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An Analysis of Subordinate Influence on Leader Behavior: The Use of Multiple Measures and the Examination of Potential Moderators

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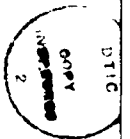
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Trained participant observers recorder the monitoring and controlling behaviors of 78 target managers. These managers' subordinates completed a number of questionnaires relating to perceived effectiveness, satisfaction, autonomy, commitment, and their leader's behavior. The results of the statistical analysis indicated enough support (from both the directly observed leader behavior and the questionnaire descriptions) to conclude that subordinates' behavior/situation does seem to influence leader behavior.		

Despite the tremendous amount of attention that has been given to the topic of leadership over the years, we still know very little about the antecedents in the leadership process. This is true despite the fact that leadership has been studied in almost every conceivable way. Stogdill (1974), for instance, found the definitions of leadership to be multiple and diverse. He found leadership treated variously as the focus of group processes, the study of personality and its effects, the act of inducing compliance, the exercise of influence, an act or behavior, a form of persuasion, a power relation, an instrument of goal achievement, a differentiated role, the initiation of structure, plus various combinations of all of the above. The common theme in all of these various approaches to leadership is that the focus of attention is on the leader as initiator, the "influencer" rather than the "influencee" if you will. Green and Mitchell (1979) contend that pertinent leadership findings fall into three primary, though not comprehensive, categories. These categories consist of styles of leadership, consequences of leadership, and the leader's behavior itself. Once again, all three categories seem to point to the leader as the initiator of action. The antecedents are ignored.

Only recently has an antecedent of leadership begun to emerge. This neglected view treats leadership as a response (Barrow, 1976; Farris & Lim, 1969; Herold, 1977; Lowin & Craig, 1968; Mitchell, 1979; Porter, Lawler & Hackman, 1975; Tosi, 1982). In particular, this approach treats leader behavior as a responsive behavior rather than as an initiating behavior.

In light of this emerging direction for leadership, this study has three major purposes. First, the study variables focus on the antecedents of leader behavior rather than the more traditional categories. In particular, it is suggested that the leader engages in a particular behavior as a response to



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his/her subordinate's behavior and/or situation. In other words, the leader's behavior is considered to be the dependent variable and the subordinate becomes the independent variable.

The second purpose of this study is to demonstrate the importance of what Tosi (1982) has called "a paradigm shift in the study of leadership" (p.222). The few studies that have dealt with leader behavior as a response to subordinates have mainly been conducted in a laboratory setting (Barrow, 1976; Farris & Lim, 1969; Herold, 1977). The present study deals with real leaders in real organizations and thus represents a transition from an artificial laboratory situation.

The third purpose of this study is to demonstrate the use and importance of observation measures as a supplement to the almost solely used standardized questionnaire measures in leadership research. This multiple method strategy can hopefully overcome some of the methodological problems that have plagued leadership research over the years.

Background on Leader Behavior as a Response

Two early and frequently cited studies established the basis for considering the leader's behavior as a response or dependent variable. Lowin and Craig (1968), through a manipulation of subordinate performance, found that leader behavior varied as a function of the subordinate's competence. Leader behavior was operationalized as closeness of supervision, consideration, and initiating structure. In a second major study, Farris and Lim (1969), using role-playing and a problem solving task, found leader behavior to be directly related to the performance level of the group.

Although there are a number of difficulties with this study, as well as with the Lowin and Craig study (e.g. see Herold, 1977 for a critical analysis), there is, nevertheless, some initial evidence that leaders may indeed respond to their subordinates in what they feel is an appropriate manner.

In an attempt to overcome the methodological problems of these two studies, (1977) Herold conducted a laboratory experiment involving 64 leader-subordinate dyads. This study was designed without confederates to encourage both subordinates and leaders to behave naturally. In addition to providing opportunities for variation in subordinate behavior, a procedure was provided to enable both the subordinate's behavior as well as the leader's reaction to the subordinate's behavior to be carefully monitored. Among other findings, Herold was able to show that leader's respond to satisfactory subordinate performance in a supportive fashion and to poor subordinate performance in a punitive fashion. Even though this study was methodologically sounder than the previous studies, it was still a laboratory study of very short duration and, of course, the subjects were aware that they were participating in a psychological experiment.

Barrow (1976), using 120 subjects in a simulated leadership situation, examined the effects of varying degrees of task complexity and worker performance levels in an attempt to gauge leader behavior. The two independent variables, subordinate performance and task complexity, were entered into a 2 X 2 factorial design involving high/low measures of each of the independent variables. Given that this study examined the manner in which high/low subordinate performance on a task of high/low complexity would impact on four styles of leadership behavior--task emphasis, punitive performance emphasis, supportive/considerate, and autocratic emphasis--the findings were quite interesting. It was found that leader behavior changes as a result of

varying both subordinate performance levels and environmental conditions. Thus, leaders in this sample did not maintain a single behavioral style. Instead, their behavior changed as subordinate performance levels increased or decreased. Barrow (1976) concluded that:

"The proposition that subordinate performance influences the behaviors a leader uses, raises the interesting possibility that the nature of effective leadership resides in the leader's subordinates" (p. 440).

In a recent conceptual article, Tosi (1982) argued that predictability of leader behavior should be treated as a dependent variable. In this way, research could focus on the amount of variance accounted for by specific influencing factors (e.g., subordinate behavior and/or the situation) as well as the various factor interactions. In a previous piece, Mitchell (1979) argued the same point when he pointed out that we have been looking at leadership in the wrong way. He contended that the process of leadership cannot be understood until the antecedents of leader behavior are understood.

With this background, there have been several attempts to refine and extend the idea of leader behavior as a response rather than as an initiation action. For example, Green (1975) in a study involving 179 managers, concluded that the relationship between instrumental leader behavior and performance may be reciprocal. In another study Green and Schriesheim (1980) conclude that in recently formed groups, leaders may adjust their supportive behavior in response to the level of group cohesion and arousal already present. These findings are consistent with the adaptive-reactive model of leadership (Osborn & Hunt, 1975) and the more recent multiple influence model of leadership (Hunt & Osborn, 1981).

Another supporting theory can be found in the Vertical Dyad Linkage approach (VDL) (Dansereau, Cashman, & Graen, 1973; Dansereau, Graen, & Haga, 1975; Dansereau, Alutto, Markham, & Dumas, 1982; Graen, Cashman, Ginsburg, & Schiemann, 1977; Liden & Graen, 1980). VDL theory suggest that leaders treat individual subordinates differently. For example using leader/subordinate dyads as the unit of analysis, the VDL approach would predict that certain subordinates who are committed to the organization, and who extend greater time and energy on behalf of the organization, are rewarded with more of the leader's positional resources (information, confidence, concern, etc.) than are subordinates not displaying these behaviors (Dansereau et. al., 1975).

The present study attempts to explore the relationship between leader behavior and subordinate behavior and/or the situation. Since most of the previous work in this area has been laboratory studies and/or highly reactive experimental designs, it seems appropriate at this time to do an exploratory field study using observational measures of leader behavior in natural settings. In particular, the following three specific hypotheses are proposed in order to test the general proposition that leader behavior can be accounted for by considering it as a response to subordinate's behavior and/or the situation.

Hypothesis 1. The first hypothesis is that subordinates who are both highly autonomous and satisfied with their supervisor will have their performance monitored and controlled to a lesser degree than subordinates who are low on autonomy and not satisfied with their supervisor.

Hypothesis 2. Second, it is hypothesized that highly autonomous subordinates who are committed to the organization will have their performance monitored and controlled by their supervisors to a

lesser extent than will uncommitted subordinates who are low on autonomy.

Hypothesis 3. The third hypothesis is that highly autonomous subordinates who perceive the organization to be effective will have their performance monitored and controlled to a lesser degree than subordinates who are low on autonomy and perceive the organization to be less effective.

Method

Sample

The sample for this study had 78 target managers and their subordinate groups consisting of 2 to 13 members each. These work groups were drawn from a wide diversity of organizations and represented both the public sector and private sector. There were manufacturing, service and retail firms, as well as government and health care organizations represented. The target managers were at all levels and performed all functions.

Measures

Observations of leader behavior in the natural setting were obtained through use of the LOS or Leadership Observation System (Luthans and Lockwood, 1983). Carefully trained participant observers were used to record the frequencies of specified leader behaviors. Although other behavioral data were also collected (the LOS has nine categories), that dealing with "Monitoring and Controlling Performance" or MCP was used in this study. The behavioral descriptors for this category include the frequency in which the leader inspects his/her subordinates' work and monitors their performance data (e.g., financial reports, computer printouts). This measure is very similar to Lowin and Craig's (1968) closeness of supervision measure of leader behavior.

The reliability of this observational approach to measuring the frequency of leader behavior in natural settings appears to be quite acceptable. For example, there was a 93.5 percent agreement between trained participant and outside observers (trained graduate students). Furthermore, Cohen's (1960) kappa statistic (the proportion of joint judgments in which there is agreement after chance agreement is excluded) yielded a highly significant ($p < .001$) .81 in the reliability analysis of the LOS. As far as validity, a multitrait-multimethod (MTMM) analysis found at least preliminary support for both convergent and discriminant validities when multiple rater sources were treated as multiple methods (Luthans & Lockwood, 1983).

Besides the target managers having their behaviors recorded on the LOS by participant observers, subordinates completed the Organizational Effectiveness Questionnaire (Mott, 1972) which had Cronbach alphas of .69 for the subscales of productivity and adaptability and .79 for overall effectiveness. These subordinates also completed the satisfaction with supervision scale of the Job Descriptive Index (Smith, Kendall, & Hulin, 1969, $\alpha = .78$); the autonomy scale of the Job Diagnostic Survey (Hackman & Oldham, 1975, $\alpha = .62$); the Organizational Commitment Questionnaire (Porter, Steers, Mowday & Boulian, 1974, $\alpha = .91$); and the consideration ($\alpha = .55$) and initiating structure ($\alpha = .87$) scales of the Leader Behavior Description Questionnaire-XII (Stodgill, Goode, & Day, 1962).

Procedures

For each of the 78 target leaders, the LOS, a one-page form with 9 broad behavioral categories including the one for managing and controlling performance, was completed at varying random times each morning and each afternoon over a five week period for a total of 50 observations. The participant observers were selected on the basis of their frequent contact and

interaction with the leader, as well as their thorough understanding of the work performed by the leader.

The observers went through a training workshop conducted by the researchers. This training began with an overview of the purposes of the research, followed by a detailed examination of each of the categories on the LOS. Next, observers were taught how to overcome possible observation errors (Thornton & Zorich, 1980) and how to be as unobtrusive as possible when recording behaviors. Finally, the observers were given an opportunity for extensive practice through modeling and role playing exercises. On a final extensive exercise that simulated most of the behavioral categories of the LOS, an evaluation found the trainees to be nearly perfect in their ability to record these behaviors.

The data obtained from the LOS and the subordinate questionnaire measures were analyzed using multiple regression techniques (Cohen & Cohen, 1975). For each target leader and his/her subordinate work group, mean levels of each relevant variable were computed. In addition, the proportion of total leader behaviors was calculated for each subscale of the LOS. The autonomy moderated relationship between the subordinate measures of effectiveness, commitment, and satisfaction with supervision, and the observed leader behavior of monitoring and controlling performance was analyzed by hierarchical multiple regression analysis of the interaction terms.

Results

Table 1 shows the means, standard deviations, and group mean correlations for all relevant study variables, except the LOS obtained measure of leader

behavior called monitoring and controlling behavior which is shown in Table 2. As shown, there is a significant ($p < .01$) correlation between the various

Insert Table 1 about here

subscales of organizational effectiveness and organizational commitment and satisfaction with supervision. In addition, the leader behavior of consideration (as measured by the LBDQ) is shown to correlate significantly with organizational commitment, satisfaction with supervision, and the overall effectiveness, adaptability and productivity scales of perceived organizational effectiveness subscales. Thus, there is at least preliminary, even though only correlational, support for the general proposition that leader behavior is related to subordinate's behavior/situation.

Insert Table 2 about here

Table 2 shows the mean correlations for the leader behavior of monitoring and controlling performance when it is considered as a proportion of total leader behavior. Significant correlations are found between this directly observed behavior and both perceived overall effectiveness and productivity and directional support for the other two subscales. Importantly, this finding gives multiple method support to the general proposition that leader behavior is related to subordinate's behavior/situation.

Insert Table 3, 4, and 5 about here

Support for all three hypotheses is shown in Tables 3, 4, and 5. For example, when autonomy is considered as a moderating variable between frequency of the observed leader behavior of monitoring and controlling performance (MCP) and satisfaction with supervision, a significant relationship is demonstrated. Even more interesting is the significance of autonomy as a moderating variable between subordinate organizational commitment and MCP as a percentage of the total observed leader behavior (see Table 4). The interaction between subordinate autonomy and organizational commitment produces a significant ($p < .01$) increment to R^2 of .1752. In similar fashion the interactions created by autonomy and each of the various subscales of perceived organizational effectiveness also produce significant increments to R^2 (See Table 5).

Insert Figures 1 and 2 about here

Figures 1 and 2 graphically illustrate the effects of different levels of autonomy on the relationship between MCP and each of the independent variables. For example, as both autonomy and organizational commitment increase, the leader response of monitoring and controlling performance decreases. Conversely, increasing organizational commitment, combined with low levels of autonomy, seems to produce higher levels of monitoring and controlling performance by the leader. The same type of findings are illustrated in Figures 1 and 2 for satisfaction with supervision and for each of the perceived effectiveness subscales. Thus, support for the general proposition and each of the hypotheses is demonstrated.

Discussion

This study was conducted with three rather broad purposes in mind. First, the study focused on the subordinate's behavior/situation as an antecedent to leader behavior. Second, leader behavior as a response was examined in natural settings rather than in the artificial laboratory settings used in most previous research. Third, the use of observational measurement techniques (LOS) as a multiple measures data gathering strategy was demonstrated.

The study provides support for the proposition that leader behavior may be a response to subordinate's behavior/situation. Although simple correlational analysis can give only tentative support, the multiple regression analysis shows that highly autonomous subordinates who are more satisfied with their supervisor tend to have their performance monitored and controlled to a lesser degree by their boss. Thus, the independence that they desire is apparently given. Conversely, subordinates low on autonomy, who are satisfied with their supervisor, tend to receive more monitoring and controlling behaviors from their boss that they apparently want and need.

A second important finding of this study is the autonomy moderated relationship between mean organizational commitment of subordinates and observed monitoring and controlling behaviors of managers. As subordinates who are committed to the organization increase in autonomy, they find their performance checked and controlled to a lesser degree. A similar result is obtained by subordinates, high on autonomy, who perceive the organization to be quite effective. That is, for increases in each of the perceived organizational effectiveness subscales, subordinates displaying high levels of autonomy experienced less and less monitoring and controlling of their performance. Since the converse of each of the above findings seem to also

occur, it appears that leaders respond to different subordinate's behavior/situation differently. This finding is consistent with earlier laboratory findings (e.g., Barrow, 1976).

On balance, the findings of this study lend support to earlier laboratory research. The fact that this research was conducted in natural settings offers an important extension for the study of leadership as a response. On the other hand, the findings of this study represent only tentative evidence because an experimental design with more evidence for the direction of causality between subordinate and leader behavior was not employed. Yet, by using multiple measures, especially the LOS, some of the problems with previous experimental research was overcome in this study. The findings from this study will hopefully stimulate field experiments using multiple methods (including observationally gathered data in natural settings) to further examine subordinate influence on leader behavior.

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TABLE 1
 DESCRIPTIVE STATISTICS AND GROUP MEAN
 CORRELATIONS AMONG STUDY VARIABLES¹

VARIABLES	M	SD	Satisfaction With				Initiating Structure
			Commitment	Supervision	Autonomy	Consideration	
Commitment	3.75	.49					
Satisfaction With Supervision	37.00	6.58	.41**				
Autonomy	4.04	.57	.35**	.22			
Consideration	3.30	.29	.43**	.55**	.01		
Initiating Structure	3.56	.46	.20	.34**	.04	.48**	
Overall Effectiveness	3.84	.39	.38**	.49**	.16	.39**	.33**
Adaptability	3.72	.46	.31**	.37**	.04	.36**	.27*
Flexibility	4.16	.61	.28*	.50**	.41**	.14	.22*
Productivity	3.90	.42	.37**	.45**	.16	.37**	.31**

N=78

** p<.01

* p<.05

¹ See Table 2 for Monitoring and Controlling Performance

TABLE 2
 DESCRIPTIVE STATISTICS AND MEAN CORRELATIONS FOR MONITORING AND CONTROLLING
 PERFORMANCE AS A PERCENTAGE OF TOTAL OBSERVED LEADER BEHAVIOR

VARIABLES	Satisfaction		Overall	Adapt	Flexibility	Productivity	Consider	Structure	M	Sd
	Commit	Super								
Monitoring and Controlling Performance	.11	.04	.11	.18	.212	.28*	.001	-.07	.12	.07

* $p < .05$
 N=78

TABLE 3
 HIERARCHICAL REGRESSION ANALYSIS OF SATISFACTION WITH SUPERVISION AND AUTONOMY
 AS PREDICTORS OF THE LEADER BEHAVIOR OF MONITORING AND CONTROLLING PERFORMANCE

SETS OF INDEPENDENT VARIABLES	Cumulative R^2	F	df	p	Increment To R^2	F	df	p
Satisfaction With Supervision And Autonomy	.0804	3.277	2,75	.025				
Satisfaction With Supervision X Autonomy	.1361	3.887	3,74	.0064	.0557	4.77	1,74	<.05

TABLE 4
 HIERARCHICAL REGRESSION ANALYSIS OF AUTONOMY AND ORGANIZATIONAL COMMITMENT
 AS PREDICTORS OF THE LEADER BEHAVIOR OF MONITORING AND CONTROLLING
 PERFORMANCE AS A PERCENTAGE OF TOTAL OBSERVED LEADER BEHAVIOR

SETS OF INDEPENDENT VARIABLES	Cumulative R^2	F	df	p	Increment To R^2	F	df	p
Autonomy And Commitment	.0721	2.914	2,75	.039				
Autonomy X Commitment	.2473	8.105	3,74	.0001	.1752	17.22	1,74	<.01

TABLE 5
 HIERARCHICAL REGRESSION ANALYSIS OF AUTONOMY AND PERCEIVED ORGANIZATIONAL
 EFFECTIVENESS AS PREDICTORS OF THE LEADER BEHAVIOR OF MONITORING AND
 CONTROLLING PERFORMANCE AS A PERCENTAGE OF TOTAL OBSERVED LEADER BEHAVIOR

SETS OF INDEPENDENT VARIABLES	Cumulative R^2	F	df	p	Increment To R^2	F	df	p
Overall Effectiveness And Autonomy	.0759	3.082	2,75	.032				
Overall Effectiveness X Autonomy	.1913	5.835	3,74	.0004	.1154	10.56	1,74	<.01
Productivity And Autonomy	.0971	4.035	2,75	.01				
Productivity X Autonomy	.2019	6.241	3,74	.0002	.1048	9.71	1,74	<.01
Adaptability And Autonomy	.0601	2.399	2,75	.073				
Adaptability X Autonomy	.1446	4.171	3,74	.004	.0845	7.31	1,74	<.01
Flexibility And Autonomy	.0553	2.196	2,75	.094				
Flexibility X Autonomy	.1198	3.357	3,74	.014	.0645	5.42	1,74	<.05

FIGURE 1
PLOTS OF INTERACTIONS

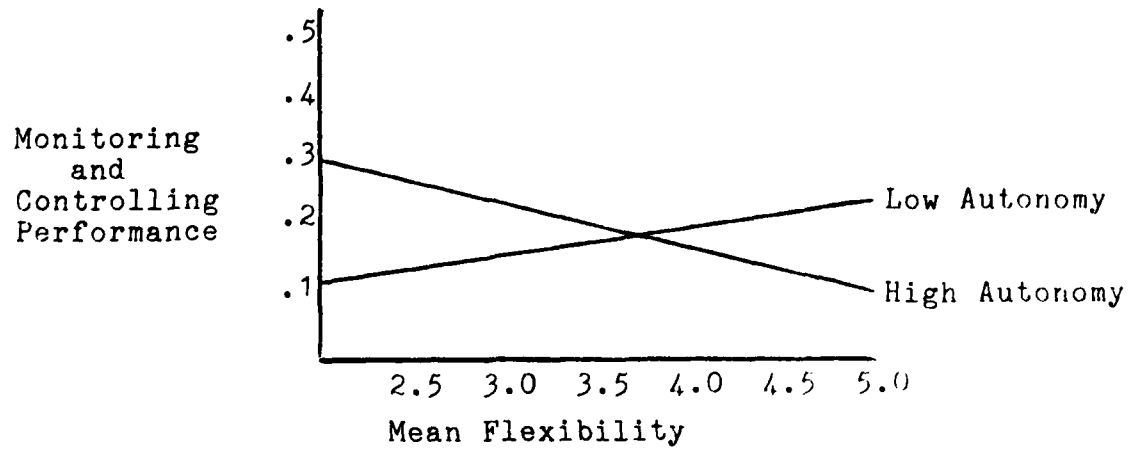
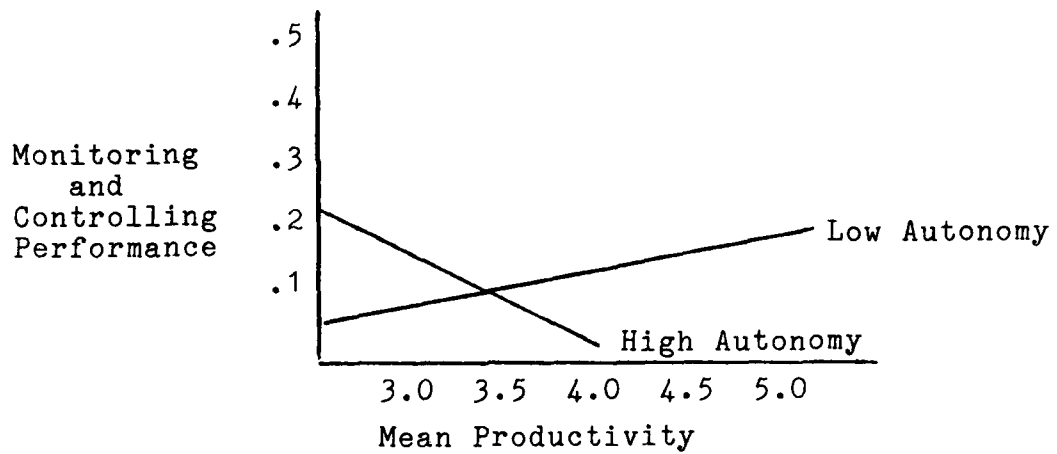
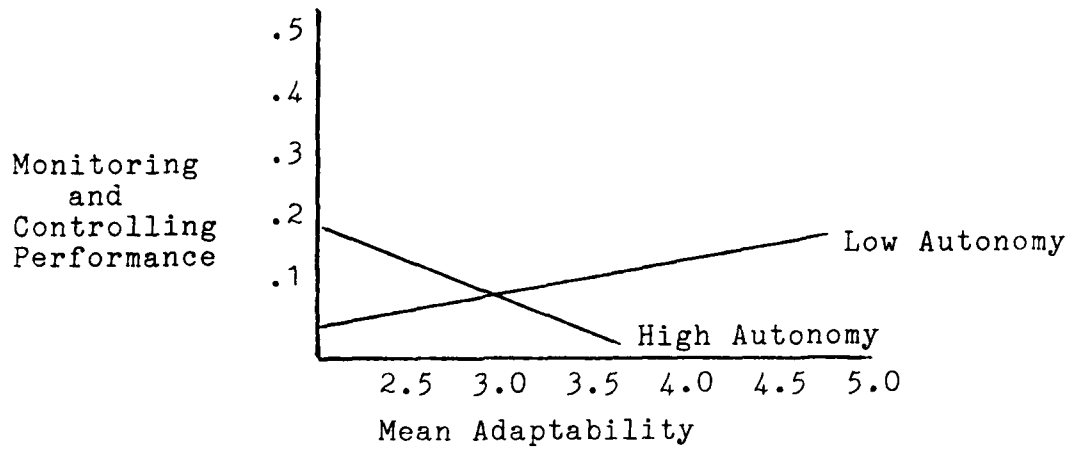
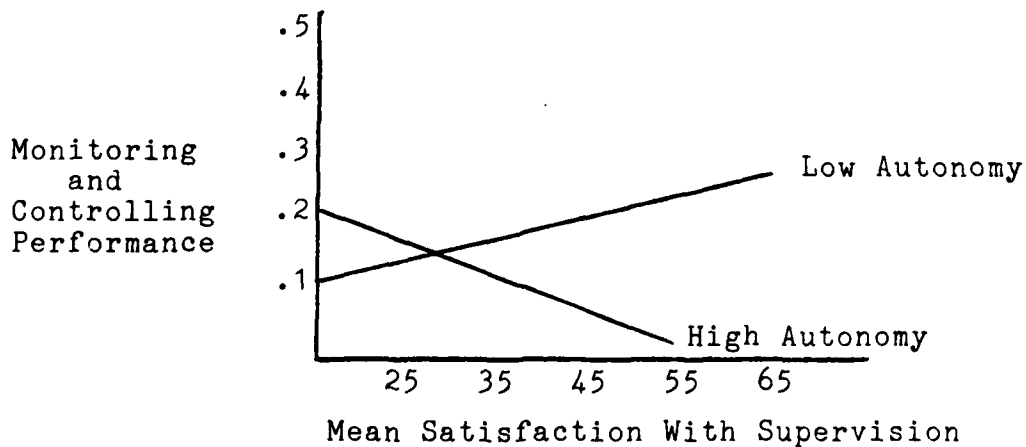
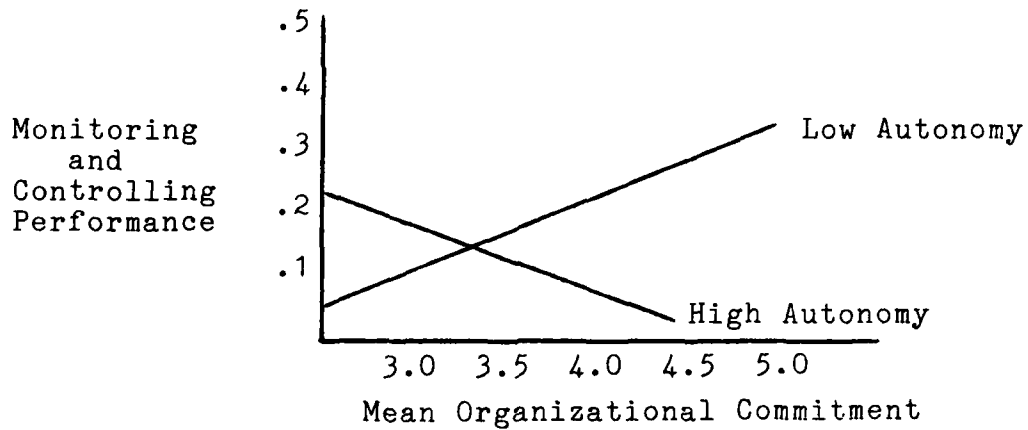
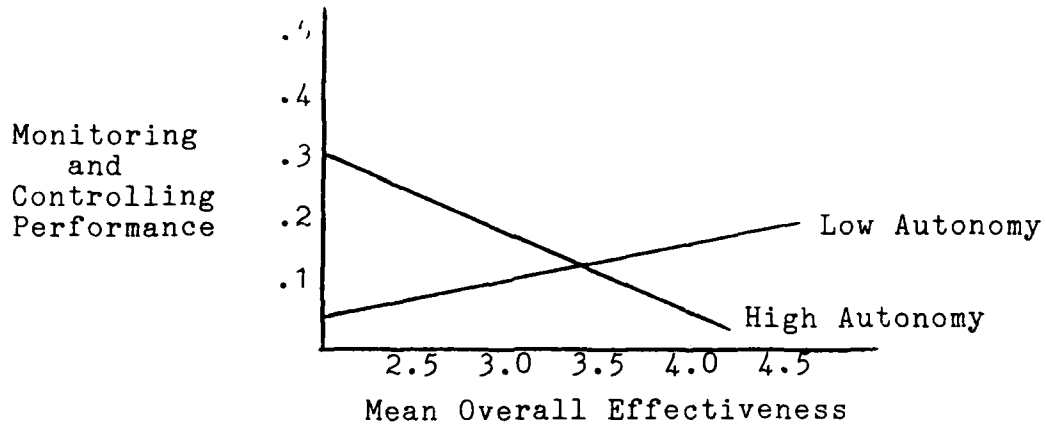


FIGURE 2

PLOTS OF INTERACTIONS



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LIST 3
OPNAV

LIST 4
NAVMAT & NPRDC

Deputy Chief of Naval Operations
(Manpower, Personnel, and Training)
Head, Research, Development, and
Studies Branch (Op-115)
1812 Arlington Annex
Washington, DC 20350

Director
Civilian Personnel Division (OP-14)
Department of the Navy
1803 Arlington Annex
Washington, DC 20350

Deputy Chief of Naval Operations
(Manpower, Personnel, and Training)
Director, Human Resource Management
Plans and Policy Branch (Op-150)
Department of the Navy
Washington, DC 20350

Deputy Chief of Naval Operations
(Manpower, Personnel, and Training)
Director, Human Resource Management
Plans and Policy Branch (Op-150)
Department of the Navy
Washington, DC 20350

Chief of Naval Operations
Head, Manpower, Personnel, Training
and Reserves Team (Op-964D)
The Pentagon, 4A478
Washington, DC 20350

Chief of Naval Operations
Assistant, Personnel Logistics
Planning (Op-987H)
The Pentagon, 5D772
Washington, DC 20350

NAVMAT

Program Administrator for Manpower,
Personnel, and Training
MAT 0722 A. Rubenstein
800 N. Quincy Street
Arlington, VA 22217

Naval Material Command
Management Training Center
NAVMAT 09M32
Jefferson Plaza, Bldg #2, Rm 150
1421 Jefferson Davis Highway
Arlington, VA 20360

Naval Material Command
NAVMAT-00K J.W. Tweeddale
Washington, DC 20360

Naval Material Command
NAVMAT-00KB
Washington, DC 20360

Naval Material Command
(MAT-03)
Crystal Plaza #5 J.E. Colvard
Room 236
2211 Jefferson Davis Highway
Arlington, VA 20360

NPRDC

Commanding Officer
Naval Personnel R&D Center
San Diego, CA 92152

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Naval Personnel R&D Center
San Diego, CA 92152
Dr. Robert Penn (1 copy)
Ed Aiken (1 copy)

Navy Personnel R&D Center
Washington Liaison Office
Building 200, 2N
Washington Navy Yard
Washington, DC 20374

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LIST 5
BUMED

LIST 6
NAVAL ACADEMY AND NAVAL POSTGRADUATE SC

Commanding Officer
Naval Health Research Center
San Diego, CA 92152

CDR William S. Maynard
Psychology Department
Naval Regional Medical Center
San Diego, CA 92134

Naval Submarine Medical
Research Laboratory
Naval Submarine Base
New London, Box 900
Groton, CT 06349

Director, Medical Service Corps
Bureau of Medicine and Surgery
Code 23
Department of the Navy
Washington, DC 20372

Naval Aerospace Medical
Research Lab
Naval Air Station
Pensacola, FL 32508

Program Manager for Human
Performance (code 44)
Naval Medical R&D Command
National Naval Medical Center
Bethesda, MD 20014

Navy Medical R&D Command
ATTN: Code 44
National Naval Medical Center
Bethesda, MD 20014

Naval Postgraduate School
ATTN: Dr. Richard S. Elster - (code 012)
Department of Administrative Sciences
Monterey, CA 93940

Naval Postgraduate School
ATTN: Professor John Senger
Operations Research and
Administrative Science
Monterey, CA 93940

Superintendent
Naval Postgraduate School
Code 1424
Monterey, CA 93940

Naval Postgraduate School
ATTN: Dr. James Arima
Code 54-Aa
Monterey, CA 93940

Naval Postgraduate School
ATTN: Dr. Richard A. McGonigal
Code 54
Monterey, CA 93940

U.S. Naval Academy
ATTN: CDR J. M. McGrath
Department of Leadership and Law
Annapolis, MD 21402

Professor Carson K. Eoyang
Naval Postgraduate School, Code 54EG
Department of Administration Sciences
Monterey, CA 93940

Superintendent
ATTN: Director of Research
Naval Academy, U.S.
Annapolis, MD 21402

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J M...

LIST 7
HRM

List 7 (Continued)

Officer in Charge
Human Resource Management Detachment
Naval Air Station
Alameda, CA 94591

Officer in Charge
Human Resource Management Detachment
Naval Submarine Base New London
P.O. Box 81
Groton, CT 06340

Officer in Charge
Human Resource Management Division
Naval Air Station
Mayport, FL 32228

Commanding Officer
Human Resource Management Center
Pearl Harbor, HI 96860

Commander in Chief
Human Resource Management Division
U.S. Pacific Fleet
Pearl Harbor, HI 96860

Officer in Charge
Human Resource Management Detachment
Naval Base
Charleston, SC 29408

Commanding Officer
Human Resource Management School
Naval Air Station Memphis
Millington, TN 38054

Human Resource Management School
Naval Air Station Memphis (96)
Millington, TN 38054

Commanding Officer
Human Resource Management Center
1300 Wilson Boulevard
Arlington, VA 22209

Commanding Officer
Human Resource Management Center
5621-23 Tidewater Drive
Norfolk, VA 23511

Commander in Chief
Human Resource Management Division
U.S. Atlantic Fleet
Norfolk, VA 23511

Officer in Charge
Human Resource Management Detachment
Naval Air Station Whidbey Island
Oak Harbor, WA 98278

Commanding Officer
Human Resource Management Center
Box 23
FPO New York 09510

Commander in Chief
Human Resource Management Division
U.S. Naval Force Europe
FPO New York 09510

Officer in Charge
Human Resource Management Detachment
Box 60
FPO San Francisco 96651

Officer in Charge
Human Resource Management Detachment
COMNAVFORJAPAN
FPO Seattle 98762

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LIST 8
NAVY MISCELLANEOUS

Naval Military Personnel Command (2 copies)
HRM Department (NMPC-6)
Washington, DC 20350

LIST 9
USMC

Naval Training Analysis
and Evaluation Group
Orlando, FL 32813

Headquarters, U.S. Marine Corps
Code MPI-20
Washington, DC 20380

Commanding Officer
ATTN: TIC, Bldg. 2068
Naval Training Equipment Center
Orlando, FL 32813

Headquarters, U.S. Marine Corps
ATTN: Dr. A. L. Slafkosky,
Code RD-1
Washington, DC 20380

Chief of Naval Education
and Training (N-5)
Director, Research Development,
Test and Evaluation
Naval Air Station
Pensacola, FL 32508

Education Advisor
Education Center (E031)
MCDEC
Quantico, VA 22134

Chief of Naval Technical Training
ATTN: Dr. Norman Kerr, Code 017
NAS Memphis (75)
Millington, TN 38054

Commanding Officer
Education Center (E031)
MCDEC
Quantico, VA 22134

Navy Recruiting Command
Head, Research and Analysis Branch
Code 434, Room 8001
801 North Randolph Street
Arlington, VA 22203

Commanding Officer
U.S. Marine Corps
Command and Staff College
Quantico, VA 22134

Commanding Officer
USS Carl Vinson (CVN-70)
Newport News Shipbuilding &
Drydock Company
Newport News, VA 23607

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LIST 13
AIR FORCE

LIST 12
ARMY

Air University Library/LSE 76-443
Maxwell AFB, AL 36112

COL John W. Williams, Jr.
Head, Department of Behavioral
Science and Leadership
U.S. Air Force Academy, CO 80840

MAJ Robert Gregory
USAFA/DFBL
U.S. Air Force Academy, CO 80840

AFOSR/NL (Dr. Fregly)
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LTCOL Don L. Presar
Department of the Air Force
AF/MPXHM
Pentagon
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Technical Director
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AFMPC/MPCYPR
Randolph AFB, TX 78150

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ATTN: AFPR-IR
Ft. McPherson, GA 30330

Army Research Institute
Field Unit - Leavenworth
P.O. Box 3122
Fort Leavenworth, KS 66027

Technical Director
Army Research Institute
5001 Eisenhower Avenue
Alexandria, VA 22333

Director
Systems Research Laboratory
5001 Eisenhower Avenue
Alexandria, VA 22333

Director
Army Research Institute
Training Research Laboratory
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Science and Leadership
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