

Display Design for the Eye and Mind

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Abstract

Complex sets of numbers often can be effectively digested only after they are illustrated in charts, graphs or diagrams. However, some of these pictures are worth far less than the proverbial 1,000 words. If a visual display taxes the human perceptual, memory, or cognitive systems, it will be difficult to understand. This talk shows how facts about human information processing can guide one to design “articulate” graphics, which can be read easily and understood immediately. This information is organized into three general “maxims,” which in turn are used to organize sets of individual principles. Each of the principles is illustrated with “good” and “bad” displays taken from magazines, technical digests, books, newspapers, and other sources. The talk will conclude with some reflections about ways in which computational systems can take advantage of these principles, for example by providing no more and no less information than is relevant to the viewer's immediate concerns.

Stephen M. Kosslyn is John Lindsley Professor of Psychology at Harvard University and Associate Psychologist in the Department of Neurology at the Massachusetts General Hospital. His research has focused primarily on the nature of visual mental imagery, visual perception, and visual communication; he has published 7 books and over 200 papers on these topics. Many of these papers focus on testing a neurologically plausible theory of mental imagery he and his group have developed over the past 30 years. Kosslyn has received the APA's Boyd R. McCandless Young Scientist Award, the National Academy of Sciences Initiatives in Research Award, the Cattell Award, the J-L. Signoret Prize (France), and election to Academia Rodinensis pro Remediatione (Switzerland), the American Academy of Arts and Sciences, and the Society of Experimental Psychologists.