
Name *	Zachary Roper
Email *	zachary-roper@uiowa.edu
Educational Level *	PhD Candidate
If Selected Other	
College *	College of Liberal Arts and Sciences
Department *	Psychology
Title of Research *	Delays of attentional disengagement predict useful field of view decline in older adults.
Other Authors *	Matthew Rizzo, MD (UI Interdisciplinary Neuroscience Program, Department of Engineering); Shaun Vecera, PhD (UI Department of Psychology, Interdisciplinary Neuroscience Program)

Introduction & Purpose *

Extant hypotheses concerning the role of attentional limitations in older adults propose a constriction of the attentional window. Attentional constriction reduces the area over which visual information can be extracted in a single glance thereby limiting the so-called useful field of view (UFOV) in those individuals. However, the attentional deficits commonly found in individuals experiencing cognitive decline reflect not only issues involving the scope of attention but also several other attentional processes – foremost of which is attentional disengagement. In contrast to the constriction hypothesis, we propose that the mechanism that produces attentional deficits – such as those experienced by adults with accelerated attentional decline – may reflect an impairment in disengaging attention from the currently selected visual stimulus.

Experimental Design *

Subjects completed two computer-based attention tasks. The first was a Global/Local task that involved discriminating target letters on one of two levels -- a small/local scale and a large/global scale. The second task resembled a basic cuing paradigm but incorporated a variable Stimulus Onset Asynchrony (SOA). We tracked the pattern of attentional benefits granted by the cue as a function of SOA.

Results *

Using two well-studied attentional tasks, we showed that (1) UFOV decline cannot be solely explained by either low level visual acuity degradation or a constriction of the attentional window, and (2) delays in attentional disengagement serve as a good predictor of UFOV impairment.

Conclusions *

These results suggest a more parsimonious account of UFOV decline that involves an impairment of the specific process of attentional disengagement rather than the multiply-determined process of constricting the attentional window. Because the UFOV is a reliable predictor of driving safety, these results stand to play a critical role in the visually derived behavior of older adults.

2 Apr 2012

8:24:27 PM

PUBLIC