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J Exp Psychol Learn Mem Cogn. 2008 Sep;34(5):1139-57. doi: 10.1037/a0012797.

# **Implicit learning of predictive relationships in three-element visual sequences by young and old adults**

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**Affiliations**

PMID: 18763897 PMCID: [PMC2546574](#) DOI: [10.1037/a0012797](#)

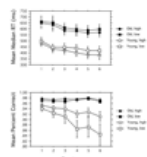
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## **Abstract**

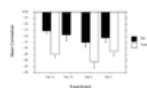
Knowledge of sequential relationships enables future events to be anticipated and processed efficiently. Research with the serial reaction time task (SRTT) has shown that sequence learning often occurs implicitly without effort or awareness. Here, the authors report 4 experiments that use a triplet-learning task (TLT) to investigate sequence learning in young and older adults. In the TLT, people respond only to the last target event in a series of discrete, 3-event sequences or triplets. Target predictability is manipulated by varying the triplet frequency (joint probability) and/or the statistical relationships (conditional probabilities) among events within the triplets. Results reveal that both groups learned, though older adults showed less learning of both joint and conditional probabilities. Young people used the statistical information in both cues, but older adults relied primarily on information in the 2nd cue alone. The authors conclude that the TLT complements and extends the SRTT and other tasks by offering flexibility in the kinds of sequential statistical regularities that may be studied as well as by controlling event timing and eliminating motor response sequencing.

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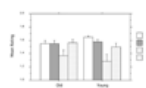
## **Figures**



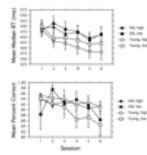
**Figure 1** Mean of median RT (upper...



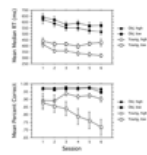
**Figure 2** Mean correlation between triplet joint...



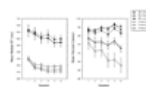
**Figure 3** Mean recognition ratings by triplet...



**Figure 4** Mean of median RT (upper...



**Figure 5** Mean of median RT (upper...



**Figure 6** Mean of median RT (left...

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