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WORKING WOMEN AND THE CYCLE OF DEFEAT:
SEX-SPECIFIC RESPONSES AND THEIR EMOTIONAL AND BEHAVIORAL CONSEQUENCES

by

Kirsten Hinsdale
J. David Johnson



VALIDATED
INSTRUCTION
ASSOCIATES
Box 386
Albion, Michigan 48224

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Kirsten Hinsdale

J. David Johnson

Validated Instruction Associates, Inc.

Albion, Michigan 49224

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↘ probability that the situation might arise again in the future. The data provided some support for the general human dynamics in the model. It also showed that women and men differed in their behavioral responses to the punitive situations, and in their emotional responses to the punitive situations involving masculine behaviors. Although general analyses revealed no sex differences in the predicted probabilities for the same situations recurring, more specific analyses suggested that males were more likely, in response to punitive situations, to report a maintenance or increase in the use of both feminine and masculine behaviors. Results are interpreted in terms of the model and previous research findings concerning the model.

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Preface

This study is the sixth in a series of investigations sponsored by the Office of Naval Research and designed to determine the validity of the "cycle of defeat," a theoretical model describing the psychosocial dynamics of sex discrimination in work groups. The model describes in behavioral terms how the stereotypic attitudes of work group members interact with women's already strong identification with the female sex role in a mutually reinforcing manner. The cycle of defeat is thought initially to limit women's behavioral repertoires, and ultimately, their salience in the working world. As a spinoff effect, the cycle also is believed to reinforce the stereotypic attitudes of work group members.

To date we have concentrated our research efforts in the attitudinal realm, testing the basic assumptions on which the model is predicated. Initially, we directed our attention toward examining the sex stereotypes on which the behavior of work group members toward women might be based, the extent to which these stereotypes are accurate or inaccurate, and the extent to which they are evident to work group members (Hinsdale & Johnson, 1978a, 1978c, 1978d). To put the cycle of defeat in its proper perspective, we also investigated the relative adaptiveness of the feminine and masculine sex roles in the working world (Hinsdale & Johnson, 1978b).

Most recently, we have initiated direct research on the most fundamental aspects of the model. The first study in this connection investigated differences in the ways work group members respond to feminine and masculine behaviors in women and men (Hinsdale & Johnson, 1978e). In the present study, we have completed researching the remaining basic propositions of the model--that women and men respond differently to the punishing and rewarding behaviors of work group members, and that the net results of these responses, for women, are the maintenance of traditional sex roles and stereotypes.

Contents

Introduction	2
The Cycle of Defeat	5
Preliminary Findings	8
Method	10
Instrument Design	10
Sample	13
Procedure	13
Results	14
Discussion	17
Conclusions	21
Reference Notes	24
References	25
Figures and Tables	30
Distribution List	36

Working Women and the Cycle of Defeat

2

That the behavioral repertoires of working women are in some ways more narrowly focused than those of men is eminently clear in the research on sex roles. For example, it has been shown that women are less likely than men to emerge as leaders in dyads or in groups (Lockheed & Hall, 1976; Merargee, 1969; Strodbeck & Mann, 1956), perhaps because they are less likely to employ instrumental, task-oriented behaviors, and more likely to employ expressive, socioemotional behaviors (Borgatta & Stimson, 1963; Strodbeck & Mann, 1956; Piliavin & Martin, Note 1). Women also yield more often (Tuddenham, MacBride, & Zahn, 1958), initiate fewer verbal acts (Heiss, 1962), and are less likely than men to influence others (Whittaker, 1965). Finally, they seem reluctant to engage in risk-taking, long-range planning, and career strategizing (Hennig & Jardim, 1977). In short, the research has adequately documented women's need to learn, in the words of one popular author, the "games mother never taught them" (Harragan, 1977).

What remains unclear in the research are the causes for women's behavioral deficits. Indeed, this issue has become the object of considerable debate. While biogenetic explanations find little support (Maccoby & Jacklin, 1974), the question remains whether working women are most strongly victimized by their own psychology or by the stereotypic expectations others have of them.

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Working Women and the Cycle of Defeat

3

Proponents of the psychological approach contend that women are handicapped by a number of internal barriers to achievement which result from their early socialization into traditional sex roles (Bem & Bem, 1970; Broverman, Broverman, Clarkson, Vogel, & Rosenkrantz, 1970; O'Leary, 1974). For example, it often is argued that the highly feminine personality is underdeveloped in the traits associated with success in the world of work--e.g., assertiveness, independence, and ambition--and overdeveloped in qualities which do little to assist career achievement--e.g., sensitivity, passivity, compassion. Support for this view is provided by O'Leary (1974), Schein (1973, 1975), and Terborg (1977), who report that women as a group describe themselves as different from or even opposite to men as a group on presumed requisite management characteristics.

Proponents of the psychological approach also point out the many motivational differences between women and men. For instance, women have been found to be less self-confident than men (Maccoby & Jacklin, 1974), to set more modest goals (Epstein & Bronzaft, 1974), and to have lower expectations for success (Crandall, 1969; Dweck & Gilliard, 1975). They also are more likely to fear success (Horner, 1970), to experience achievement anxiety (Strassberg, 1973; Tangri, 1972), to underestimate their own abilities and performance (Brim, Glass, Neulinger, and Firestone, 1969; Deaux, 1976; Feather, 1969) and to readily accept personal responsibility for failure (Deaux & Emswiler, 1975). Finally, women, more than men, are likely to allow themselves to be controlled by the expectations of others, or to possess an "external locus of control" (Minnegerode, 1976). These and related motivational constructs stand in direct opposition to such qualities as self-confidence and high self-esteem, which consistently have shown positive relationships with leadership (Stogdill, 1974).

Unfortunately, these attributes of women's personalities and motivations generally are assumed to be developmentally entrenched in their psyches. Thus, psychological theorists offer little hope for bringing women up to standard, other than therapeutic intervention for the feminine female or the nonsexist upbringing of future generations.

However, critics of the psychological approach have suggested that it may be based on questionable research methodology; studying the differences between the sexes frequently ignores their remarkable similarities (Spence & Helmreich, 1978; Stricker, 1977). As Hefner, Rebecca, & Oleshansky (1975) observe, psychology has for thirty years been obsessed with overemphasizing differences and underemphasizing similarities between groups. Consequently, a well-socialized psychologist will not even design studies that might show similarities (Greenwald, 1975). In the research on sex roles, this guarantees a built-in methodological sex bias--one which sometimes causes women's personality and motivational deficiencies to be vastly overstated.

At the same time that the psychology of sex roles has come under attack, a second school of thought has evolved based on a social perspective. Several theorists have come to view women's behavioral deficiencies not as results of faulty developmental processes, but as a function of ongoing social variables (e.g., Condry & Dyer, 1976; Darley, 1976; Mischel, 1977; Terborg, 1977). These theorists do not infer the existence of underlying traits and motivations to explain behavior, but instead argue for largely situational determinants. For example, women's fear of success may be little more than an accurate perception of the negative consequences which are forthcoming for cross-sex behavior. Given the inconsistency of findings on fear of success, this interpretation seems increasingly plausible (Condry & Dyer, 1976). Similarly, it is possible that women's low self-confidence reflects

the low expectations others have of them (Korman, 1970), and that their achievement anxiety is based on their observations of the increased social isolation, increased work strain, and decreased job satisfaction of successful women (Bachtold, 1976; Miller, Labowitz, & Fry, 1975). In other words, the psychological correlates of traditional sex roles, far from being entirely developmental in nature, appear to have some immediate constituents in reality. When seen from this social perspective, the formulation of stable psychological defects in women seems tantamount to blaming the victim--an approach with a despicable history in psychological theory (Ryan, 1971).

As is its habit, the truth probably lies somewhere between these two theoretical extremes. In fact, several theorists have proposed that psychological and social factors interact in mutually reinforcing ways--that women's sex-typed behavior reinforces stereotypic expectations, and conversely, that women's sex-typed psyches are reinforced by sexist behavior (Baruch, 1972; O'Leary, 1974; Putnam & Heinen, 1976; Ruhe & Guerin, 1977). This cyclical process is thought to perpetuate both sex stereotypes and traditional sex roles.

The Cycle of Defeat

To provide a logical framework within which to investigate the interaction between psychological and social variables, we developed a theoretical model, the "cycle of defeat" (Hinsdale, Note 2). The model suggests, first, that women tend to employ traditionally feminine behaviors and to avoid the use of traditionally masculine behaviors which might be adaptive in the workplace. It further holds that work group members--supervisors, peers, subordinates--are predisposed, by stereotypic attitudes, to reward feminine behavior and punish masculine behavior in women. Finally the model suggests

that women tend to respond to this sex-specific reward system in a traditionally feminine manner. These responses are thought to have two consequences: first, they reinforce the stereotypic attitudes of work group members, thereby ensuring a maintenance or increase in future sexist behavior. Second, they reinforce feminine psychological constructs, which in turn causes a maintenance or increase in the probability that women will continue to employ sex-typed behavior. These two consequences comprise the two loops in the cycle of defeat: the maintenance of stereotypes and sex roles in work groups.

Figure 1 shows the six areas of investigation and associated variable categories in the model.

Insert Figure 1 about here

As its first unit of research, the cycle of defeat describes four types of "shaping situations" which are begun by an "initiating behavior" and completed by an "environmental response," or reaction from work group member(s) (see Figure 1). The four types of shaping situations are rewarding responses to masculine behaviors (MR), rewarding responses to feminine behavior (FR), punishing responses to feminine behavior (FP), and punishing responses to masculine behavior (MP). The model holds that differential reward systems are inherent in the relative frequency of these four types of situations for women and men--that a given behavior is more frequently rewarded when it is same-sex than when it is cross-sex, and more frequently punished when it is cross-sex than same sex. It is at this point that the model accommodates the social factors which, in addition to psychological factors, influence the behavior of the sexes at work.

A shaping situation elicits from the person involved a "response

behavior" which may be feminine (passive/submissive), or masculine (aggressive/dominant) (see Figure 1). This response behavior, which completes a "transaction" between the individual and his or her interpersonal environment, comprises the second unit of research in the model. It is believed to be more often passive/submissive for women than for men, presumably as a result of sex-specific psychological constructs.

A given transaction results in three outcomes, which are the remaining units of research in the cycle of defeat. The first of these is an "environmental outcome," which is the predicted behavioral consequence of the transaction for work group member(s), and which comprises Loop 1 in the cycle of defeat. Depending on the type of shaping situation and of response behavior, it may involve a predicted increase in sex-specific environmental responses and, by inference, the reinforcement of sex stereotypes. Theoretically, this is a more common outcome for females.

The second outcome of a transaction is an "emotional response," or how a person feels about him/herself as a result of the transaction. The emotional response creates a critical link in that it forms the point at which the model explicitly accommodates psychological sex differences. Because of their less assertive response behaviors, women are thought to experience more negative emotional responses, reinforcing such constructs as low self-confidence and achievement anxiety.

The emotional response also forms a critical link in that it mediates future behavior, or the "behavioral outcome." This is the final outcome for a given transaction, and involves an increase or decrease in the initiating behavior. Again, depending on the sequence of events up to this point, it is proposed most frequently to involve an increase in traditionally feminine behavior in women, Loop 2 in the cycle of defeat.

It is apparent that if the general flow of the model holds true, there is a progressive accumulation of psychological and social sex differences in the chains of events comprising the cycle of defeat. Ultimately this cycle may prevent many women from realizing their full potential as contributing members of the workforce.

Preliminary Findings

The purpose of our past and present research has been to investigate the cycle of defeat as it applies differentially to working women and men. To date, we have concentrated our efforts primarily on testing the basic assumptions on which the model is predicated (Hinsdale & Johnson, 1978a, 1978b, 1978c, 1978d). Bearing most directly on the model were data to suggest that many feminine traits (and inferentially, behaviors) are tied to success in the working world (Hinsdale & Johnson, 1978b). As a result, even if the model is fully operant, the negative impact for women of Loop 2 in the cycle--the maintenance of sex-typed behavior--is greatly reduced.

Most recently we have directed our attention toward investigating the first units of research in the model itself: initiating behaviors and environmental responses. These findings are summarized below.

Initiating behaviors. To determine whether or not women and men are predisposed to employ sex-typed behavior, we administered the Bem Sex Role Inventory (BSRI, Bem, 1974) to a sample of 95 male and 95 female Navy enlisted personnel at the E-1 through E-5 paygrades. Our intention was to establish, in keeping with the model, that women gravitate toward the use of traditionally feminine behavior.

However, we found no significant differences in the degrees of femininity and masculinity women and men report as descriptive of themselves (Hinsdale & Johnson, 1978d). Instead, both sexes were highly androgynous, and both

placed somewhat more emphasis on masculinity than on femininity. Since it is generally acknowledged that measures of traits and attitudes have some degree of cross-situational validity (Fishbein & Ajzen, 1974; Garland and Price, 1977; Terborg & Ilgen, 1975), and since the BSRI in particular has been related to observable behavior (Bem, 1977), we take these findings to mean that working women and men possess no measurable inclination to conform behaviorally to stereotypic sex roles. Under laboratory conditions, then, initiating behaviors might be the same for both sexes.

However, as is frequently pointed out, behavior cannot be removed from its social context. Thus, in the next unit of research, we studied the social setting in which the behavior of working women and men occurs.

Environmental responses. To determine if women and men are exposed to differential reward systems by their peers and superiors, we investigated the frequency with which the four shaping situations in the cycle of defeat occur for male and female workers (Hinsdale & Johnson, 1978e). The instrument we used in this study consisted of behavioral examples of the sex-typed traits on the BSRI. Respondents included 216 male and female Navy enlisted personnel at the E-1 through E-9 paygrades, who were asked to indicate the extent to which they would encourage or discourage each behavior in one of four personalities: a male co-worker, female co-worker, male subordinate, or female subordinate.

Overall, the frequency of the various shaping situations was quite similar for all four personalities. In order of decreasing frequency, they received rewarding responses to masculine behaviors (MR), rewarding responses to feminine behaviors (FR), punishing responses to feminine behaviors (FP), and punishing responses to masculine behavior (MP).

The data presented only a small, insignificant tendency to suggest that

women and men are subjected to different patterns of approval. This tendency, however, was in a direction opposite to our predictions: behaviors were slightly more likely to be encouraged if they were cross-sex than if they were same-sex.

Conclusions. From this initial research we have concluded that if it operates at all, the cycle of defeat is greatly diminished in scope from our original predictions. As mentioned, the adaptiveness of many aspects of the feminine sex role reduces the power of the model to discriminate between situations which perpetuate competence and those which perpetuate mediocrity. Moreover, the lack of difference between the sexes, first, in sex-role identification and, second, in the interpersonal shaping processes to which they are exposed, fails to support the first major contention of the model--that women and men display different initiating behaviors for which they are differentially rewarded. These findings shed some suspicion on social explanations for women's behavioral difficulties and in effect shift the focus onto possible psychological causes.

Indeed, the possibility remains that the psychological distinctions between women and men cause them to respond differently to the four kinds of shaping situations. Differences in the sexes' response behaviors might still activate the remaining dynamics in the model and, in a reduced form, maintain stereotypes and sex roles in work groups. These dynamics--Loops 1 and 2 in the model--were the subject of the present investigation.

Method

Instrument Design

The study instrument consisted of sixteen hypothetical situations, including four of each type of shaping situation. The situations were derived in three stages.

First, a sample of 26 female and 24 male Navy enlisted personnel from the Orlando, Florida Recruit Training Command were interviewed. Their pay-grades ranged from E-1 through E-4.

The purpose of the interviews was to obtain work-related examples of feminine and masculine behavior. These were defined as behaviors consistent with the sex-typed traits on the BSRI, with two exceptions: the traits "feminine" and "masculine" were eliminated since they seem to do little more than identify the sex of the respondent (Waters, Waters, and Pincus, 1977; Gadreau, Note 3). The 38 remaining traits on the BSRI were divided into two lists of 19 traits, each containing approximately equal numbers of feminine and masculine items. These lists were administered individually to equal numbers of male and female subjects. Within sex, the administration of the two lists was random.

For each trait on the lists, interviewers first elicited and transcribed verbatim behaviors, then asked subjects to rate how their peers and supervisors respond to each behavior, using a 2-point scale ranging from "1 = encourage" to "3 = discourage." This first stage in the development of the study instrument generated over 600 examples of sex-typed behavior, as well as percentages of encouragement and discouragement for these behaviors by peers and superiors.

In the second stage, lists of the behaviors associated with the 38 BSRI traits were compiled. These lists were administered to 16 female and 14 male students from Albion College, Albion, Michigan. The mean age of the students was 18.9 years. Subjects were convened in a classroom setting, instructed to review each list thoroughly, and asked to select the behavior they deemed most representative of each trait. This second stage produced frequency distributions which identified the most representative behavior

for each trait.

In the third stage, the four feminine and four masculine traits with the highest rates of encouragement and discouragement from peers or superiors were selected, using the data from the first group of subjects (see Table 1). These 16 traits were used as the basis for the situations in the present study. Using the data from the second group of subjects, the most representative behavior for each trait was identified. In keeping with the data from the first stage, rewarding or punishing environmental responses were devised for each of these behaviors, thereby forming the 16 shaping situations. In many cases, these responses were taken directly from the original interview material; in others, the most representative behavior readily suggested a response one might reasonably expect from co-workers or superiors.

Insert Table 1 about here

The situations were written as if the subject had initiated the situation and a co-worker or superior had responded in a rewarding or punitive manner. Accordingly, subjects were asked to imagine themselves as participants in each situation (e.g., "You have made a mistake on a difficult assignment for which you volunteered. Your superior tells you not to volunteer again unless you know what you're doing.").

For each situation, subjects were asked, first, to answer to an open-ended item eliciting their predicted response ("What would you do or say?"). Subjects then were asked to answer four questions representing the major areas of investigation in the model: 1) How would you rate this response? (response behavior), 2) How would this exchange make you feel about yourself? (emotional outcome), 3) How likely would you be to do the same

thing again? (behavioral outcome), and 4) If you did do this again, how likely would the other person be to respond the same way? (environmental outcome). Each of these four questions used a 7-point scale. For the first question, the scale ranged from "1 = very dominant to 7 = very submissive;" for the second and third questions, it ranged from "1 = very good to 7 = very bad," and for the fourth and fifth questions, from "1 = much more likely to 7 = much less likely."

Sample

Subjects included 112 male and 104 female Navy enlisted personnel from NAS Memphis. Their paygrades ranged from E-1 through E-9, with a mode of E-3. They had served in the Navy a median of .83 years. 95.8% had completed high school, 38.9% had had some college, and 8.4% had a college degree. Approximately one-tenth of the subjects (11.6%) were nonwhite. Most of them were single (62.8%); approximately one-third were married (30.2%); and the remainder (7.0%) were divorced or separated. Their ages ranged from 17 to 54, with a median of 21.6 years.

Subjects were recruited by their respective commands according to their availability for participation in the study. Together, they represented a wide range of scientific, technical, clerical, and labor specialties. None was directly engaged in a combat-related position.

Procedure

Subjects were convened in classroom settings in groups of 50 to 55. The instrument was distributed and subjects were instructed to complete each item in sequence. To do this, they first wrote out their predicted response to the shaping situation. Next, they entered on an answer sheet the numbers from the corresponding scales which best described their responses to the five remaining questions.

Subjects were allotted one-half hour to complete the task. All subjects finished in this length of time.

Results

Path Analysis

In the first phase of the analysis, correlational studies were conducted to determine the strength of the four causal links under investigation--i.e., to see if the final dynamics proposed by the model hold true, regardless of sex. Accordingly, correlations were run between response behaviors and environmental outcomes (Loop 1), response behaviors and emotional responses, and emotional responses and behavioral outcomes (Loop 2), as well as directly between response behaviors and behavioral outcomes. The results are shown in Figure 2.

Insert Figure 2 about here

With respect to Loop 1, small positive correlations were found between aggressive/dominant response behaviors and predicted increases in the likelihood that encouraging environmental responses would be repeated, or positive environmental outcomes, $r = .18$ for MR, and $r = .19$ for FR. Both were significant at the .05 level. Conversely, small negative correlations were found between aggressive/dominant response behaviors and the likelihood that discouraging environmental responses would be repeated, or negative environmental outcomes, $r = -.16$ for FP, and $r = -.12$ for MP. For the FP situation, the correlation was significant at the .05 level. Overall the strongest Loop 1 links were evident in the rewarding situations; 3.2% of the variance was accounted for in the MR situation, and 3.6% in the FR situation.

With respect to Loop 2, moderate positive correlations were found between aggressive/dominant response behaviors and positive emotional responses, $r = .38$ for MR, $r = .41$ for FR, $r = .52$ for FP, and $r = .62$ for MP. Similarly, there were moderate positive correlations between positive emotional responses and predicted increases in the initiating behavior, or positive behavioral outcomes, $r = .70$ for MR, $r = .62$ for FR, $r = .53$ for FP, and $r = .61$ for MP. Finally, there were weak to moderate correlations directly between aggressive/dominant response behaviors and positive behavioral outcomes, $r = .31$ for MR, $r = .25$ for FR, $r = .32$ for FP, and $r = .47$ for MP. All twelve correlations were significant at the .01 level. Overall, the strongest Loop 2 links were in the MR situation, accounting for 49.0% of the variance, followed by the FR situation (38.8%), MP situation (38.4%), and FP situation (29.2%).

To determine whether the emotional response has a mediating effect between the response behavior and the behavioral outcome, effect coefficients (cf. Blalock, 1964) were calculated for the direct link from the response behavior to the behavioral outcome and for the mediated link, which includes the emotional response. The resulting effects on the behavioral outcome are shown in Table 2.

Insert Table 2 about here

General Sex Differences

The second stage of the analysis examined sex differences in response behaviors, environmental outcomes, emotional responses, and behavioral outcomes. Initially, the data were integrated across all four situational types and analysis of variance was used to determine if overall sex differences

were evident. A significant difference was found between the sexes on response behaviors, $F(1,189) = 6.42, p < .05$, with males responding in a more aggressive/dominant manner than females, $M = 3.01$ vs. 3.25 . The sexes did not differ on the three remaining variables.

An analysis of sex differences by situational type pinpointed the context for males' and females' differential response behaviors. Significant differences were found only for the two situations involving discouraging environmental responses, $t(209) = 2.06, p < .05$ for FP, and $t(205) = 2.28, p < .05$ for MP. For both types, the means were significantly lower for males than for females, implying that males use more aggressive/dominant responses than females, $M = 3.20$ vs. 3.58 for FP, and 3.08 vs. 3.43 for MP. Correlations substantiated these findings. There were small but significant positive correlations between being male and displaying strong response behaviors to the two punitive situations, $r = .15, p < .05$ for FP, and $r = .14, p < .05$ for MP.

Further analysis of sex differences by situational type revealed that the sexes also differ in their emotional responses, but only to the MP situation, $t(209) = 2.01, p < .05$. Again, the mean was lower for males, $M = 3.52$ vs. 3.82 , denoting more positive emotional responses.

There were no significant differences between the sexes in behavioral outcomes or environmental outcomes for any of the four situations.

Sex differences in Loop 1 and 2 Chains

In the final phase of the analysis, the most typical chains of events following each type of situation were derived for both males and females. In this analysis the data were viewed as if each chain involved a series of dichotomous choices, and individual responses to each question were classified as falling above or below the mid-point of the corresponding scales. Thus,

the dichotomous choices were aggressive/dominant (+) or passive/submissive (-) response behaviors, increases (+) or decreases (-) in the predicted likelihood that the initiating behavior will be used by the respondent in the future. Each subject contributed eight chains to this analysis, including one Loop 1 and one Loop 2 chain for each situational type.

General analyses revealed that the sexes were remarkably similar in their selection of Loop 1 and Loop 2 chains for all four situational types. The discrepancies between the sexes on all chains for both loops, by situational type, are shown in Tables 3 and 4.

Insert Tables 3 and 4 about here

More specific analyses showed significant sex differences on two Loop 2 chains bearing directly on the model. First, in response to the FP situation, males were more likely to report aggressive/dominant response behaviors, followed by positive emotional responses and predicted increases in the initiating behavior (+++), 40.4% vs. 22.7% of chains, chi-square = 7.37, $p < .01$. Second, the females were more likely than males, when confronted with the MP situation, to use a submissive/passive response, followed by a negative emotional response and a predicted decrease in the initiating behavior (---), 26.0% vs. 12.6% of chains, chi-square = 5.82, $p < .02$.

Discussion

The results of this study lend considerable support to the general psychological dynamics outlined in the cycle of defeat. First, the path analytic data for Loop 1 indicate that individual workers, regardless of sex, have some ability to influence the ways in which work group members

respond to them; aggressive/dominant response behaviors were associated both with increasing the probability for encouraging responses and decreasing the probability for discouraging responses (see Figure 2). Since women were found to be significantly less likely to use aggressive/dominant response behaviors than men, it follows that they also would be less likely to shape the behavior of work group members in a manner to create accommodative interpersonal environments. However, the general analyses of sex differences did not bear out this supposition; there were no significant differences in environmental outcomes. One reason for this may have been the nature of the questionnaire itself; certainly, asking subjects to predict whether or not a hypothetical environmental response is likely to be repeated lacks a firm basis in reality. Thus, additional research into Loop 1, using actual case histories, seems warranted.

More substantial support for the model is provided in connection with Loop 2. The path analytic data showed that moderate relationships exist, regardless of sex, between the strength of the response behavior and positive emotional responses, and between positive emotional responses and predicted increases in the initiating behavior, or positive behavioral outcomes (see Figure 2). Moreover, as the model predicts, the effect coefficients indicated that the emotional response does in fact form a mediating link between the response behavior and the behavioral outcome (see Table 2).

Generally, these Loop 2 correlational findings suggest that certain human dynamics are operant for each type of situation described in the model: how a person responds to a situation does affect how he or she feels about him/herself, which in turn predicts how he or she will behave in the future. Thus, to the extent that an individual responds assertively to a situation, he or she can expect to experience good feelings about him/herself and to

maintain the initiating behavior. Conversely, to the extent that an individual employs yielding responses, he or she can anticipate bad feelings about him/herself and a decrease in the initiating behavior. Given these dynamics, it seems logical that the sexes' different response behaviors would activate Loop 2, causing them to experience different emotional responses and behavioral outcomes to the various situations.

The general analyses of sex differences revealed that this is partially true for the MP situation, in which women were significantly more likely than males to report negative emotional responses. This finding is generally consistent with studies showing that women tend to attribute their failures to their own lack of skill or ability, rather than to bad luck or circumstance (e.g., Deaux & Emswiler, 1975). More specifically, however, it suggests that this sex-specific attribution pattern is magnified in situations involving punishment for masculine behaviors, which seem to pose a certain threat to women's integrity. As the model holds, a woman's failure to defend herself under these circumstances extracts a definite psychological price, and one which might be expected to reinforce such feminine psychological constructs as low self-confidence (Maccoby & Jacklin, 1974) achievement anxiety (Strassberg, 1973), and fear of success (Homer, 1970).

The general analyses of sex differences did not go on to indicate that women's negative emotional responses produce negative behavioral outcomes; again this may be a function of the highly hypothetical nature of questions asking subjects to predict their future use of initiating behaviors which might have seemed out-of-character in the first place. Still, one might expect the erosion of self-confidence implicit in women's emotional responses to surface eventually in some aspect of their behavior. Indeed, some evidence

that it does is provided by the sex differences in the selection of Loop 2 chains for the two punitive situations (see Table 3). For the FP situation, men reported a significantly more frequent use of aggressive/dominant responses, followed by positive emotional responses and increases in the initiating behavior (+++). For the MP situation, females more frequently indicated passive/submissive response behaviors, followed by negative emotional responses and decreases in the initiating behavior (---). Because both the masculine and feminine traits underlying the behaviors used in this study are largely adaptive (Hinsdale & Johnson, 1978b), these findings place women at a distinct disadvantage. First, when confronted with punitive responses to feminine behaviors, they are less likely than males to choose a chain which enhances their feelings about themselves and ultimately increases the use of feminine behaviors. Second, when confronted with punitive responses to masculine behaviors, they are more likely than males to select a chain which diminishes their feelings of self-worth and ultimately decreases the use of masculine behaviors. In other words, women seem to be more strongly impacted by criticism, discouragement, or punitive responses; they are more likely to let it affect them both personally and behaviorally, and to avoid using the punished behavior in subsequent interactions. Males, on the other hand, seem more impervious to criticism and show less inclination to modify their behavior as a result of it: a range of behavioral options remain open to them.

Although these findings do not support the proposition that Loop 2 in the cycle of defeat maintains traditional sex roles, they do suggest that in punitive situations, Loop 2 more often inhibits adaptive behavior in women than in men. Even with this altered scope and emphasis, it is apparent that the cycle of defeat may, through repeated activation, have a very negative cumulative

effect on women's psyches, behaviors, and careers.

Taken together, the findings from this study suggest that the cycle of defeat is partially activated in work-related situations involving punitive environmental responses. Although the findings with respect to Loop 1 are minimal and not sex-specific, some evidence points to a tendency for more assertive response behaviors to decrease punitive environmental responses and to increase rewarding responses. In view of this, women's more passive response behaviors must be interpreted as less effectual than men's more aggressive responses, despite the absence of definitive findings to this effect. Moreover, in situations in which punitive responses are based on sex stereotypes, women's more yielding behaviors may, by inference, reinforce stereotypic attitudes among work group members.

For Loop 2, the data show more clearly that the cycle of defeat is operant in punitive situations--first, in the different emotional responses of the sexes, and second, in their differential selection of Loop 2 chains, resulting in a maintenance of adaptive behavior in males. Certainly, these findings point to the need for more intensive study of a range of punitive situations, taken from actual case histories, to examine the full operation and impact of the cycle of defeat.

Conclusions

Overall, our cumulative studies lend little support to the view that working women's behavioral deficits are a function of social variables. Although our initial research pointed to the existence of inaccurate stereotypes of women, a preference for male co-workers, and the devaluation of the highly masculine female (Hinsdale & Johnson, 1978a, 1978b, 1978c), subsequent studies have failed to find correlates for these attitudes in the experience of working women and men or in the behavior of their immediate peers and

superiors (Hinsdale & Johnson, 1978d, 1978e). Thus, the behavioral differences between the working sexes unearthed in this study must be viewed primarily as a function of their developmental psychological differences in personality and motivation.

Alternatively, however, it is possible that these differences are at least in part caused by the kinds of sexism not addressed in this series of studies--i.e., sexism expressed on a systems level or periodically articulated by work group members. Our applied research (Hinsdale, Cook, & Johnson, Note 4, Note 5), as well as that of others (e.g., O'Connor, 1978), has uncovered considerable evidence documenting widespread negative attitudes toward women, often expressed in outright hostility or sexual harassment, or in denials of training and promotion opportunities. It is perhaps these especially punitive incidents--rather than consistent differences in the daily treatment of the sexes--that most frequently set the cycle of defeat in motion. And it is perhaps these situations, or common knowledge of them, that account in part for the more yielding behaviors displayed by the women in the present study.

In any case, the results of this study indicate that efforts to help effect the integration of women into the workforce should do more than concentrate solely on eliminating sexism. They also should focus on training women to recognize and deal with their own psychological weaknesses, the punitive situations which elicit them, and the behavioral deficiencies which result from them. Imparting this kind of awareness to women, along with enhanced behavioral skills, should provide the means for breaking the cycle of defeat.

On a larger scale, the fact that by far the strongest findings in this study support the human dynamics, rather than the sex-specific dynamics,

described in the model suggests that sex is not the primary factor activating the cycle of defeat. Instead, an inability to respond assertively to punitive situations emerges as a more accurate predictor of the cycle's operation. Because of this, training developed for women should also be applicable to nonassertive males, who in this study seem equally likely to be victims of their own psychology.

Reference Notes

1. Piliavin, J. A. & Martin, R. R. Playing dumb & stroking: The effects of opposite sex on group participation. Unpublished manuscript, University of Wisconsin, 1974.
2. Hinsdale, K. Working women and the cycle of defeat: A theoretical model. Albion, Mich.: VIA, Inc., October, 1976.
3. Gadreau, P. Bem Sex-role Inventory validation study. Paper presented at the meeting of the American Psychological Association, Chicago, Illinois, 1975.
4. Hinsdale, K., Cook, J., & Johnson, J. D. The new Navy woman needs assessment interviews: A preliminary report. Albion, Mich.: VIA, Inc., January, 1978.
5. Hinsdale, K., Cook, J., & Johnson, J. D. The new Navy woman seminars: Self-management and career advancement. Albion, Mich.: VIA, Inc., June, 1978.

References

- Bachtold, L. M. Personality characteristics of women of distinction. Psychology of Women Quarterly, Fall, 1976, 1 (1), 70-78.
- Baruch, G. K. Maternal influences upon college women's attitudes toward women and work. Development Psychology, 1972.
- Bem S. L. The measurement of psychological androgyny. Journal of Consulting and Clinical Psychology, 1974, 42 (2), 155-162.
- Bem, S. L. On the utility of alternative procedures for assessing psychological androgyny. Journal of Consulting and Clinical Psychology, 1977, 45 (2), 196-205.
- Bem, S. L. & Bem, D. J. Homogenizing the American woman: The power of an unconscious ideology. In D. J. Bem (ed.) Beliefs, attitudes and human affairs. Belmont, California: Brooks/Cole, 1970.
- Blalock, H. M. (ed.): Causal Models in the Social Sciences, Chicago: Aldine, 1970.
- Borgatta, E. F., & Stinson, J. Sex differences in interaction characteristics. Journal of Social Psychology, 1963, 60, 89-100.
- Brim, O. G., Glass, D. C., Neulinger, J. & Firestone, I. J. American beliefs and attitudes about intelligence. New York: Russell Sage, 1969.
- Broverman, I., Broverman, D., Clarkson, F., Vogel, S., & Rosenkrantz, P. Sex-role stereotypes and clinical judgments of mental health. Journal of Consulting and Clinical Psychology, 1970, 34 (1), 1-7.
- Condry, J. & Dyer, S. Fear of success: Attribution of cause to the victim. Journal of Social Issues, 1976, 32 (3), 63-83.
- Grandall, V. C. Sex differences in expectancy of intellectual and academic reinforcement. In C. P. Smith (ed.) Achievement-related motives in children. New York: Russell Sage Foundation, 1969.

- Darley, S. Big-time careers for the little women: A dual-role dilemma. Journal of Social Issues, 1976, 32 (3), 85-98.
- Deaux, K. The behavior of women and men. Brooks/Cole Publishing Co. Monterey, California: 1976.
- Deaux, K. & Emswiler, T. Explanations of successful performance on sex-linked tasks: What's skill for the male is luck for the female. Journal of Personality and Social Psychology, 1974, 29, 80-85.
- Dweck, C. S., & Gilliard, D. Expectancy statements as determinants of reactions to failure: Sex differences in persistence and expectancy chance. Journal of Personality and Social Psychology, 1975, 32, 1077-1084.
- Epstein, G. F. & Bronzaft, A. Female modesty in aspiration level. Journal of Counseling Psychology, 1974, 21 (1), 57-60.
- Feather, N. T. Attribution of responsibility and valence of success and failure in relation to initial confidence and task performance. Journal of Personality and Social Psychology, 1969, 13, 129-144.
- Fishbein, M. & Ajzen, I. Attitudes toward objects as predictors of single and multiple behavioral criteria. Psychological Review, 1974, 81, 26-43.
- Garland, H. & Price K. H. Attitudes toward women in management and attributions for their success and failure in a managerial position. Journal of Applied Psychology, 1977, 62 (1), 29-33.
- Greenwald, A. G. Consequences of prejudice against the null hypothesis. Psychological Bulletin, 1975, 82, 1-20.
- Harragan, B. Games mother never + at you. New York: Warner Books, 1977.
- Hefner, R., Rebba, M., & Oleshansky, Development of sex-role transcendence. Human Development, 1975, 18, 143-158.

- Heiss, J. S. Degree of intimacy and male-female interaction. Sociometry, 1962, 25, 197-208.
- Hennig, M. & Jardim, A. The managerial woman. Garden City, New York: Anchor Press, 1977.
- Hinsdale, K. & Johnson, J. D. Masculinity, femininity, and the workplace: A study of stereotypes. Albion, Michigan: VIA, Inc., August, 1978. (NTIS No. AD-A059731). (a)
- Hinsdale, K. & Johnson, J. D. Masculinity, femininity, and androgyny: What really works at work? Albion, Michigan: VIA, Inc., September, 1978 (NTIS No. AD-A061177). (b)
- Hinsdale, K. & Johnson, J. D. Stereotypes of working women: Fact or fiction? Albion, Michigan: VIA, Inc., November, 1978 (NTIS No. AD-A062427). (c)
- Hinsdale, K. & Johnson, J. D. Women in work groups: Misperceptions and missed expectations. Albion, Michigan: VIA, Inc., November, 1978 (NTIS No. AD-A062428). (d)
- Hinsdale, K. & Johnson, J. D. Patterns of approval in work groups: Treating the sexes equally. Albion, Michigan: VIA, Inc., December, 1978 (NTIS No. AD-). (e)
- Horner, M. Femininity and successful achievement: A basic inconsistency. In J. Bardwick, E. M. Donovan, M. S. Horner, & D. Gurmman (eds.) Feminine Personality and Conflict. Belmont, California: Brooks/Cole, 1970.
- Korman, A. Toward a hypothesis of work behavior. Journal of Applied Psychology, 1970, 54, 31-41.
- Lockheed, M. E. & Hall, K. P. Conceptualizing sex as a status characteristic: Applications to leadership training strategies. Journal of Social Issues, 1976, 32 (3), 111-124.

- Maccoby, E. M. & Jacklin, C. N. The psychology of sex differences.
Stanford, California: Stanford University Press, 1974.
- Mergargue, E. I. Influence of sex-roles on the manifestation of leadership.
Journal of Applied Psychology, 1969, 53, 377-382.
- Miller, J., Labowitz, S., & Fry, L. Inequities in the organizational
experiences of women and men. Social Forces, 1975, 54 (2), 365-381.
- Minnegerode, F. A. Attitudes toward women: Sex-role-stereotyping and
locus of control. Psychological Reports, 1976, 38, 1301-1302.
- Mischel, W. On the future of personality measurement. American Psychologist,
1977, 32, 246-254.
- O'Connor, R. D. The nature and mission relatedness of race and sex
discrimination in the Navy. Oklahoma City, Oklahoma: Behavior
Design, Inc., December, 1978.
- O'Leary, V. Some attitudinal barriers to occupational aspirations in women.
Psychological Bulletin, 1974, 81, 809-826.
- Putnam, L. & Heinen, E. Women in management: The fallacy of the trait
approach. MSU Business Topics, Summer, 1976, 47-53.
- Ruhe, J. & Guerin, V. Differences in attitudes, behavior, and effectiveness
of female and male leaders. Proceedings of the Eastern Academy of
Management, May, 1977, 10-15.
- Ryan, W. Blaming the victim. New York: Vintage Books, 1971.
- Schein, V. The relationship between sex role stereotypes and requisite
management characteristics. Journal of Applied Psychology, 1973, 57 (2),
95-100.
- Schein, V. Relationships between sex role stereotypes and requisite
management characteristics among female managers. Journal of Applied
Psychology, 1975, 60 (3), 340-344.

- Spence, J. & Helmreich, R. Masculinity and femininity. Austin, Texas: Texas Press, 1978.
- Stogdill, R. Handbook of leadership: A survey of theory and research. New York: Free Press, 1974.
- Strassberg, D. S. Relationships among locus of control, anxiety, and valued-goal expectations. Journal of Consulting and Clinical Psychology, 1973, 41, 319.
- Stricker, G. Implications of research for psychotherapeutic treatment of women. American Psychologist, 1977, 32, 14-22.
- Stodtbeck, F. & Mann, R. Sex-role differences in jury deliberations. Sociometry, 1956, 19, 3-11.
- Tangri, S. S. Determinants of occupational role innovation among college women. Journal of Social Issues, 1972, 32, 14-22.
- Terborg, J. Women in management: A research review. Journal of Applied Psychology, 1977, 62, 647-664.
- Tuddenham, R. D., MacBride, P., & Zahn, V. The influence of the sex composition of the groups upon yielding to a disturbed group norm. Journal of Psychology, 1958, 46, 243-251.
- Terborg, J. R. & Ilgen, D. A theoretical approach to sex discrimination in traditionally masculine occupations. Organisational Behavior and Human Performance, 1975, 13, 352-376.
- Whittaker, J. D. Sex differences and susceptibility to interpersonal persuasion. Journal of Social Psychology, 1965, 66, 91-92.
- Waters, C. W., Waters, I. K., & Pincus, S. Factor analysis of masculine and feminine sex-types items from the Bem Sex-Role Inventory. Psychological Reports, 1977, 40, 567-570.

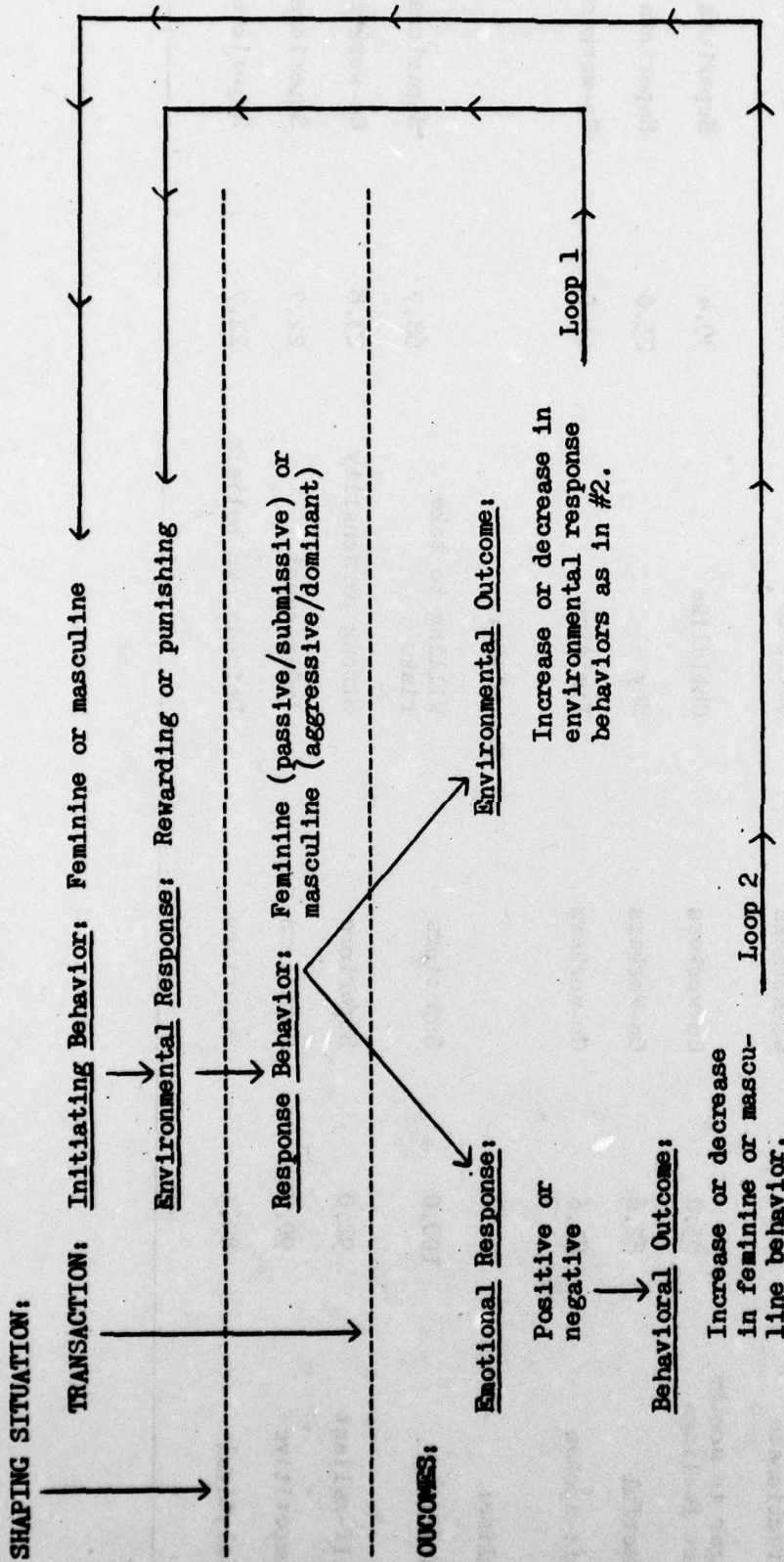


Figure 1. The six areas of investigation in the cycle of defeat.

Table 1
Most Strongly Encouraged and Discouraged BSRI Traits

Encouraged Traits	Encouragement %	Source	Discouraged Traits	Discouragement %	Source
Feminine:					
Affectionate	100.0	Co-workers	Gullible	75.0	Superiors
Eager to soothe hurt feelings	85.0	Co-workers	Childlike	30.4	Superiors
Cheerful	82.6	Co-workers	Shy	25.0	Superiors
Soft-spoken	81.6	Co-workers	Yielding	15.0	Co-workers
Masculine:					
Ambitious	100.0	Superiors	Willing to take risks	68.7	Superiors
Self-reliant	92.0	Superiors	Strong personality	23.8	Co-workers
Competitive	90.9	Superiors	Independent	22.7	Superiors
Analytical	89.5	Superiors	Defends own beliefs	22.7	Superiors

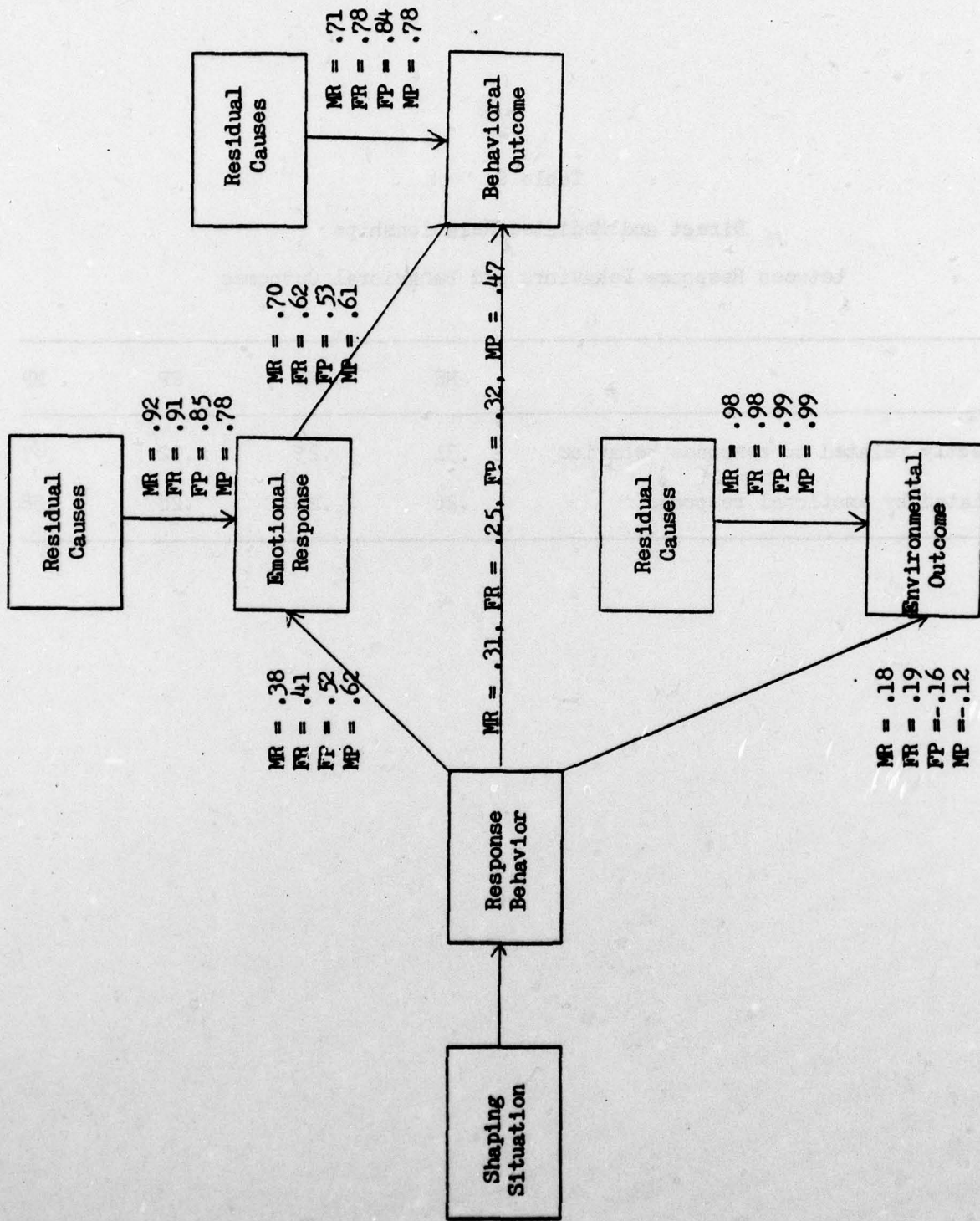


Figure 2. Relationships in the cycle of defeat.

Table 2
 Direct and Mediated Relationships
 between Response Behaviors and Behavioral Outcomes

	MR	FR	FP	MP
Directly related to response behavior	.31	.25	.32	.47
Mediated by emotional response	.26	.25	.28	.38

Table 3
Differences in the Selection of
Loop 1 Chains by Males and Females^a

Situation	Chain (% Difference)					\bar{M}
	++	+-	-+	--		
MR	0	1.7	2.5	3.6		1.7
FR	11.2	-1.8	-5.3	-4.2		5.6
FF	10.9	4.8	-9.8	-6.1		7.9
MP	8.3	2.4	-8.2	-2.6		5.4

^aPositive and negative values represent chains more frequently selected by males and females, respectively.

Table 4
Differences in the Selection of
Loop 2 Chains by Males and Females^a

Situation	Chain (% Difference)								M
	+++	++-	+-+	+--	-++	-+-	---		
MR	0	-.3	-.9	0	1.8	.8	-3.2	0	1.7
FR	8.8	-2.1	2.7	0	-9.2	-.1	-1.2	.9	3.1
FP	17.7*	1.2	-2.6	-.5	-1.8	-2.6	-4.7	-7.7	4.7
MP	.6	8.5	-.5	2.1	2.5	1.4	-1.3	-13.4*	3.8

^aPositive and negative values represent chains more frequently selected by males and females, respectively.

*Significant at the .05 level.

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U.S. Coast Guard (G-P-1/2/62)
Washington, D.C. 20590

Principal Investigators

Dr. Earl A. Alluisi
Performance Assessment Laboratory
Old Dominion University
Norfolk, Virginia 23508

Dr. James A. Bayton
Department of Psychology
Howard University
Washington, D.C. 20001

Dr. H. Russell Bernard
 Department of Sociology and
 Anthropology
 West Virginia University
 Morgantown, West Virginia 26506

Dr. Arthur Blaiwes
 Human Factors Laboratory
 Code N-71
 Naval Training Equipment Center
 Orlando, Florida 32813

Dr. David G. Bowers
 Institute for Social Research
 P. O. Box 1248
 University of Michigan
 Ann Arbor, Michigan 48106

Dr. Norman G. Dinges
 The Institute of Behavioral Sciences
 250 Ward Ave - Suite 226
 Honolulu, Hawaii 96814

Dr. J. Richard Hackman
 School of Organization and Management
 56 Hillhouse Ave.
 Yale University
 New Haven, Connecticut 06520

Dr. Asa G. Hilliard, Jr.
 The Urban Institute for Human
 Services, Inc.
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 Department of Psychology
 State University of New York at Buffalo
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 University of Oregon
 Eugene, Oregon 97403

Dr. Philip G. Zimbardo
 Department of Psychology
 Stanford University
 Stanford, California 94305

Others

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 Department of Psychology
 Stanford University
 Stanford, CA 94305

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 Krannert Graduate School
 Purdue University
 West Lafayette, Indiana 47907

James R. Terborg
 Department of Psychology
 University of Illinois
 Champaign, Illinois 61820

Dr. Donald G. Gardner
 Krannert Graduate School of Management
 Krannert Building
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 West Lafayette, IN 47907