Shift behavior in naive and sophisticated children

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Thirty-three 3½- to 5½-year-old children learned a conditional discrimination problem involving both reversal (RS) and nonreversal (NRS) paradigms. The performance of children who had learned a reversal problem four months previously was superior to that of the naive children.

Although many Es use sophisticated Ss, either by design or of necessity, very little information exists on the possible interactive effects of task variables and the prior experience of human subjects. Typically, in studies with animals (e.g., Warren & Sinha, 1959; Riopelle, 1959; Weinstein, 1941) or with retardates (e.g., Eimas, 1964; Fletcher, 1965; House & Zeaman, 1963) the previous experimental history of Ss is known and reported. However, in many studies on learning in preschool children, no mention is made of the previous experience of the children. This note reports an interactive effect which might be attributed to developmental factors were S's history not known, in an area where developmental level is an important theoretical variable (e.g., Kendler & Kendler, 1962).

Method. Thirty-three 3½- to 5½-year-old children were Ss in an experiment on conditional discrimination learning. The children learned a simple two-choice discrimination in the first task, with the relevant dimension being color (blue or yellow) for half the Ss and form (circle or diamond) for the other half. The first task was followed by a conditional discrimination which constituted a mixed list, within S comparison of both reversal shift (RS) and nonreversal shift (NRS) paradigms. In this task color was relevant on half the trials, and form was relevant on the other half, depending on which dimension was variable within a single trial setting. Thus, if color were relevant on a particular trial, both stimuli were the same shape; if form were relevant, both stimuli were the same color. This method has previously been demonstrated to produce results congruent with the usual between subject design comparisons of reversal and nonreversal shifts (see Saravo, 1967, for a complete description of the design).

Twenty-four of these children were not experimentally naive; 20 had participated in an overtraining-reversal experiment four months previously. In this experiment the children had learned a discrimination and then its reversal, using a cup and a spool of thread as the discriminanda. The remaining four sophisticated children had been Ss in a reversal experiment with a triangle and a square as stimuli. A modified WGTA was used with the discriminanda mounted on plaques in all but the triangle-square study. In that experiment object patterns, back projected onto two small screens, were the stimuli.

Results and Discussion. There was no difference between the 24 sophisticated Ss and the nine naive Ss on the first task ($t = .608$); mean number of errors in the first task was 2.00 and 2.89, respectively. On the transfer task, the naive and sophisticated Ss behaved quite differently. The sophisticated Ss made fewer errors overall (the conditional discrimination), although this effect was marginal ($F = 4.10$, $df = 1/31$; critical value for alpha = .05, $df = 1/30$, is 4.17). In addition, the reversal component of the task was easier for the sophisticated children than for the naive children ($t = 3.14$, $df = 31$, $p < .01$). While there was no difference in performance by the sophisticated Ss on RS and NRS (mean errors = 6.58 and 6.54, respectively), the naive Ss made more errors on the reversal shift (mean errors for RS = 15.11 and for NRS = 7.78; $t = 3.06$, $df = 8$, $p < .02$). These effects are supported by a significant interaction between subject populations and type of shift ($F = 15.83$, $df = 1/31$, $p < .001$).

These serendipitous findings are tentative, and should be replicated by design. They do, however, suggest that children's performance on learning tasks is likely to be influenced by their prior experimental history and that interpretation of findings must reflect this possibility. At the very least, previous experimental history of preschool Ss should be made explicit.

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NOTE

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