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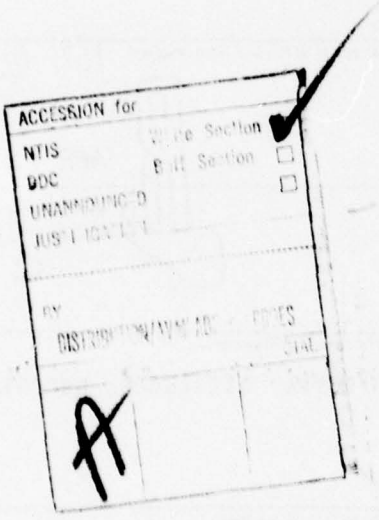

The Influence of Models' Attitudes on Observers' Judgments About Task Characteristics

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The influence of model attitudes on observers' judgments about task characteristics

The importance of social influences on workers' perceptions of seemingly objective organizational and task characteristics has recently been suggested by organizational behavior researchers. In a laboratory setting this study examined the effects of workers' awareness of other workers' (models') general job attitudes on individual judgments of the motivating potential of tasks. Results showed that subjects' task related judgments were significantly influenced by the general attitudes of other workers. Additionally, attitudes of coworker models were significantly more influential among field dependent subjects than among field independent subjects and affected the task judgments of low but not high self esteem subjects. Results are discussed in terms of the importance of information provided by coworker models on workers' attempts to structure organizational experiences, factors which might influence the weight given to socially provided information and the problems associated with using perceptual measures of organizational characteristics.

In analyses of individual reactions to organizational stimuli measurement processes are often perceptual. People are asked to make judgments about stimuli and their responses are then related to criteria of interest. This procedure is frequently justified by arguing that perceptions mediate the linkage between objective environmental characteristics and behaviors or attitudes. They are therefore phenomena more directly causal of the outcomes being examined (see Newman, 1975, for a recent example of this position). The use of perceptions as surrogates for environmental characteristics may, however, create confusion about what is actually being measured. Nunnally (1978) notes that we can scale either people or objects with regard to some attribute. Although people's judgments are often used to measure attributes of objects, in this case it is still the differentiation among objects, not people, which is of primary interest. The veridicality of environmental stimuli and individual judgments about those stimuli therefore becomes an important issue.

Current research on job design provides a case in point. It has often been asserted that jobs vary along the attribute of scope, complexity, challenge or enrichment. Differences on this attribute are associated with predictable affective and behavioral consequences for incumbents. Recently, Hackman and Oldham (1975) have developed an instrument, the Job Diagnostic Survey, which can be used to scale jobs along the attribute of "Motivating Potential" (complexity or challenge; Hackman, Pearce and Wolfe, 1978). This instrument uses the judgments or perceptions of incumbents to "diagnose

the motivational properties of jobs" (italics added) (Hackman and Oldham 1975, p. 159).

Hackman and Oldham have presented evidence to show that Motivating Potential Scores (MPS) of jobs, gathered through incumbent judgments or perceptions, are correlated with various worker responses (Hackman and Oldham, 1976). Although in their theoretical analyses Hackman and Oldham emphasize the mediating influence of individual perceptions on affective and behavioral reactions to tasks, it is clear that the purpose of this section of the JDS is to differentiate among jobs not people. That is, the JDS is designed to scale tasks using peoples' judgments as part of the measurement process (Hackman and Oldham, 1975).

When using this type of measurement procedure the accuracy of worker perceptions and the relative influence of non task factors on their judgments can become problematic. Hackman and his associates have noted that descriptions of the same job by various raters show only moderate levels of agreement. For example, Hackman and Oldham (1976) report that the correlation (across jobs) between MPS scores gathered from superiors and job incumbents was only $r = .56$. When gathered from incumbents and independent observers the correlation was $r = .63$. Similarly, Hackman, Pearce and Wolfe (1978) report that the quantitative description of jobs provided by incumbents and management showed only a moderate level of convergence ($r = .49$). In response to these relatively low levels of agreement, a number of researchers have suggested that factors other than the task itself may account for significant amounts of perceptual variance (Hackman et al. 1978; Salancik and Pfeffer, 1977; Schwab and Cummings, 1976). Hackman et al. (1978) state "a person's perception

of his or her job is no doubt caused by -- as well as causal of -- that individual's other reactions to the work and the organization... Additional research on how perceptions of job characteristics are jointly affected by the objective properties of the job and the personal and social environment of the job is clearly called for" (p. 303).

Although individual perceptions may have a more direct causal influence on affective and behavioral outcomes it is clear that job enrichment is a method for changing tasks not people. If measures of job characteristics are influenced by factors other than the task, their validity may be limited and their diagnostic utility as part of a job redesign program may therefore be significantly curtailed. The purpose of this study was to begin to investigate the effect of unintentional social influences on individuals' descriptions of their tasks.

In responding to scales such as the JDS the individual gathers, weights and integrates information he has obtained from a number of sources into some overall judgment about the task. Although information derived from personal experience with the task is given substantial weight, we are suggesting that other information may also be influential. Moreover, the weights given to task and non task sources will vary predictably as a function of individual and situational factors.

We are hypothesizing that one particular non task source of information, the expressed attitudes of other workers, can have a significant influence on task judgments. A great amount of our supposedly objective assessments of "reality" are influenced as much by socially provided information as by direct experiences with our environment. The attitudes and opinions of others have repeatedly been shown to have a pronounced

effect on individual judgments about stimuli (see, for example, reviews of the social psychological literature by Jones and Gerard, 1967, Moscovici, 1976, and Tujfel, 1969). Weiss (1977, 1978) has shown the importance of social learning processes within organizations with the expressed values and behaviors of co-workers playing an important part in the role defining processes of observing individuals. Similarly in discussing individual perceptions of task characteristics, Salancik and Pfeffer (1976) have argued that these perceptions are "socially constructed realities", influenced by the individual's social environment as well as the objective situation. Workers are often aware of co-workers' attitudes about their tasks. We are suggesting that they use these attitudes along with their own personal experiences to form overall task judgments. The present study was designed to begin to examine this process in a laboratory setting.

Co-workers can communicate attitudes about specific aspects of the task, such as their evaluations of the degree of autonomy or feedback. They can also express their attitudes in more general terms such as the degree to which they like the task or find the task interesting and satisfying. This study examined the influence of other workers' expressions of positive, nonspecific attitudes on individual task related judgments. We chose to evaluate the effect of more general attitudes for two reasons. First, we believed that attitudes are more often communicated by co-workers in general affective terms rather than in terms of specific task dimensions. Second, communication of information about specific task dimensions prior to completing the JDS would create problems of experimental demand characteristics.

Hypothesis 1

Workers who have observed other workers expressing generally positive attitudes about a task will, after working on that task, describe the task as having greater "motivating potential" than will those who have not observed other workers expressing positive attitudes.

In making judgments about tasks, certain individual and situational factors will influence the weights given to different pieces of information. Kaplan (1975) has argued that personality variables may affect judgments by producing differential weighting schemes. We suggest that field dependence and self esteem influence the weight individuals give to socially provided information when they make judgments about tasks.

Witkin and Goodenough (1977) and Karp (1977) separately reviewed the literature on the relationship between field dependence and interpersonal behavior. Both reviews concluded that field dependent persons are generally more responsive to contextual factors in their environment than are field independent persons and are more likely to seek and use information provided by relevant others in making judgments and defining their own attitudes. It is therefore suggested that when judging the characteristics of tasks, field dependent people will be more influenced by the attitudes of other workers and hypothesis 1 will be more strongly supported for these individuals.

Hypothesis 2

The rating of the "motivating potential" of a task will be more influenced by the attitudes of other workers among field dependent individuals than among field independent individuals.

Worker self esteem should also affect the weight given to socially provided information. Bandura (1971) has argued that low self esteem individuals, being less confident in their own assessments of situations, are more likely to seek and use other people as information sources. High self esteem individuals, with more confidence in their own assessments, are less likely to be influenced by others. Weiss (1977, 1978) has shown that the use of role models in organizations is more pronounced among low self esteem workers than among high self esteem workers.

Hypothesis 3

The rating of the "motivating potential" of a task will be more influenced by the attitudes of other workers among low self esteem individuals than among high self esteem individuals.

Method

Overview

Subjects believed they were taking part in a study of training methods. They were to see a training film and then work on an electrical assembly task. Personality data were also being collected to allow analyses of individual reactions to various training procedures. In reality, the training film was used to manipulate the attitudes of other workers. The film depicted two students working on the task. While the experimenter described the method for completing the task and the activities of the "student workers", these workers were engaged in casual conversation which could just be heard in the background. Half of the

subjects saw a film in which the student workers made 4 statements expressing a fairly positive overall attitude toward the task (positive models condition). The other half saw a film in which the "workers" made no comments about the task (neutral models condition). Subjects then worked on either an enriched or unenriched version of the same electrical assembly task. After finishing the task, they completed the Job Diagnostic Survey.

Subjects

Eighty-eight male undergraduates enrolled in the introductory psychology course at Purdue University served as subjects. Their participation was in partial fulfillment of class requirements.

Tasks

Two variations, "enriched" and "unenriched", of the same electrical assembly task were used. Both versions required the subjects to wire an electrical circuit board containing a mixture of series and parallel circuits, light sockets and battery connections. Half of the subjects (N=44) worked on an "enriched" version, where they were given only a schematic diagram of the correct assembly and sufficient parts to complete the task. They were told that they could proceed as they desired. They were also told that if their assembly was correct the bulbs would light up with specified degrees of intensity when they connected the batteries. Only one subject was unable to successfully wire the board.

In the "unenriched" version of the task all wires, sockets and circuit paths were labeled. Subjects (N=44) were given an explicit step by step description of the wiring procedure (e.g., first connect one end of wire

A to the connection marked A_1) which they were to follow exactly. As no battery was provided, subjects in this condition were unable to complete the task or receive feedback.

The two versions of the task were designed to manipulate "motivating potential" through task characteristics of feedback (observation versus non observation of successful completion), autonomy (explicit instructions versus schematic only), task identity (by allowing or not allowing the individual to complete the task) and skill variety (by allowing or not allowing subjects to interpret the schematic, etc.). Results described in the next section attest to the success of this manipulation.

Introductory Film

Before seeing the film manipulating co-worker attitudes, all subjects were shown an introductory film which briefly (3 minutes) described the experimental task. The film was actually a videotape displayed on the monitor in each subject's room. Because two variations of the experimental task were used, two versions of this videotape were made. In both films, the experimenter described the parts and tools of the electrical assembly task. In the film shown to subjects in the enriched condition, the experimenter described the use of the schematic diagram and told subjects that, if they successfully wired the circuit, the bulbs would light with varying degrees of intensity when the battery was connected. In the film shown to subjects in the unenriched condition, the experimenter described the step by step instruction sheet instead of the schematic diagram. Subjects were told to follow the instructions exactly. No battery

was shown and nothing was mentioned about successful task completion. The tasks described in these films were exactly the tasks the subjects would eventually work on. Subjects were unaware that other participants might work on different tasks.

Training Film

After viewing the introductory film, a longer (10 minutes) videotape was displayed on each subject's monitor. Although subjects were led to believe that the film was made and being shown to them for training purposes, it was actually designed to unobtrusively communicate other workers' attitudes about the task. The film was introduced with the following statement:

> Now you will see the main training film. You will see two students, like yourself, working on the task. These workers were filmed through a one-way mirror while they participated in an earlier part of the project. They did not know they were being filmed. You will also hear these workers talk as they work on the task. Previous research on "on the job training" has shown that the casual comments of workers often provides significant instructional material. You will also hear the voice of an experimenter who will provide detailed instructions on how to do the task.

Four videotapes were made. In all tapes the "student workers" were the same two drama majors who were paid for their participation. The four tapes were designed to match the 2x2 orthogonal design of the study. That is, two tapes were made with the student workers expressing positive attitudes. In one tape they worked on the enriched task while in the other tape they worked on the unenriched task. Similarly, enriched and unenriched versions of the neutral attitude film were also made.

In all four tapes, the experimenter's voice described the actions of the "student workers". In the background, at a relatively lower volume, the workers' conversation could be heard. The general nature of that conversation was the same for all films, with the workers discussing classes, the upcoming spring break, the weather, etc. However, in the positive models condition films four comments were expressed by the student workers suggesting that they had a generally positive attitude toward the task (e.g., "I don't mind this task at all" or "this is OK"). These statements expressed a general satisfaction. Nothing about task characteristics or any other possible reason for their attitudes was mentioned. In the neutral models condition films, the workers expressed no attitudes toward the task.

Measures

Job Diagnostic Survey - Subjects' judgments of the motivating potential or scope of the experimental tasks were measured using the Job Diagnostic Survey (Hackman and Oldham, 1975). Respondents indicate the extent to which each of 15 statements about a job accurately represents his task. The measure provides scores for five "core task characteristics", autonomy, feedback, task significance, skill variety and task identity, which are then combined to form an overall motivating potential score (MPS). The MPS, representing the overall judged degree of enrichment of the job, served as the dependent variable of this study. For complete information on the construct validity and psychometric properties of the JDS see Hackman and Oldham (1975, 1976).

Field Dependence - Field Dependence was measured using a short form of the Group Embedded Figures Test (Jackson, 1956). The shortened test consists of 12 patterns in which are "embedded" specific figures. The individual must find and trace these figures within a 3 minute time limit. Karp (1977) states that the original 24 item Group Embedded Figures Test (Witkin, Dyk, Faterson, Goodenough and Karp, 1962) has shown consistently high correlations with other measures of Field Dependence. Witkin et al. (1962) report the test retest reliability for the GEFT to be .89. Jackson (1956) found that the correlation between the 12 item scale used in this study and the original 24 item scale was .96 for men and .97 for women (N = 51 for both groups). For the subjects in the current study the mean score was 4.31 with a standard deviation of 2.37.

Self Esteem - Self Esteem was measured using a shortened version of the Coopersmith Self Esteem Inventory (Coopersmith, 1967; Robinson and Shaver, 1973). The scale requires respondents to indicate whether 13 descriptions of the self are "like me" or "unlike me". Robinson and Shaver (1973) report that the full scale shows good reliability and considerable construct validity established in a series of studies by Coopersmith. For this study, the coefficient alpha internal consistency reliability was .67 with a mean of 39.07 (possible range of 0 to 52) and a standard deviation of 9.61.

Manipulation Check - To check the effectiveness of the manipulation of models' attitudes, subjects used a five point Likert type scale to indicate the extent to which they agreed that the workers in the film seemed to enjoy the task.

Procedure

Each subject was seated in a small room containing a table, video monitor, and headphone and microphone for communicating with the experimenter. Subjects were told they were participating in a study of the effects of visual and written training materials on electrical assembly task performance. They would see a training film, then receive some written material and work on an electrical assembly task.

They were also told that before seeing the film, they would complete certain personality inventories similar to those sometimes used for selecting electrical assembly workers. This was being done to examine the effects of individual differences on worker responses to various training methods. At that point subjects completed the Coopersmith Self Esteem Inventory and the Group Embedded Figures Test.

Subjects were then shown the brief introductory film in which the task components and equipment were described by the experimenter. They then viewed the longer "training" film which served to manipulate worker attitudes.

After seeing the training film each subject was ushered into another small room where he worked on the task depicted in the films. When the subject indicated to the experimenter that he was finished he was taken back to his original room where he completed the manipulation check and the Job Diagnostic Survey. The manipulation check was embedded in a series of questions about the utility of the films as a training device and the clarity of the written task instructions. These questions were followed by the task description section of the JDS.

Before being debriefed subjects were questioned about their reactions to the study and their thoughts about the purpose of the experiment.

The great majority of subjects assumed the purpose of the study was just as they had been told. A few believed the background conversation of the coworkers on the film was meant to distract them and the true purpose of the experiment was to examine the effects of noise on learning. These subjects all stated that they attempted to "tune out" the conversations of the coworkers and concentrate only on the experimenter's instructions. Almost all subjects were surprised when told of the actual hypotheses being examined.

Results

Manipulation Check

To assess the effectiveness of the manipulation of other workers' attitudes, subjects' ratings of the attitudes of the student workers were compared for the two model attitude conditions. Results indicated that the films were effective in conveying the attitudes of the student workers. For those subjects in the positive models condition the mean rating of the workers' attitudes was 4.14 (5 point scale). This was significantly higher ($F = 32.11$, $p < .001$) than the 3.30 average of the neutral models condition. The point biserial correlation between model attitude condition and subject rating of worker attitudes was $r=.54$. Separate checks on the effectiveness of the manipulation were computed for subgroups of Field Independent (N=42) and Field Dependent (N=46) and high (N=37) and low (N=51) Self Esteem subjects (groups formed by median splits). In all cases the differences between the model conditions were in the right direction and significant past the $p < .001$ level. In no case did the point biserial correlation between condition and rating of the workers' attitudes drop below $r=.50$. Thus, neither subject Field

Dependence nor Self Esteem related to recognition of the attitudes being conveyed. Therefore any ultimate differences in the effectiveness of the manipulation must have resulted from the extent to which the information provided by the student workers was being used rather than the extent of the attention given to the workers.

Hypothesis 1

Hypothesis 1 stated that subjects exposed to other workers expressing generally positive attitudes would, on the average, rate the motivating potential of the task significantly higher than subjects exposed to models not expressing any task related attitudes. Results of the analysis of variance testing this hypothesis are presented in Table 1 with relevant cell means available in Table 2.

Insert Tables 1 and 2 about here

Not unexpectedly, task differences had a significant effect on the Motivating Potential Scores of subjects. It was never suggested that the task does not make a strong contribution to the individual judgments reflected by the MPS. It was, however, hypothesized that the contextual information provided by other workers also plays a significant role and this hypothesis is confirmed by the significant effect that model attitude had on the subjects' ratings of the task's level of enrichment ($F = 11.05$, $p < .001$). No significant interaction was found between the effects of models' attitudes and task characteristics on task perceptions.

Hypothesis 2

Hypothesis 2 stated that the effect of other workers' attitudes would be more pronounced for Field Dependent subjects than for Field Independent

subjects. Table 3 presents the results of separate analyses of variance for Field Dependent (N=46) and Field Independent (N=42) subgroups formed by a median split on the Field Dependence measure.

Insert Table 3 about here

It is apparent that while models' attitude had a significant effect on MPS for both subgroups, the effect was much stronger among Field Dependent subjects where models' attitude accounted for a full 27% of the MPS variance. This manipulation accounted for only 2% of the variance in scores among Field Independent subjects. To test the significance of this interaction between models' attitude and Field Dependence, a regression analysis, as described by Cohen and Cohen (1975), was conducted. First, the independent variables of task manipulation, models' attitude manipulation and Field Dependence were entered into a regression equation. Then the interaction term representing the models' attitude-Field Dependence interaction was added. The introduction of the interaction term significantly increased the amount of MPS variance accounted for ($F=4.40$, $p < .05$).

Figure 1 graphically illustrates the nature of this intereaction. As suggested by the separate ANOVAs of Table 3, mean differences in MPS were found for both subgroups. However, the differences are much more pronounced among Field Dependent subjects. In total, the results of the separate ANOVAs and the moderated regression analysis strongly support Hypothesis 2.

Insert Figure 1 about here

It is also worth noting that while the objective task accounted for a significant amount of variance in both Field Dependent and Independent

subgroups, more variance was accounted for in the Field Independent group (41% in the Field Independent group and 23% in the Field Dependent group). This interaction was also found to be significant past the .05 level using the regression approach.

Hypothesis 3

Hypothesis 3 stated that the effect of models' attitude would be more pronounced among low Self Esteem subjects than among high Self Esteem subjects. Table 4 presents the results of separate analyses of variance for high (N=37) and low (N=51) Self Esteem subgroups formed by median split on the Coopersmith Self Esteem Inventory, while Figure 2 graphically presents the effect of Self Esteem differences on the relationship between models' attitude condition and MPS.

Insert Table 4 and Figure 2 about here

It can be seen that the effect of models' attitude was significant for low Self Esteem subjects but not for those with high Self Esteem. In the former group, models' attitude accounted for 20% of the variance in MPS while it accounted for less than 1% in the latter group. Again, a regression analysis was conducted to test the significance of this interaction. However, in this case, the increment in variance accounted for by the Self Esteem x models' attitude interaction term was not significant.

Discussion

Some researchers have suggested that an individual's judgment about task attributes is only partly a function of the task's objective characteristics. Personal and social factors can also influence a worker's

perceptions of a task. The results of this study support this position. Judgments of the motivating potential of a task, as measured by the Job Diagnostic Survey, were affected not only by the objective task requirements, but also by an awareness of the positive attitudes of other workers. Additionally, the relative influence of this socially provided information was affected by the personality of the observing worker.

Two implications of these results deserve further discussion. First, they demonstrate once again the importance of socially provided information for individuals attempting to find their way at work. It is clear, however, from this and other data (Weiss, 1977, 1978) that socially provided information is not always given substantial weight. In this study, Field Dependent subjects were more influenced by the models' attitudes than were Field Independent subjects. Although the results regarding Self Esteem were somewhat equivocable due to the absence of a significant interaction, it is true that low Self Esteem subjects were influenced by the attitudes of other workers while high Self Esteem subjects were not. Weiss (1977, 1978) had previously found support for imitation of supervisors in organizations among low but not high Self Esteem subordinates, and this study extends those results.

Future research should analyze the weight given to social information going beyond simple personality moderators and looking to situational influences as well. For instance, Goethals (1976) has applied an attributional analysis to the study of social influence. He argues that when observers see others expressing certain attitudes they attribute the cause of the attitude to either the attitudinal object (entity attribution) or to the other person's idiosyncratic motives, personality, biases, etc.

Entity attributions are more likely to lead to the adoption of the attitude by the observer. In organizations, situations which lead to entity attributions, such as dissimilar workers expressing the same attitudes or consistency of workers' attitudes across time, are likely to increase the weight given to model attitudes by observing workers making various judgments. Similarly, social learning research has shown that various model characteristics (success, competence, power, nurturance) influence the model's effectiveness. Therefore, future research should examine the influence of the personal characteristics of observed workers.

Second, the results suggest that problems can arise when perceptions are used to measure environmental characteristics since individual judgments about those characteristics are only partly determined by their objective properties. Of course, this problem is not limited to ratings of task attributes. Research on "implicit leadership theory" (Eden and Leviatan, 1975; Rush, Thomas and Lord, 1977) has shown that using worker perceptions to measure supervisory behavior can create problems of data interpretation since perceptions of leader behavior are influenced by a number of factors other than the behavior itself. The finding that perceptions of organizational stimuli are at least partly a function of social factors does not question the appropriateness of analyzing the relationships between perceptions and behavioral and attitudinal outcomes. If anything, the fact that perceptions of stimuli are not equivalent to the objective nature of those stimuli increases the importance of studying perceptual mediation. At the same time it also suggests that caution should be taken when using worker judgments as measures of objective organizational characteristics and points to the need for clarifying whether attributes of objects or people are being scaled.

Obviously, the external validity of this study is limited. The laboratory setting, the mode of information presentation and even the method of measuring motivating potential can all raise issues of generalizability. However, we believe this study strongly indicates that continued research of social influences on perceptual processes in organizations would be extremely fruitful. That research should not be limited to task perceptions, but extended to other perceptual and attitudinal judgments as well with systematic analyses given to the personal and situational factors which affect the relative weight of socially provided information.

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TABLE 1

Effects of Task Characteristics and Models' Attitudes on Task Perceptions

TOTAL SAMPLE

Source	DF	MS	F
Task	1	53134.84	45.82*
Model	1	12815.40	11.05*
Task X Model	1	1894.34	1.63
Residual	84		

*p < .001

TABLE 2

CELL MEANS

	Neutral Models	Positive Models	Total
Enriched Task	64.75	98.16	81.45
Unenriched Task	24.88	39.74	32.31
Total	44.81	68.95	

TABLE 3

Effects of Task Characteristics and Models' Attitudes for

Field Dependent and Field Independent Subgroups

Field Dependent

Source	DF	MS	F	ETA^2
Task	1	12244.77	10.92**	.23
Model	1	15373.63	13.72***	.27
Task X Model	1	455.51	.41	
Residual	42	1120.95		

Field Independent

Source	DF	MS	F	ETA^2
Task	1	32512.45	33.18***	.41
Model	1	4564.89	4.66*	.02
Task X Model	1	1393.28	1.42	
Residual	41	979.75		

***$\rho < .001$
**$\rho < .005$
*$\rho < .05$

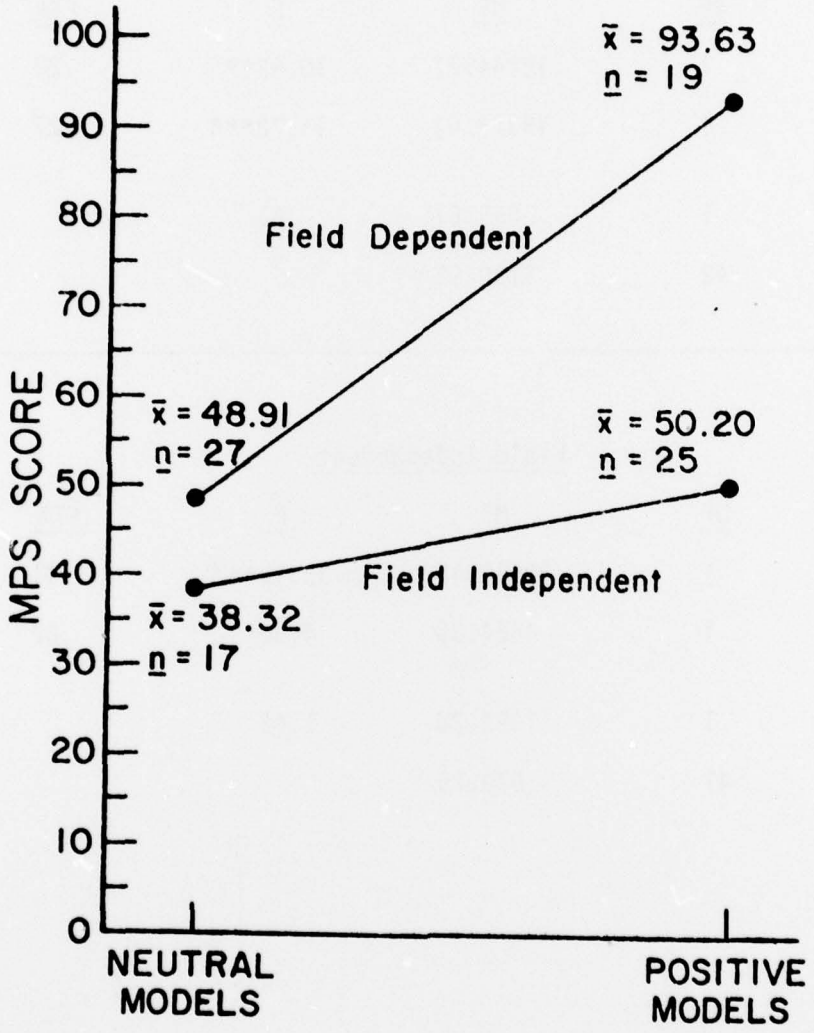

Figure 1

Effects of models' attitudes for

Field Dependent and Field Independent Subgroups

TABLE 4

Effects of Task Characteristics and Models' Attitudes for Low and High Self Esteem Subgroups

Low Self Esteem

Source	DF	MS	F	ETA^2
Task	1	20398.13	20.32**	.31
Model	1	11174.67	11.13*	.20
Task X Model	1	94.45	.09	
Residual	47	1003.87		

High Self Esteem

Source	DF	MS	F	ETA^2
Task	1	33265.75	24.50**	.36
Model	1	4684.52	3.45	.00
Task X Model	1	1724.97	1.27	
Residual	33	11791.25		

** $\rho < .001$
* $\rho < .005$

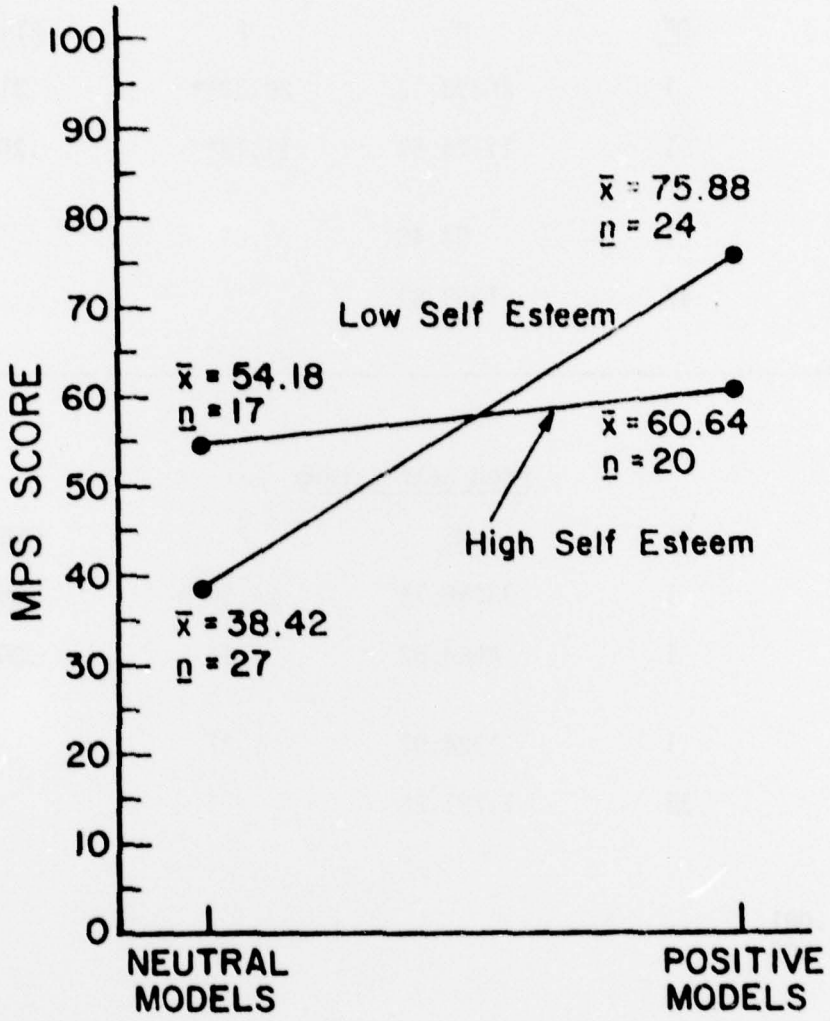

Figure 2

Effects of models' attitudes for

Low and High Self Esteem Subgroups

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