

BRIEF SUMMARY

Twedell, E. L., Koutstaal, W., & Jiang, Y. V. (2017). Aging affects the balance between goal-guided and habitual spatial attention. *Psychonomic Bulletin & Review*, xx, xxx–xxx.

Visual clutter imposes significant challenges to older adults in everyday tasks and often calls on selective processing of relevant information. Previous research has shown that both visual search habits and task goals influence older adults' allocation of spatial attention, but has not examined the relative impact of these two sources of attention when they compete. To examine how aging affects the balance between goal-driven and habitual attention, and to inform our understanding of different attentional subsystems, we tested young and older adults in an adapted visual search task involving a display laid flat on a desk. To induce habitual attention, unbeknownst to participants, the target was more often placed in one quadrant than in the others. All participants rapidly acquired habitual attention toward the high-probability quadrant. We then informed participants where the high-probability quadrant was and instructed them to search that screen location first—but pitted their habit-based, viewer-centered search against this instruction by requiring participants to change their physical position relative to the desk. Both groups prioritized search in the instructed location, but this effect was stronger in young adults than in older adults. In contrast, age did not influence viewer-centered search habits: the two groups showed similar attentional preference for the visual field where the target was most often found before. Aging disrupted goal-guided but not habitual attention. Product, work, and home design for people of all ages—but especially for older individuals—should take into account the strong viewer-centered nature of habitual attention.

KEYWORDS: aging, visual attention, implicit learning, spatial-reference frame