The effects of subject race and sex and experimenter race upon classroom-related risk-taking behavior*

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Students, placed in a college test-taking atmosphere, chose comparison-level feedback, consisting of either "poor," "average," or "superior" standards of performance achieved by previous students. This choice of comparison level is assumed to be similar to risk-taking behavior. Results showed that students (black or white) exhibited more risk taking (chose a higher comparison level) in the presence of an E (teacher) of their own race. Furthermore, an interaction of S sex and race was obtained in which the white male students exhibited more risk taking than did the black male students, and the black female students exhibited more risk taking than did the white female students.

Risk-taking behavior, as defined by Kogan & Wallach (1967), refers to behavior in situations where there is (1) a desirable goal and also a lack of certainty that the goal may be obtained, and (2) a choice between goals varying in desirability, with the more desirable goal having the lowest probability of attainment. The purpose of the present study was to examine the influence of selected factors upon a student's risk-taking behavior in the classroom-related situation.

In the present study, Ss were placed in a classroom test-taking environment and were urged to compete against a comparison level of their own choice. The comparison level feedback consisted of "poor," "average," or "superior" levels of performance achieved by previous Ss on the same task in which the present Ss were about to engage. It was assumed that (1) the most desirable goal was for the Ss' performances to exceed the comparison levels chosen, and (2) there was a lack of certainty that the goals might be attained. The choice of a "superior" comparison level represents the most difficult goal to attain, the choice of an "average" comparison level represents a less difficult goal to attain, and the choice of a "poor" comparison level represents the least difficult goal to attain. Thus, it is assumed that the choosing of a comparison level against

which to compete in the classroom situation is similar to risk-taking behavior.

Three variables were chosen for the present study because of their potential influence upon risk-taking behavior in the classroom situation. These were S sex (male or female), S race (black or white), and E race (black or white). Therefore, a 2 by 2 by 2 factorial design was employed with the between-S independent variables of S sex (male or female), S race (black or white), E race (black or white), and the dependent variable of comparison level chosen (poor, average, or superior).

SUBJECTS

Forty-seven (21 male, 26 female) Ss from Vanderbilt University and 60 black (23 male, 37 female) Ss from Fisk University served in the experiment as part of their psychology course requirements.

DESIGN AND PROCEDURE

The design was a 2 by 2 by 2 factorial with the independent variables of race of E (black or white), race of S (black or white), and sex of S (male or female). At Vanderbilt, 22 Ss were administered a complex verbal learning task by a white male E and 25 Ss were administered the task by a black male E. At Fisk, 39 Ss were administered the task by a white male E and 21 Ss were administered the task by a black male E.

After the Ss had been seated in the classroom, the E explained to them that the task on which they were to perform consisted of 16 information items covering Hullian learning theory and 14 fill-in-the-blank questions based upon this information. Ss were to study the information items presented by slides and were required to supply fill-in-the-blank answers to questions over the information. Next, the E explained that many Nashville college students of varying ability had

been administered the task during the past 5 years. These students' scores on the same task that the present Ss were about to take had been placed in three comparison-level groups. There was a "poor" group, consisting of the lowest 17% of previous college students, an "average" group, the mean of previous college students, and a "superior" group, consisting of the highest 17% of previous college students. The E asked the Ss to choose one of these three comparison-level groups against which they were to compete. The Ss wrote their choices as to level of comparison on blank sheets of paper and returned them to the E; Ss had no knowledge of the levels of comparison chosen by other Ss. An answer booklet was then returned to each S with his choice of comparison level, and the number of correct responses (for either the "poor," "average," or "superior" achieving previous college students) appearing directly below the Ss' choice of comparison level on the sheet for each trial. The "average" comparison level score consisted of the mean number of correct responses for Ss who had been presented the task previously. The "poor" comparison level score consisted of a number of correct responses that were one standard deviation below the mean of previous Ss. The "superior" comparison level score consisted of a number of correct responses that were one standard deviation above the mean of previous Ss.

Three trials were given, with a trial consisting of (1) presenting the 16 information items, each visible for 8 sec, and (2) presenting the 14 questions, each visible for 8 sec, with instructions to write the answer in the booklet. The task was given only to establish validity to the choice of comparison level made by the Ss. Performance of the Ss on the complex verbal learning task was not analyzed since norms for the black population of students do not exist; the feedback at the top of the booklet pages was that obtained in previous research at the predominantly white college. The effects of having different numbers of students exceeding (or failing to reach) the feedback standard in their actual performance in the two S populations cannot be predicted and too many contaminating factors would cloud any attempt to explain these results.

RESULTS

The Ss' choice of comparison level was analyzed as the dependent variable in a three-way analysis of variance with between-S variables of S race (black or white), E race (black or white), and S sex (male or female). Results of the analysis of variance showed a nonsignificant main effect of sex ($F = 3.06, p < .08, \omega^2 = .02$), in which male Ss tended to choose a

*This research was supported by Fellowship 1 FO 1-MH-47820-1 to the second author from the National Institute of Mental Health, U.S. Public Health Service. Appreciation is expressed to the staff and students at Fisk University and Vanderbilt University for their aid in the present study. The opinions expressed are those of the authors and not those of the U.S. Public Health Service.

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Fig. 1. Mean comparison level chosen as a function of S's race (black or white), S's sex (male or female), and E's race (black or white).

higher comparison level than did female Ss. Neither the main effects of S race ($F = .41, p < .53, \omega^2 = .00$) nor E race ($F = 1.39, p < .24, \omega^2 = .00$) reached significance. The interaction of S sex and S race was significant ($F = 8.89, p < .004, \omega^2 = .06$), and, as shown in Fig. 1, this interaction stemmed from the white males' higher comparison level relative to black males, and the black females' higher comparison level relative to white females. Subsequent t tests showed that white males ($\bar{X} = 2.57$) chose a higher comparison level than did black males ($\bar{X} = 2.23, t = 2.16, p < .05$), and black females ($\bar{X} = 2.35$) chose a higher comparison level than did white females ($\bar{X} = 2.13, t = 2.38, p < .05$). The interaction of S race and E race was also significant ($F = 5.59, p < .02, \omega^2 = .04$). This interaction evidently resulted because white Ss chose a higher comparison level than did black Ss in the presence of a white E, but black Ss chose a higher comparison level than did white Ss in the presence of a black E. Subsequent t tests showed that white Ss ($\bar{X} = 2.40$) chose a significantly higher comparison level than did black Ss ($\bar{X} = 2.13$) in the presence of a white E ($t = 2.06, p < .05$), although black Ss ($\bar{X} = 2.45$) did not choose a significantly higher comparison level than did white Ss ($\bar{X} = 2.30$) in the presence of a black E ($t = 1.15, p < .26$). Both the interaction of S sex and E race ($F = .02, p < .88, \omega^2 = .00$) and the triple interaction of S sex, S race, and E race ($F = 2.64, p < .11, \omega^2 = .01$) failed to reach significance.

DISCUSSION

The present results are best

understood within the context of a previous risk-taking experiment. Lefcourt (1965) examined the risk-taking behavior (in a dice betting game) of black and white Ss in the presence of a white E. Lefcourt's results showed that black Ss were very cautious and took fewer risks than did white Ss. It should be noted, however, that the present study differs from Lefcourt's in that (1) college students rather than male prisoners were Ss, and (2) the choice of a comparison level against which to compete in the classroom situation was the risk-taking behavior rather than a dice betting game. Assuming that the dynamics of the present experiment may be similar to those in Lefcourt's study, however, the results of the present study expand upon Lefcourt's findings.

As shown in Fig. 1, results similar to Lefcourt's were found. That is, for the male Ss in the presence of a white E, black Ss were lower in risk-taking (chose a lower comparison level) than white Ss. Lefcourt (1965) explains this result by arguing that: "... through segregation and discrimination practices, Negroes have developed low expectations that reinforcement available and valued in our culture can be gained through socially prescribed means. That, in the schoolrooms, market place, or job, work or effort will rarely lead to valued goals... [p. 769]." The present results indicate, however, that this explanation is deficient for two reasons. First, there were no differences in risk-taking behavior of the blacks (both male and female) and whites (both male and female) in the present study. Therefore, blacks may

not as a whole engage in a lower risk-taking behavior than whites, as Lefcourt suggests. Furthermore, the present results show an interaction of S race and sex in which for males the whites are higher in risk-taking behavior (higher comparison level) than their black counterparts, while for females the blacks are higher in risk-taking behavior than their white counterparts. This interaction of sex and race indicates that for risk-taking behavior, it is not sufficient to speak of either blacks or whites without also examining sex. A possible explanation for this interaction is in terms of the sex roles for blacks and whites. By choosing a lower level of comparison in the present study, white females may have been fulfilling the more typical role of the passive female while their white counterparts were fulfilling their expected roles of the aggressive, high risk-taking, achieving male. These roles seem to be reversed in the case of the black Ss. According to one theory (Rainwater & Yancey, 1967): "Negro men have no stable place in the economic system; as a result, they cannot be strong husbands and fathers... often the women must assume the task of bringing in income also... [p. 6]." Furthermore, Moynihan (1965) has reported that "In 1960, 39 percent of all white persons 25 years of age or older who had completed four or more years of college were women. Fifty-three percent of the nonwhites who had attained this level were women [p. 77]." Also, it was reported that "there are proportionately four times as many Negro females in significant white collar jobs than Negro males [p. 78]." Therefore, by choosing a high comparison level in the present study, the black females may be fulfilling their risk-taking achieving role.

A second deficiency in Lefcourt's explanation of his results arises from a consideration of the interaction of S race and E race in the present study. In the present study, white Ss exhibited greater risk taking (chose a higher comparison level) than did black Ss in the presence of a white E (similar to Lefcourt's finding), while black Ss exhibited greater risk taking than did white Ss in the presence of a black E. Therefore, these results suggest that both black and white Ss exhibit greater risk-taking behavior in the presence of an E of their own race. These results imply, therefore, that it is not sufficient to examine risk-taking behavior of black or white Ss without also considering the race of the E. A possible explanation for this finding is that having an E of one's own race in the "classroom/experimental" situation is the usual and expected set for the student, and, therefore, may be

conducive to an atmosphere in which the S is willing to take greater risks (i.e., choose a higher comparison level). Conversely, the presence of an E different from one's own race may be an unusual and unexpected occurrence for the student, and, with this element of situational uncertainty, the S may be less willing to risk.

The results of the present study have been analyzed in the context of risk-taking. However, it is possible to examine the results solely in terms of choice of comparison level. Snyder (1972a) has reported that the desire for a higher comparison level in the college test-taking situation correlates positively with grades in introductory psychology ($r = .23, p < .01$) and with performance on a classroom-type complex verbal learning task ($r = .21, p < .01$). Furthermore, it has also been shown that exceeding a standard of performance, which consisted of feedback regarding the performance of previous Ss on the same task, resulted in facilitation of learning on the same task reported in the present study (Snyder, 1972b). More specifically, results showed that the lower the standard of comparison, the better the performance. Put another way, the desire for a high comparison level combined with feedback which indicated that the S was exceeding the standard set by previous Ss results in optimal performance. The principle of exceeding a standard of performance has been shown to be a critical ingredient in facilitating classroom-type learning in studies performed in both our laboratory (Snyder, 1972b; Snyder & Katahn,

1970, 1972) and other laboratories (Erickson, 1970). Within this context, the present results may indicate that when the race of the S is different from the race of the E (for example, the race of a teacher is different from the race of the pupil), there may be an anomalous situation in which the desired comparison is depressed, the learner is not interested in participating in what might be termed the "comparison level process," and feedback becomes meaningless. To amplify this point a bit further, it may be that the desire for a high standard of comparison reflects the readiness to enter into a comparison process during learning, i.e., task-oriented motivation. When the learner then exceeds the standard communicated by feedback, a reinforcing state of affairs exists which maintains or perhaps increases this motivation. Without the desire to enter into the comparison level process, there will be no motivation to exceed any standard, no matter how low, and the presence of feedback in such situations has no effect on task motivation.

Since this reasoning, in the light of the results of the present study, has implications for learning situations in which the race of teachers and students is mixed, future research should attend to both choice of comparison level and actual performance in mixed racial situations. Crucial to the hypothesis would be the inclusion of an added group of Ss: those who decide to choose "no comparison feedback desired," as well as high, medium, and low feedback. This condition would permit us to

discover whether mixing the races of Es and Ss tends to discourage the S from entering into the postulated comparison level process.

REFERENCES

- ERICKSEN, S. C. Earning and learning by the hour. In W. M. Morris (Ed.), *Effective college teaching*. Washington, D.C.: American Association for Higher Education, 1970. Pp. 1-37.
- KOGAN, N., & WALLACH, M. A. Risk-taking as a function of the situation, the person, and the group. In G. Mandler, P. Mussen, N. Kogan, and M. Wallach (Eds.), *New directions in psychology III*. New York: Holt, Rinehart & Winston, 1967. Pp. 111-278.
- LEFCOURT, H. M. Risk-taking in negro and white adults. *Journal of Personality & Social Psychology*, 1965, 2, 765-770.
- MOYNIHAN, D. *The negro family: The case for national action*. Washington, D.C.: Office of Policy Planning and Research, U.S. Department of Labor, 1965.
- RAINWATER, L., & YANCEY, W. L. *The Moynihan Report and the politics of controversy*. Cambridge, Mass: M.I.T. Press, 1967.
- SNYDER, C. R. Development of a comparison level scale for the college test-taking situation. *Journal of Personality Assessment*, 1972a, in press.
- SNYDER, C. R. The effects of comparison level feedback upon classroom-related learning. *Journal of Educational Psychology*, 1972b, in press.
- SNYDER, C. R., & KATAHN, M. The relationship of state anxiety, feedback, and ongoing self-reported affect to performance in complex verbal learning. *American Journal of Psychology*, 1970, 82, 237-247.
- SNYDER, C. R., & KATAHN, M. Comparison level feedback and classroom-related complex verbal learning: Implications for American education. Paper presented at the meeting of the Western Psychological Association, April 28, 1972.