TASK EXPERIENCE AND ATTITUDES TOWARD DELAYING REWARD¹

by

Paul S. Goodman

Graduate School of Industrial Administration

Carnegie-Mellon University

and

Eustace D. Theodore

Department of Sociology

Yale University

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ABSTRACT

This study examines the relationship between task experience and attitudes. Specifically tested is the effect of performing a task in which waiting for rewards produces the greatest pay off on attitudes toward delaying reward. High school students were hired to work on a door to door selling task; the task was designed so that delaying a sale produced a larger sales commission. Those subjects who recognized and selected a delayed strategy in the task shifted toward a preference for delaying reward. The use of a natural controlled experimental design and the social implications of the study are discussed.

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The formation and modification of attitudes and value orientations has been of considerable interest to sociologists and psychologists. Drawing most heavily upon the traditions in the sociology of knowledge, Breer and Locke (1965) have speculated that task or work experience is a possible source of attitudes and value orientations. Breer and Locke argue that tasks vary in terms of their intrinsic instrumental characteristics (i.e., elements which will produce success in the task). When presented with a task, an individual identifies the instrumental characteristics, behaves in accordance with these characteristics, and develops a positive orientation toward these instrumental behaviors as a result of success in the task. For example, when presented with a task where working alone is instrumental to task success, an individual should identify and adopt an individual approach in the performance of this task and subsequently develop preferences for working alone. When placed in other task situations, the individual should generalize these preferences for working alone to similar tasks and to more abstract attitudinal levels (e.g., working alone is desirable not only in specific tasks, but it is preferable in general). The Breer and Locke framework, then, focuses on task or work experience as a determinant of attitude formation and change.

Some empirical support for the differential effect of task experience on attitude change and the subprocesses of lateral and vertical generalization is presented by Breer and Locke (1965), Theodore (1965) and Goodman

and Baloff (1968). However, little evidence is available on the generalizability of the theory. To test the generalizability of the theory in this study the following changes were introduced:

First, a new attitude dimension - preference for delaying reward - is employed. The most conclusive experiments used to validate the Breer and Locke theory have been designed around interpersonal relations (e.g., working alone vs. working together). By introducing a new dimension, one which does not focus on interpersonal relations, one can better assess the theory's generalizability.

A second means of extending the generalizability of the theory is by testing it in a natural rather than a laboratory setting. All but one of the experiments relevant to this theory have been conducted in a laboratory setting with college students. The exception (Theodore, 1967), a field experiment, provided inconclusive results. Therefore, it is important to determine that the hypothesized relationships do extend to a natural setting and that previous findings are not a function of the laboratory setting.

The development of task theory parallels early research in the instrumental conditioning literature presented by Peak (1960), DiVesta and Merwin (1960) and Carlson (1956). Mischel's work has frequently focused on attitudes toward delaying reward (1961, 1967) but not from the perspective of the effect of task experience on these attitudes.

HYPOTHESES

The main hypothesis can be stated sequentially as follows: (1) if an individual participates in a task where delaying rewards is most instrumental to task success, he will select the delayed strategy; (2) if an individual selects the delayed strategy, he will recognize that delaying is instrumental to task success; and (3) if an individual recognizes that delaying is instrumental to task success, he will develop positive orientations toward delaying reward in other settings.

Some corollary hypotheses include: (1) if an individual does not identify the delayed strategy as the instrumental task behavior, he will not develop positive attitudes toward delaying rewards; (2) the more frequently an individual is rewarded for selecting delayed vs. immediate choices the greater his positive orientation toward delaying reward; and (3) preferences for delaying reward will more likely appear in attitude regions similar to the task experience. To test this third corollary hypothesis three attitude regions (work, family, and life in general) were included in the questionnaire used to measure the dependent variable. Most change toward delaying reward was expected to occur in the work scale; the family items were included as a measure of lateral generalization, change from one task setting (work) to another (family); the life in general items were included as a measure of vertical generalization, change from the specific task setting to a more abstract attitude dimension.

METHOD

Design

A before and after design with one experimental and one control group was used in this study. The experimental group completed the before measure of preferences for delaying reward, performed a selling task where delaying reward was instrumental to task success, and then completed the after measure. The control group completed the before and after measure but performed no designed task; regular school tasks continued between the before and after measures.

The primary independent variable of this study is the instrumental nature of the task - delaying to maximize reward. The dependent variable is the change scores (after scores minus before scores) for the experimental and control groups. Recognition of the instrumental task characteristics and the number of times the instrumental characteristic of delaying was selected serve as moderating variables.

Sample

Seventy-three male high school students participated in this study. They were divided into two groups, an experimental group ($n = 32$), and a control group ($n = 41$). It was not possible to randomly assign students between experimental and control groups; however, it was possible to match the groups on the relevant criterion variable (i.e., attitudes toward delaying reward). There was no significant difference in initial attitude on this dimension between the two groups. The students lived in the Hyde Park and South Shore areas of Chicago, and had a mean age of 15.5 years.

Instrument

A Likert-type questionnaire measuring preferences for delaying reward was constructed. Each item offers a contrast between the desirability of immediate vs. delayed reward and is endorsed on a nine point scale. A total of twenty-nine items were written for three areas - work, family, and life in general. Using an item total correlation procedure, seven items were selected for the work scale, six for the general scale, and eight for the family scale. The goal was to maximize homogeneity within each scale area. A sample item from the work scale is "I feel you can get a lot of satisfaction out of your work if you are willing to give up some immediate opportunity for a greater future gain." The measure of attitudes was separated from the task by having a person (experimenter₂) unrelated to the task experience administer the questionnaire as a "pretest of items for a study of high school students' attitudes." The same instrument was used for before and after measurement, but the items appeared in reverse order.

The measurement of recognition of the delayed strategy was obtained by a rating of exit interview protocols. Experimenter₁, the students' employer in the selling task, asked each subject a series of questions about the selling experience (e.g., "What did you have to do in order to get your sales?"). Responses to these questions were rated by experimenter₁, experimenter₂, and the principal investigators using the following procedure: if all four raters unanimously agreed that the subject stated in the post job interview that delaying represented "instrumental" task behavior, he was classified as "recognized"; all other subjects were classified as "not recognized." A statement from a recognized subject is: "Whenever I waited

gave people time, and came back, I sold more." A statement from the unrecognized group is: "My selling drive made all the difference - I could talk them into it."

Task

The task for the subject was selling professional journals to graduate students in their homes. All "buyers" were trained confederates presenting a choice schedule designed so that postponing an immediate sale for a delayed sale was most instrumental to successful task performance. These confederates had no knowledge of the study's hypotheses.

The structure of the task in terms of the instrumental behavior for task success (i.e., number of sales and associated incentive) was determined by the choice schedule. Each subject was presented nine standard choices which posed different required delays for set increments in reward.

Each of the nine choices used a different rationale. In the following example the subject is presented with the choice of selling a one-year journal subscription now or having the possibility of selling six-year journals one day later.

A fellow I work with and I always like to buy our journal subscriptions together - that way we can get to buy and read more journals on our limited budgets. I'll tell you what, if you want me to sign up for my subscriptions now, I can get one year of the journal of X. But I will be talking with my friend in the next couple of hours and if you can come back tomorrow, I think we might be interested in three years of the journal of X and three years of the journal of Y... So, would you like me to buy one year of X now or talk with you more about three years of X and three years of Y tomorrow?

Students were hired to work for a three day period for approximately ten hours. Four choices occurred on the first day and five on the second day. Sales contact was made on the third day if one day delay decisions were made on the second day. Payment was based on a flat rate of \$12.00 for approximately nine hours' work plus an incentive commission of \$.50 for each journal year after the first sold to a single customer.

Because of the very complex logistic demands in running this experiment (e.g., it was important that subjects did not meet and there were a limited number of buyers seeing many subjects), a separate counter control (i.e., a task where immediate gratification was most instrumental) was omitted.

RESULTS

Two necessary conditions for task experience to affect attitude formation are the recognition of the instrumental task characteristic and the performance of the task in accordance with that characteristic. Analysis of subjects in the experimental group showed that only 53 percent (17 out of 32) identified postponing an immediate for a future sale as instrumental. This percentage is significantly lower than percentages reported in other comparable experiments (Breer and Locke, 1965). In the laboratory studies of Breer and Locke more than 90 percent of the subjects identified the instrumental task dimension. This important difference between the Breer and Locke experiments and this study may be explained by the fact that their work involved simple tasks in a laboratory setting

where limited stimuli were available to the subjects. This experiment provides the subjects with a more complex task and occurs in a natural setting with much wider range of stimuli. Both of these changes greatly increase the possibility of varying task definitions.

Insert Table 1 about here

Table 1 presents differences in immediate versus delayed choice behavior during the experiment for the recognized and not recognized groups. Recognized subjects select fewer immediate choices than not recognized subjects ($p < .001$, $z = 6.3$, Mann-Whitney Test). In addition, recognized subjects accept longer delay choices while not recognized subjects reject longer delay choices ($p < .001$, $z = 6.3$, Mann-Whitney Test). These two comparisons indicate that the two groups differ both in the number of delay choices selected and in the magnitude of the delay period experienced. In addition to providing an independent check on the validity of the rating of recognition, these findings suggest that recognized and not recognized subjects define and experience the selling task differently.

Insert Table 2 about here

Table 2 presents attitude change scores for both recognized and not recognized groups and for the control group. Change scores are provided for the three regions: work, general life, and family. The change score is the mean difference between the before and after scores with a negative score representing a shift toward a preference for delaying reward. A comparison between the recognized group and control group indicates the

effect of the task experience on attitudes toward delaying reward. As predicted, subjects in the recognized group consistently shifted toward preference for delaying reward as indicated by negative values in the change score for all regions. The difference in the change score for the work region reaches statistical significance at the .01 level (Mann-Whitney Test, $z = 2.64$). Differences between the recognized and control groups for the other two regions though in the predicted direction are not statistically significant. What seems to be a substantial experimental change in the family region is mitigated by a change in before and after scores in the control group.

An alternative explanation is that recognition of instrumental task characteristics, selecting immediate versus delayed choices, the degree of attitude change and the amount of rewards (sales) received are a function of initial attitudes rather than task experience. That is, it could be argued that subjects positively oriented toward delaying rewards would more likely recognize instrumental task characteristics, select delayed choices, and receive greater rewards, independent of their task experience.

Insert Table 3 about here

Table 3 indicates that there is no significant difference between recognized groups and not recognized groups on initial attitudes toward delaying reward. The low, nonsignificant correlations for the recognized group seem to discount the alternative explanation that initial attitudes explain choice behavior and subsequent rewards received during the experiment. The .51 rank order correlation between initial attitude and sales might indicate that for subjects who do not identify instrumental task

characteristics, initial attitudes are a better predictor. However, since the correlation between initial attitude and choice behavior was not stronger, and since a significant, positive relationship between initial attitude and choice behavior and rewards does not appear in the other attitude regions for either recognized or unrecognized groups, this effect of initial attitudes cannot be supported. The design of the study, sample size, and the reliability of the instruments limits the effective testing of the corollary hypotheses, however some trends can be noted: 1) Subjects who do not recognize the instrumental nature of the task experience in general decrease their preference for delay in reward as contrasted with the recognized group; 2) Secondary analysis indicates that the number of actual reinforced delayed choices is related to an increase in preference for delaying reward. The third corollary hypothesis, that greater changes toward delaying reward would occur in attitude regions most similar to the task cannot be assessed because of the lack of reliability of the scales measuring the family and general regions.

DISCUSSION

This study examined the hypothesis that when an individual participated in a task where delaying reward was most instrumental to task success, he would develop positive orientations toward delaying reward as a result of selecting the delayed strategy and recognizing the instrumental character of delaying. The results give some support to the effect of task experience on attitudes toward delaying rewards. Subjects in the recognized

group (i.e., those that identified delaying as instrumental to task success) shifted toward delaying reward.

These results might be attributed to a knowledge of the study's purpose rather than the task. However, the natural character of the study's design and the information gathered from the exit interviews indicate that the subjects saw no association between the requirements of the task and the measures administered. One subject thought we might be giving him a test in sales ability and did not complete the experimental procedure; he was excluded from the analysis.

The results also might be an artifact of the measurement process if the instruments employed had an effect on the decision making process or the level of recognition among the subjects. Subjects, however, indicated no association between the measurement process and the selling task and an analysis of the initial attitude scores as related to delay decisions and instrumental recognition shows no consistent association.

Although the results can best be explained by the effects of the task experience, the degree of change might have been stronger and statistically significant in all attitude regions. Two factors seem to be important in explaining this problem. First, in a design which attempts to simulate actual job experience, there is less control over extraneous factors (e.g., weather, time of day, etc.) which may tend to depress, although perhaps not in a systematic way, the results. In designing a natural controlled experiment, it is important for the researcher to select tasks which minimize extraneous factors. It is also important that supporting evidence be available from a more controlled design before moving to a natural setting. Such evidence was available for this study (cf., Breer and Locke, 1965).

The second factor, and probably most important, was the nature of the instrument. The scale with the greatest reliability (work) exhibited the most change. The lower reliability in the family and general scales may have cancelled out some effects of the task experience on the subjects' attitude.

The implications of the results of this study are as follows: first, the fact that differential effects of task experience on attitudes appears in a dimension not previously tested - delayed reward - and in natural as well as laboratory settings extends the generalizability of the task experience theory. Additional confirmation of this theory is particularly important since it is relatively new and provides a different approach to understanding the development of attitudes and value orientations.

Second, the study demonstrates the utility of a natural controlled experimental design. The Breer and Locke theory had been successfully tested in a laboratory but unsuccessfully in a field experiment. The natural controlled experimental design permits testing propositions in a naturalistic setting but under controlled conditions (cf., Goodman, 1970)

Third, this research and the related theory suggest a different approach for modifying attitudes and values which may be helpful to individuals involved in social change in work organizations, communities, and larger social groups. Much of the attitudinal research and its subsequent application in training focuses primarily on some form of communication and persuasion. Often this type of training is not very successful because the communicator is not seen as credible or the content of the

information is not perceived as useful. Designing work tasks around the desired attitudinal dimensions (e.g., trust, cooperation, delaying reward) seems to offer an alternative approach to modifying attitudes which could be employed in work organizations or other social organizations (e.g., communities).

FOOTNOTES

1. Partial support for this research was received from the Graduate School of Business, University of Chicago and through an NSF-COSIP Grant awarded through the Department of Sociology, Hollins College.
2. Experimental subjects worked about 10-12 hours over a three day period and most received \$24.00; control subjects worked about 1 hour over a three day period and received \$2.50.

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TABLE 1

A COMPARISON BETWEEN
RECOGNIZED VERSUS NOT RECOGNIZED GROUPS
IN SELECTING IMMEDIATE VERSUS DELAYED CHOICES

Type of Choice <u> </u>	Recognized <u>(n = 17)</u>	Not Recognized <u>(n = 15)</u>
Mean number of immediate choices selected	.24	1.06
Mean number of hours of delay rejected	1.65	13.86

TABLE 2

CHANGES IN ATTITUDE TOWARD DELAYING REWARD
AS A FUNCTION OF RECOGNITION OF INSTRUMENTAL
TASK CHARACTERISTIC AND TASK EXPERIENCE

Attitude Regions	Research Groups		
	Experimental - Recognized and Task Experience (n = 17)	Experimental - Not Recognized and Task Experience (n = 15)	Control - No Task Experience
Work	$\bar{x} = - 3.59$	$\bar{x} = + 2.00$	$\bar{x} = + .39$
General	$\bar{x} = - 1.11$	$\bar{x} = - .60$	$\bar{x} = + .12$
Family	$\bar{x} = - 3.10$	$\bar{x} = + .20$	$\bar{x} = - 1.90$

TABLE 3

RELATIONSHIP BETWEEN INITIAL ATTITUDES
TOWARD DELAYING REWARD AND RECOGNITION OF INSTRUMENTAL TASK
CHARACTERISTICS CHOICE BEHAVIOR AND
AMOUNT OF REWARDS WORK SCALE GROUP

	<u>Recognized</u>	<u>Not Recognized</u>
1. Mean initial attitude toward delaying reward	31.1*	33.9*
2. Rank order correlations - initial attitude and choice of delayed sales	.11**	.29**
3. Rank order correlation - initial attitude and sales earned	- .01**	.51***

* Difference between groups not significant (Mann-Whitney)

** r_s not significant

*** r_s significant $p < .05$