Observational learning of modeled responses under shock-avoidance conditions as a function of attitude similarity and attraction toward the model

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Ss differing in the degree to which they were led to believe that a stranger's attitudes were similar to their own observed the stranger (a confederate) in a verbal learning situation in which shock was supposedly administered for incorrect responses. The confederate's performance was programmed so as to be the same for all Ss. Ss in the high-similarity condition, while manifesting greater attraction toward the model, showed significantly less observational learning than did low-similarity Ss. While tending to rate the shock supposedly experienced by the model as being more painful, high-similarity Ss did not rate themselves as having experienced more distress in seeing the model shocked.

Among the variables that have been shown to affect observational or vicarious learning is the degree of similarity between observer and model. Observer-model similarity has been shown to enhance modeling effects under conditions in which the model is positively reinforced for correct responses (Rickard & Lattal, 1967), as well as under model nonreinforcement conditions (Burnstein, Stotland, & Zander, 1961). However, the manner in which similarity affects observational learning within an avoidance learning paradigm has not been investigated. The present study was designed to assess modeling effects within a shock-avoidance situation as a function of degree of attitude similarity between observer and model.

METHOD

The Ss were 44 male college students who were assigned randomly to two attitude-similarity (AS) conditions. AS was manipulated in the manner described by Byrne (1969). In individual experimental sessions, Ss were administered a questionnaire on which they indicated their attitudes toward 12 issues. S was then presented with the responses of a stranger of S's sex and age on the same questionnaire. The stranger's responses had actually been generated by E so as to agree with S's responses on 2 of the 12 issues (low-AS condition) or on 10 of the 12 (high-AS condition). S was then told that he would observe the stranger being run in a paired-associates learning experiment involving electric shock. A one-way vision mirror was then uncovered and an intercom was turned on, allowing S to observe and hear the stranger (actually a confederate of E) in an adjoining room. E then entered the adjoining room, where he attached a set of bogus electrodes to the right hand of the confederate (C) and told the latter to listen carefully to his instructions, which would be presented by tape recording. Following C's instructions, which described the paired-associates learning task and included a statement that each incorrect response would be followed by a brief electric shock, S observed C perform on the task. Seven paired-associate items were presented verbally by tape recording, with C giving his verbal response during a 2-sec interval between the stimulus and response words. The paired associates, adapted from Spence, Farber, & McFann (1952), required the learning of arithmetically incorrect answers to multiplication equations (e.g., $3 \times 4 = 9$). C's responses were programmed so as to be the same for all Ss and to conform to a standard learning curve across four trials. For each paired-associate item, C gave the correct response on two trials, while giving incorrect responses on the other two trials. After each incorrect response, E activated a loud switch on an illuminated panel to which C's electrode wires were attached, and C jerked his hand as if he had been shocked. He was instructed to make no other bodily or facial movement. C did not know to which AS condition the S had been assigned.

Following his observation of the stranger, S was asked to complete an interpersonal judgment scale containing three 7-point rating scales concerning probable liking of the stranger, probable enjoyment of working with him, and probable enjoyment of having the stranger as a roommate. S's ratings on these three scales were summed to yield a measure of attraction toward the stranger. S also completed 7-point scales regarding how painful he judged the shock administered to C to have been and how much distress he experienced in seeing C shocked. Under no-shock conditions, S was then administered one trial of the seven paired-associate items by tape recording and was asked to give the correct response to as many as he could remember from having observed the stranger. S's score on this task constituted the measure of observational learning.

RESULTS

The major dependent variable was the observational learning (OL) scores for the two AS conditions. Analysis of variance showed the high-AS group to have a significantly lower mean OL score (mean = 1.81) than did the low-AS (mean = 2.18) group ($F = 4.75$, $df = 1/42$, $p < .05$). Analysis of the rating scales completed by Ss after observing C indicated that the high-AS group showed greater attraction toward the model than did the low-AS Ss (high-AS mean = 15.81; low-AS mean = 13.45; $F = 7.01$, $df = 1/42$, $p < .02$). The high-AS Ss also showed a nonsignificant tendency to rate the shocks experienced by the model as being more painful (high-AS mean = 3.59, low-AS mean = 3.18). The AS groups did not differ in the mean ratings of subjective distress experienced while observing the model being shocked (both means = 2.32).

DISCUSSION

In contrast to previous studies that have shown perceived similarity to the model to enhance observational learning and modeling effects, the present investigation found AS to be negatively related to learning. A number of possible explanations are suggested.

The high-AS group showed significantly greater attraction toward the model. It would then seem reasonable to assume that observing the model receive shock would be more aversive for these Ss than for Ss in the low-AS group. And yet, while tending to judge the shocks as being more painful than did the low-AS Ss, the high-AS Ss reported experiencing an identically low level of subjective distress. One possible explanation for this pattern of results is that the high-AS Ss successfully adopted measures designed to minimize unpleasant emotional responses to seeing the model shocked. One method of doing so would be to attend less closely to the situation involving the model. Lowered attention would, in turn, be expected to result in less observation learning. A second possible explanation for the present results, based again on the assumption that observing the model being shocked would be more likely to arouse a negative emotional response in high-AS Ss, involves the nature of the paired-associates task. Spence, Farber, & McFann (1952) have shown anxiety to be negatively related to performance on this task. If, despite their claims to the contrary, high-AS Ss did experience higher levels of emotional arousal while observing the model, it is possible that their heightened emotionality interfered with vicarious learning processes.

The present results thus suggest that, under certain conditions, observer-model similarity may serve to impede rather than enhance observational learning. These conditions are likely to involve the evocation of negative affective responses in the observer which interfere with observational learning, either directly or indirectly, through self-generated avoidance responses made by the observer.

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Comparison of two types of tactile exploration in a task of mirror-image recognition

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The ability to discriminate mirror images was tested with 5-year, 6-month-, to 6-year-old children in comparing performances using either visual or tactile cues. On the tactile tasks we observed that the blindfolded Ss could perform as proficiently as sighted ones when restricted to tactile palpation of the form outlines using only the fingers together with wrist movements. However, they performed significantly worse when movement was restricted to the shoulders and the form outlines were explored with the two tips of their outstretched forefingers.

It appears to be difficult for young children to discriminate visually between identical forms presented as mirror images (Pick et al, 1966; Robinson & Higgins, 1967), particularly when they are symmetrical about the vertical axis. The same difficulty has been observed in studies with animals. For example, Mello (1966) found similar effects with pigeons, the visual pathways of which are completely crossed. In the same way, Noble (1968) found the same difficulties with monkeys in which the optic chiasma had been sectioned.

A possible explanation of the errors observed in children involves reference to kinesthetic experience governed by a principle of symmetry about the medial sagittal plane of the body (Rudel & Teuber, 1963; Over & Over, 1967). This hypothesis led us to compare tactile with visual discriminations. In a preliminary study we compared children in a visual situation with children working in a tactile situation, using either seeing, but blindfolded, children (from 5 to 8 years of age) or blindborn children (from 5 to 14 years of age).

We asked the children in the tactile situation to recognize which of two symmetrical geometric forms presented to one hand was identical to a third perceived by the other hand. The Ss were free to explore the forms as they wanted. However, the instructions given before each trial suggested one or the other of two types of exploration: The first one mobilized the activity of the proximal segments of the arm, the second one the mobility of the fingers and the wrists.

The children in the visual situation explored the three forms visually only. They were asked to choose the one of two forms that was identical to a third, as in the tactile situation.

The task was more proficiently performed in the visual situation: With this preliminary test, sighted children performed adequately at about 5 years of age. In tactile situations there were still difficulties for 7-year-old seeing but blindfolded children and some 11-year-old blind-born children.

We observed that the 7-year-old blindfolded children and the 12-year-old blind (normal IQ) did not use the first type of exploration and preferred to examine the forms with all their fingers, keeping some of them on selected reference points.

Two hypotheses could explain the results in the tactile situation: (1) The Ss are already able to perform adequately because of their older age and choose the second type of exploration because it appears more usual; the younger children use the suggested exploration either because of timidity or lack of initiative and so will fail anyhow. (2) The type of exploration (fingers and wrists) will be chosen by the older children because it provides information fitting the transfer in the conventional (visual) context.

To test these two hypotheses we proposed an experiment in which the two types of exploration were standardized and given to all the Ss working in a tactile situation.

APPARATUS

Two series of 20 items were used in this experiment. Each item consisted of two velvet geometric and nonsense two-dimensional forms on 15 x 15 cm square cardboard sheets. These sheets were presented on a cant board (45 deg) and were separated according to the shoulder breadth of each child.

SUBJECTS AND PROCEDURE

The Ss were 40 seeing primary-school children, male and female, between 5 years, 6 months and 6 years of age.

They were divided into two conditions: tactile condition (T) and visual condition (V).

In front of each pair of forms on the cardboard sheets, the S was asked to detect as different two symmetrical forms (mirror images) or as identical two figures oriented in the same direction, that is, superimposable by a movement of translation as in the visual context of adults.

In the T condition, the Ss were blindfolded. They had to perceive the forms with their two hands, the right hand on the right form and the left hand on the