Compilation of Eye Movement Research.

Efforts to use eye movement data to elucidate cognitive processes center on phenomena ranging from basic physiological processes to complex processes such as decision-making and job performance, and have been very productive. Irrespective of the particular task being studied, individual differences efforts have yielded differences in eye movements at five levels: (1) stages or phases; (2) differences in the sequential distribution of processing activities; (3) strategy components and strategies; (4) differences in eye movement patterns over time attributable to learning; and (5) flexibility, which occurs when an individual maintains processing efficiency as the demands of a task change. A categorized bibliography of eye movement research in the above areas is provided. (Contains 140 references.) (Author/JDM)
Compilation of Eye Movement Research

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Abstract

Efforts to use eye movement data to elucidate cognitive processes center on phenomena ranging from basic physiological processes to complex cognitive processes such as decision-making and job performance have been very productive. Irrespective of the particular task being studied, individual differences efforts have yielded differences in eye movements at five levels: (a) stages or phases; (b) differences in the sequential distribution of processing activities; (c) strategy components and strategies; (d) differences in eye movement patterns over time attributable to learning; and (e) flexibility, which occurs when an individual maintains processing efficiency as the demands of a task change. A categorized bibliography of eye movement research in the above areas is provided.
Eye Movement Bibliography

Basic Physiological Processes


**Perception, Laterality, and Hemispheric Processing**

Cognitive Processes, Perception, Attention, Representations, Information Processing, and Reasoning


**Memory**


**Language and Reading**


**Cognitive and Perceptual Development**


**Instrumentation**


**Human Factors**


**Group Processes and Gaze Behavior**


**Special Populations, Psychiatry, Counseling, and Head Injury**


Schizophrenia and attention-deficit/hyperactivity disorder (ADHD). *Journal of
Abnormal Child Psychology, 27*(1), 35-49.

Carte, E. T., Nigg, J. T., & Hinshaw, S. P. (1996). Neuropsychological functioning,
motor speed, and language processing in boys with and without ADHD. *Journal of

Chen, Y. (1999). Psychophysical isolation of a motion-processing deficit in
schizophrenics and their relatives and its association with impaired smooth
pursuit. *Proceedings of the National Academy of Sciences of the United
States of America, 96*(8), 4724-4729.

among schizophrenia patients and their first-degree biological relatives. *Journal of
Abnormal Psychology, 103*, 277-287.

Easterbrook, M. A. (1999). Newborns discriminate schematic faces from scrambled

schizophrenia. Poster session presented at the annual meeting of the International
Neuropsychological Society, Orlando, FL.

of saccadic eye movement in patients with frontal cortical lesions and
Parkinsonian patients in comparison with that in schizophrenics. *Biological
Psychiatry, 36*, 21-30.

schizophrenic patients and normal controls in a picture viewing task. *Biological
Psychiatry, 22*, 1227-1237.

Groves, N. (2001). Eye tracking shown to benefit a select group. *Ophthalmology Times,
26*(11), 1-2.

effort hypothesis and an analysis of the search operating characteristics. In R.
Schmid & D. Zambardi (Eds.), *Oculomotor control and cognitive processes:


**Reviews of Literature**


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