THE COST AND BENEFIT OF ENHANCED VULNERABILITY TO DISTRACTION IN OLDER ADULTS

Lixia Yang, PhD., & Lynn Hasher, PhD., University of Toronto, Toronto, Canada

Introduction

As a consequence of age-related decline in inhibitory control (Hasher & Zacks, 1988), older adults are more vulnerable to distraction and so show greater interference effects relative to their younger counterparts (e.g., Carlson, Hasher, Connelly, & Zacks, 1995; Kane & Hasher, 1995). Meanwhile, older adults also differentially benefit when the distraction actually leads to correct responses in solving word problems of the Remote Associate Test (May, 1999). In the current study, we intend to replicate and extend these result patterns in the context of semantic priming in which we used a modified picture-word interference paradigm (Damian & Bowers, 2003; Gernsbacher & Faust, 1991).

Sample

A sample of 23 older adults (M = 69, range = 60-75 year) and 20 younger adults (M = 20, range = 17-28 year) participated in the study. As we expected, older participants had more years of education (Mold = 17, Myoung = 14) and higher vocabulary scores than younger adults (ts > 5.9, ps < .001).

Method

Materials and procedure. On each trial, participants viewed a context display (800 ms) which contained a target word superimposed on a to-be-ignored distractor picture, followed by a test word after a 50 ms interval. The task was to judge whether the test word was semantically related to the target word as accurately and quickly as possible.

Results

Benefit in accuracy = Congruent – Congruent Control
Benefit in Response time (RT) = Congruent Control - Congruent

Cost in accuracy = Incongruent – Incongruent Control
Cost in Response time (RT) = Incongruent Control - Incongruent

Accuracy. No age difference in benefit, marginal age difference in cost, t = 1.14, p = .08

RT. Older adults showed larger benefit (t = 4.08, p < .001) and larger cost (t = 2.55, p < .05) than younger adults.

Discussion and Conclusion

Older adults, compared with younger adults, benefit more from congruent distractors and are bothered more by incongruent distractors. These results are consistent with the Inhibitory-Deficit theory (Hasher & Zacks, 1988) which assumes an age-related decline in attentional regulation over distraction. We attribute this to reduced inhibitory control in older adults which makes them more vulnerable to distraction, and thus differentially show larger benefit and cost by the to-be-ignored information.

Key References