inc., Beaverton, OR)

Physiological principles for the effective use of color. IEEE COMPUT. GRAPH, APPL. 4, 11(Nov. 1984) 49-54.

This paper contains the sorts of principles too often ignored by those who construct computer displays to convey information, principles which rest on the physical characteristics of the human information processing machine. Unlike many papers in this genre, this is a clearly written collection of facts which are not generally known or widely appreciated, together with a closely argued list of their implications for the design of effective color displays. The density of directly useful information in this paper is very high.

The first of two sections in the paper deals with the physiology of color, including the lens, retina, and optic nerve. It describes the basic signal processing characteristics of the human eye. The second section, on using color effectively, contains ten principles which show how this information can be applied. Some important and non-obvious conclusions are drawn here. (By R.A. Thisted, Chicago, IL.) [Excerpted from COMPUTING REVIEWS, June, 1985].

Benbasat, Izak; and Wand, Yair (The Univ. of British Columbia, British Columbia, Canada)

A structured approach to designing human-computer dialogues. INT. J. MAN-MACHINE STUD. 28, 2(Aug. 1984), 105-126.

This article would be most interesting to a practicing designer of interactive interfaces who is faced with the following problem. A large command language interface is to be