

BRIEF REPORTS

A DEVELOPMENTAL STUDY OF RETENTION¹

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While performance on various learning tasks typically improves with age, as does the use of elaborative and rehearsal devices, the issue of whether there is a parallel improvement in retention of what has been learned remains an independent question. There is some evidence that retention ability is equivalent among school-aged children. The one study that compared the retention of preschool and school-aged children was performed by Koppelaar, Krull, and Katz (1964). They used a four-item list coupled with short and long retention intervals that resulted in ceiling and floor effects, respectively.

The present study compared the long-term retention of a single list learned by 3-, 6-, and 9-year-olds. From the interference theory of forgetting (Underwood, 1966), one would predict superior retention for the younger children, who have fewer extraexperimental language habits to compete with those they are required to learn in the laboratory. On the other hand, Campbell and Spear (1972) have argued that the young of species born with immature nervous systems show poorer retention than do the adults. Thus, the 3-year-olds, who are assumed to have immature nervous systems, might be expected to show poorer retention than the 6- and 9-year-olds.

Subjects learned an eight-item paired-associate list by the study-test method to a criterion of six out of eight correct. Retention was tested either immediately or 1 week later. The stimuli, colored pictures of familiar objects, were projected on a screen during the study and test

trials for 5 and 8 seconds, respectively. At each age, there were 20 children tested at each retention interval.

The mean numbers of trials to criterion, for 3-, 6-, and 9-year-olds were 3.52, 2.60, and 2.40, respectively. This difference was significant ($F = 7.62$, $df = 2/108$, $p < .05$). While the 3-year-olds took longer to learn than the 6- and 9-year-olds, correct responses at criterion did not differ among the three age groups ($F = 2.32$, $df = 2/108$; \bar{X} s = 6.48, 6.58, and 6.82, in increasing order of age). Subjects in the immediate- and delayed-recall conditions did not differ on either acquisition measure.

Loss scores, the difference between the number correct on the criterial trial and the number recalled on the test trial, were computed for each subject. On the immediate-retention test, the scores were .70, .25, and .05, for the 3-, 6-, and 9-year-olds, respectively. On the delayed test, losses were 2.10, 2.50, and 2.60, for the 3-, 6-, and 9-year-olds, respectively. The only significant effect was that for the time of the test ($F = 88.99$, $df = 1/108$, $p < .01$). The Age \times Retention Interval interaction failed to reach significance, indicating that there was no differential forgetting for children between the ages of 3 and 9. These results conform to neither of the two theoretical positions that might lead one to expect age differences in retention.

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