TEXT ORIENTING CUES: ENHANCING DYNAMIC VISUAL ACUITY FOR TARGETS OF UNKNOWN ORIGIN.

by

Joseph P. Shevlin

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Albert M. Prestrude, Chairman

Robin P. Cooper
Joseph J. Franchina
Bruce H. Friedman
Neil Hauenstein
Justin D. Rueb

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by Joseph P. Shevlin
Chairman: Albert M. Prestrude, Department of Psychology

(Abstract)

Dynamic Visual Acuity (DVA) refers to an observer's ability to resolve a critical detail in a visual target under conditions of relative motion between an observer and a target. DVA research has conventionally used visual targets originating from a single fixation point and moving in a predictable linear path. These procedures (dictated by apparatus constraints), ensured observers knew when and from where targets would appear. Shevlin, Prestrude, and Shevlin (1997) examined DVA using computer-generated targets presented from fixed (left to right) and random (six possible) origins. As hypothesized, random targets were more difficult to resolve than fixed targets. Fixed target data supported the conventional DVA findings – faster targets and targets displayed more briefly were harder to resolve. Random target data contradicted the DVA literature suggesting increased target velocity actually *improved* DVA (Shevlin et al., 1997). In the current study all targets moved in similar fashion, eliminating type of movement as a confound from the 1997 study. Twenty-eight West Point cadets observed computer DVA targets under each of two viewing conditions. Prior to viewing each target, observers in the "known origin" condition saw text cues revealing the origin of the next target; whereas, observers in the "unknown origin" condition received text notification that a target would appear. As hypothesized, known origin target data supported conventional DVA relationships - faster targets and targets exposed more briefly were more difficult to resolve. As predicted, unknown origin data partially contradicted conventional DVA relationships. At the briefest duration (170 ms), faster targets were *easier* to resolve than slower targets. Observers in the known origin condition displayed a DVA advantage from the text cues. The patterns of individual differences in the data suggest not all observers benefited from the DVA advantage offered by the text cues. Analysis of target data indicated a slight DVA decrement for left-oriented Landolt C targets. Implications of the computerized DVA testing platform are discussed for future DVA research.

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