PRIOR PERFORMANCE AS A SOURCE OF ABILITY EXPECTANCIES IN SOCIAL COMPARISON WITH A SELF-REWARDING MODEL

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ABSTRACT

The concern of this research is the social influence of observation of other's performance and the modelled self-reward standards on a child's own self-reward standards. It has been noted in previous research that children will set their performance standards by imitating other's self-reward standards of performance. Children that are similar in ability are seen as appropriate achievement models while children that are either superior or inferior in ability cause the observing child to scale his/her standards down or up respectively. The proposed experiment examined the effect of changing performance on children's self-reward standards by using both prior performance and current performance for comparison. The model either performed at a consistent level or an inconsistent level to his/her previous performance.

A significant interaction was found between sex and Phase II. Although this was not a predicted result, it has been suggested that this could be the effect of self-confidence levels (Maccoby & Jacklin, 1975). It was also concluded that to better understand these results more research needs to be conducted in the field of social comparison and self-reward.

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PRIOR PERFORMANCE AS A SOURCE OF ABILITY EXPECTANCIES, IN SOCIAL COMPARISON WITH A SELF-REWARDING MODEL

Social comparison and self-reward seems to have an important place in our highly achievement-oriented society. According to Masters (1971), "Comparison with others is often the sole source of judgments about the adequacy or the acceptability of behavior." The research on this topic has fallen into two different camps. Mischel & Liebert (1967) head the first with their belief that children directly imitate modelled standards of self-reward without any consideration of the ability of the model. That is, when the model displays a stringent rule of self-reward, so does the child, and similarly when the model displays a lenient rule, the child also self-rewards at a more lenient level. However, often during this type of research, a leniency effect has been observed in both stringent and lenient conditions. Davidson and Smith (1982) propose a possible explanation by saying that

> "This leniency may involve, not rule violation, but use of a different rule: that people of different abilities (i.e., children and adults) may employ different standards of self-reward."

This proposal is the basis of the other self-reward camp in which Bandura's work (1977) is seen as the primary

source. That is to say, children do indeed attempt to fit self-reward standards to ability, scaling down their standards when in comparison to an adult or superior and scaling up their standards in comparison to an inferior. Research done by Thibaut and Kelley (1959) and Weiner and Kukla (1970) also seems to imply an ability-level evaluation in situations of self-reward behavior.

This past research notes that for social comparison of abilities to have a clear impact on self-reward behavior, an achievement task is necessary. The task must be a) a task where abilities would be relevant to performance, b) the task must allow opportunities for abilities comparison and c) the comparative information must allow assurance of judgment (Davidson & Smith, 1980). For these reasons, the pursuit rotor apparatus was chosen. There were also several other reasons for choosing the pursuit rotor. First, performance on the machine is obviously skill-related; but without proper feedback, it is hard to tell how well one is doing, therefore, false feedback is feasible. Second, this is an apparatus on which few children would be likely to have had any previous experience. Therefore, few children would have expectations as to how well they should do.

In such achievement situations (where ability is viewed as significant to performance), children wish to establish an inner performance standard which mirrors

their own ability level. Children will set their performance standards by imitating other's self-reward standards of performance. Those children that are similiar in ability are seen as appropriate achievement models while children that are either superior or inferior in ability cause the observing child to scale his/her standards down or up respectively, as discussed earlier. According to Schartz & Smith (1976), direct social comparison of performance on the tasks shown for adults determined these standards.

Previous research (Davidson & Smith, 1982) has examined the effects of social comparison when ability, as indicated by performance, has been stable. Children (and adults) face many situations in which performance relative to another changes. This experiment is an extension of the Davidson & Smith (1982) research by examining the effect of changing performance on a child's self-reward behavior by using both prior performance and current performance as sources for comparison and also by using models of the same age as the subject. Half of the models either performed at a consistant level, consistantly superior or consistantly equal while the other half performed at an inconsistant level, superior to equal or equal to superior.

The hypotheses are 1) that a child viewing a consistantly superior model will scale down his/her standards

and self-reward at a level below the one modelled, (2) that a child viewing a consistantly equal model has no need to change his/her standards and therefore, will self-reward at the same level as the model and, 3) in the case where the model's performance is inconsistant, the observer will self-reward at the level modelled or slightly below. (See Table 1)

TABLE 1

HYPOTHESES

Model's Prior Performance

Model's Current Performance	Low (below modelled level)	Moderate to low (at or slightly below modelled level)
Superior		
Equal	Moderate to low (at or slightly below modelled level).	moderate (at level modelled).

METHOD

Subjects

The subjects were children in the fifth grade who attended Navasota Junior High. The subjects were given sealed parental permission slips explaining the nature of the experiment to the parent. All subjects who returned

the parental permission slips were used in the study. The return percentage was 85%. Sixty-nine subjects were run, but 7 subjects scores were thrown out due to equipment failure. The subjects were counterbalanced for sex and assignment to experimental condition was in random order. A male and female peer in the fifth grade at Lamar Elementary School in Bryan, Texas, served as models. Two female experimenters conducted the study for all 69 children while a male experimenter (who was not seen by the subjects) worked the score computer.

Apparatus and Task

The task for both models and subjects employed a pursuit rotor apparatus, which was seemingly attached to a "computer" in the back room of the trailer: The computer, a handmade box from which scores are manually determined was attached to a score box placed in full view of the subject. The score box presented a digital score on a lighted display panel. The subjects were asked to keep the tip of the "wand" on the revolving lighted dot of the pursuit rotor as much as possible during a 10 second period at 40 r.p.m. After each trial was completed, the score was shown to the subject. The model and self-reward performances were recorded on videotapes which were then presented on a 12 inch Sears portable black-and-white

television via a Panasonic videotape recorder. Two small glass bowls, one filled with tokens, were also placed in front of the subject during the self-reward phase.

Procedure

Each child was taken to a two-room trailer located on the school's premises. The wall dividing the 2 rooms contained a one-way mirror. Directly in front of the mirror was a table and 2 chairs. The pursuit rotor apparatus, the T.V. and the 2 glass bowls were placed on the table for easy viewing by the experimenter. When the child entered the trailer, he was asked to sit in the chair closest to the pursuit rotor apparatus. The experimenter then explained that she was interested in hand-eye coordination, which involved the ability to touch a moving object. The child was then told that his/her hand-eye coordination would be measured by the pursuit rotor. He/She was then informed that the machine was connected to a computer in the other room which would tabulate the scores, ranging from 0-60, and display them on the score box.

The child was then given the chance to take a few practice trials on the pursuit rotor. Then, he/she was told that he/she would watch another child, a same-sexed model, perform the task on the videotape and then the model would receive a score; afterwards it would be his/her turn

to try, for which he/she would also receive a score. It was then explained to the child that he/she and the model would alternate for 15 trials (The scores for models and subjects in Phase I are given in Table 2.) The scores for all subjects in Phase I are the same.

TABLE 2

Phase I Scores

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Superior	22	23	25	24	30	35	34	35	36	38	40	45	43	47	50
Equal	18	20	19	23	22	24	25	30	34	35	36	35	40	39	43
Subject	18	19	20	22	23	25	24	30	35	34	35	36	39	40	43

After alternating trials with the model, the experimenter questioned the subject as to how he/she felt he/she had done and now well he/she felt the model had done. Then the second phase begun. The child was told he/she would repeat the same procedure; again, the model would perform the task and receive a score, and then he/she would go and receive his/her score, alternating for another 15 trials. (The scores for models and subjects in Phase II are given in Table 3).

TABLE 3

Phase II Scores

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
$Superior_1$ (Sup/Sup)	27	30	31	29	35	40	37	40	38	37	41	45	44	49	52
$Superior_2$ (Equ/Sup)	22	23	27	30	31	29	35	40	37	40	38	45	47	50	53
$Equal_1$ (Equ/Equ)	26	27	28	31	27	30	31	29	35	40	37	40	38	42	44
$Equal_2$ (Sup/Equ)	22	23	25	27	30	31	29	35	40	37	40	38	37	42	44
Subject	23	22	25	28	30	32	28	35	34	33	36	40	38	41	45

*underlined score denotes a self-reward phase score

When the second set of 15 trials was completed, the experimenter then informed the child that he/she would now get a chance to see the model self-reward but only of 9 his/her 15 scores, in order to save time. The scores were presented in ascending magnitude, from the smallest to the largest. (Model's self-reward scores are underlined in Table 3). All model's self-rewarded for scores 35 and above. After watching the model self-reward, the child was then instructed that he/she would now reward himself/herself for scores he/she thought were good for him/her as the model had done. The experimenter explained that the tokens taken for good scores could later be exchanged for a prize; a group of prizes could be seen by

the child. The experimenter then excused herself, saying she had work to do in the other room, leaving the child to make unpressured decisions. All of the child's 15 scores were presented, one at a time to the child, again in ascending magnitude. The experimenter recorded at which score a token was taken, how many tokens were taken and the lowest score for which a token was taken, the 3 dependent measures. The reason for using these 3 measures was to allow for the child's compensatory behaviors which include 1) a child's rewarding himself/herself for a low score and then to compensate later refusing himself/herself a token for a higher score, 2) a child's finishing self-rewarding for all 15 scores and sometimes putting token's back apparently because he/she felt he/she took too many and 3) a child's sometimes taking more tokens for better scores.

The experimenter then returned to the other room and again asked the child how well he/she felt he/she had done, how well the model had done and in addition if he/she felt the model's performance had changed any, and if so, why. The child was then informed he/she had enough tokens to get a prize and to pick one of his/her choice. He/She was then asked to keep the game a "secret" so that the other children would also enjoy it. The experimenter then escorted the child back to his classroom.

RESULTS AND DISCUSSION

A 2 x 2 analysis of variance was originally used to determine the significance of the 3 dependent measures, lowest score rewarded, number of tokens taken and number of trials rewarded. Unfortunately, all F values were very close to zero, with only the lowest score rewarded value being anywhere near the significant level. With these results, we looked to Shine (1982) who suggests that

> "Analysis of variance F-ratios which are significant in the left-tail of the appropriate central F-distribution should be interpreted as indicating some inadequacy in the analysis of variance model being used to represent the properties of the data."

It was also stated that the problem could not be determined from the statistics themselves and would depend upon the individual study (Shine, 1983). There could be many hypotheses for this problem. One is that the data lacked homogeneity of variance. In the case of this study, error terms were quite large suggesting difficulty with the assumption of homogeneity of variance. Therefore, we conducted two tests to check homogeneity of variance, the F max and the Cochran's test. Neither of these were signficant, suggesting that we had met the requirements for homogeneity of variance. Therefore, the problem did not lie here.

The second hypothesis proposed was a sex difference. Although we did not predict a sex difference, we did counter balance for sex; this allowed us to include this as a factor in the analysis. Using a 2 x 2 x 2 analysis for sex, Phase I and Phase II on lowest score rewarded, we found a significant P value for the sex-Phase II interaction ($P < .03$). (See Table 4) The mean scores for the sex-Phase II interaction and a graph of those values are seen in Table 5.

TABLE 4

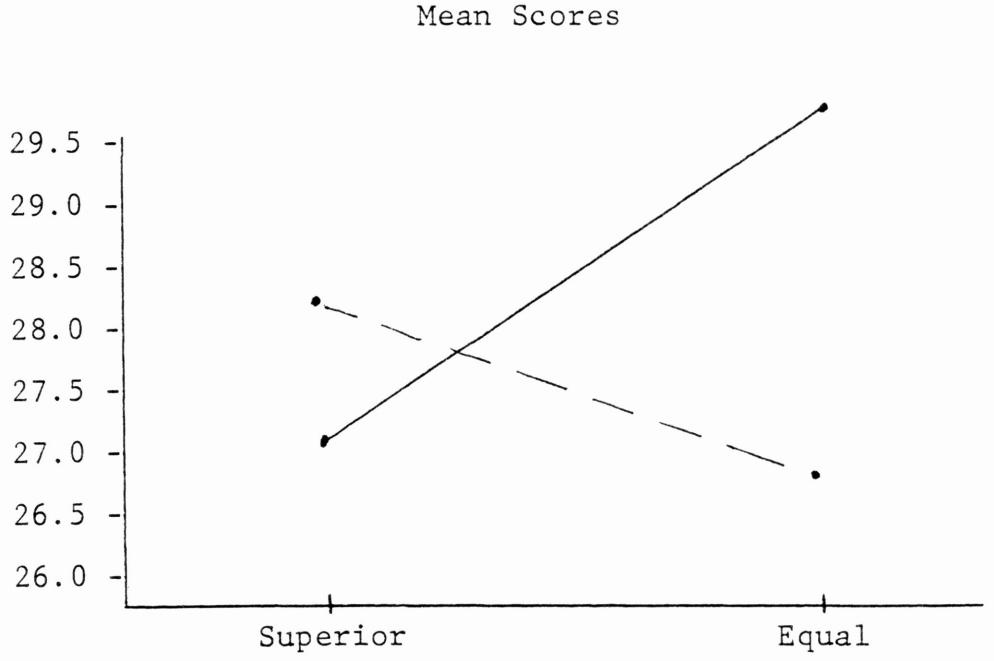
Source Table

Source	df	MS	F Value	P Value
Sex	1	10.98	.75	NS
Phase I	1	8.37	.57	NS
Sex · Phase I	1	8.33	.57	NS
Phase II	1	6.97	.48	NS
Sex · Phase II	1	75.69	5.18	$P < .03$
Phase I · Phase II	1	21.25	1.45	NS
Sex · Phase I · Phase II	1	17.85	1.22	NS
Error	54	14.61		

TABLE 5

Phase II

		Superior	Equal
Sex	Male	$\bar{X}$ = 27.13	$\bar{X}$ = 29.88
	Female	$\bar{X}$ = 28.36	$\bar{X}$ = 26.81



Sex · Phase II Interaction

In order to better interpret these results, we decided to use the Newman-Keuls's analysis on the sex-Phase II interaction. Usually, there will be a significant difference in means suggesting where the exact relationship of the interaction lies. Unfortunately, the analysis revealed no significant interaction. Although this result can occur, it is quite unusual.

The results of the sex-Phase II interaction indicated that the boys exemplified the expected behavior; that is, they lowered their standards when their model was a superior peer and used a higher standard with an equal peer. On the otherhand, girls performed in the opposite direction. They had higher standards when the model was a superior peer, and they lowered their standards for an equal peer. One explanation for the behavior of the male subjects is that boys generally have more self-confidence on task performance and expect to do well when exposed to a peer. Therefore, when the male subjects had an equal model, they expected to do well and had a higher self-reward standard. However, Maccoby and Jacklin (1976) note,

> "that women do not define themselves in terms of success on these kinds of tasks, and are willing to accept a wide range of performance as being consistant with a favorable self-image" (p. 155-156).

That is to say, the female subjects might have felt lower score standards were acceptable since they did not expect to do well and were extremely pleased by equalling a peer.

Another explanation for this sex difference could be the use of female experimenters. Since most grade school teachers are female, it would be interesting to see if this was a common result in a classroom situation. Would males have a higher standard with an equal than the females?

An explanation for the results when the model was superior is easily explained for the male subjects but not for the females. A probable cause for the male subjects behavior is in accordance with the original hypothesis: that subjects would self-reward at a lower standard when using a superior model for comparison. The female subjects' behavior cannot be easily explained and will be left open for conjecture and further investigation.

The last hypothesis about a sex-Phase II interaction is that this significant effect may be anomolous. This could partially be due to the very high variance. The results of this study do not seem to support either of the self-reward and social comparison beliefs. To get a better understanding of children and their self-rewarding standards in comparison with a model more research will need to be done in the field.

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