This report lists the title and provides abstracts for the 18 technical reports completed under this contract.

Abstract. A review of both laboratory and field studies on the effects of setting goals when performing a task found that in 90% of the studies specific, challenging goals lead to higher performance than easy goals, "do your best" goals, or no goals. Goals affect performance by directing attention, mobilizing effort, increasing persistence, and motivating strategy development. Goal setting is most likely to improve task performance when the goals are specific and sufficiently challenging; the subjects have sufficient ability (and ability differences are controlled); feedback is provided to show progress in relation to the goal; rewards such as money are given for goal attainment; the experimenter or manager is supportive; and assigned goals are accepted by the individual. No reliable individual differences have emerged in goal setting studies, probably because the goals were typically assigned rather than self-set. Need for achievement and self-esteem may be the most promising individual difference variables.

Published in Psychological Bulletin, 1981, 90, 125-152.


Abstract. A three stage process is proposed for enhancing productivity through the utilization of human resources. The stages comprising the process are: (1) identifying poor performance; (2) deciding what causes poor performance and (3) coping with poor performance. Together these strategies form a performance enhancement system.

Strategies for identifying a poor performance include examining discrepancies between goals and measured achievement, making comparisons across people, units of organizations, and making comparisons across time.

A model for diagnosing and responding to poor performance is presented based on attribution theory. Empirical results in support of the model are discussed.

Steps for coping with poor performance include (1) defining performance behaviorally, (2) training managers to minimize rating errors, (3) setting specific hard goals, and (4) ensuring that the consequences of working toward and attaining the goals are positive for the employee.

"The Ideas of Frederick W. Taylor: An Evaluation." Edwin A. Locke

Abstract. The ideas and techniques of Frederick W. Taylor, the founder of Scientific Management, were examined with respect to their validity and their degree of acceptance in modern management. With respect to the principle of scientific decision-making and techniques such as: time and motion study, standardization, goal setting with feedback, money as a motivator, management responsibility for training, scientific selection, the shortened work week and rest pauses, Taylor's views were fundamentally correct and have been generally accepted. With respect to individualized work and the principle of labor-management cooperation, his views were probably only partially correct and have been only partially accepted. Criticisms of Taylor with respect to his alleged: inadequate view of motivation, ignorance of social factors, authoritarianism, treatment of men as machines, exploitation of workers, anti-unionism, and personal dishonesty are predominantly or wholly false. The accusation concerning over-specialization is only partially justified. Generally Taylor's contributions and his genius have not been understood or appreciated by contemporary writers.


"Goal Setting." Edwin A. Locke

Abstract. This article briefly summarizes the history of goal setting and the key elements of goal setting, including: goal attributes, goal mechanisms, goal choice, goal commitment, support elements, benefits and pitfalls and practical considerations.


Abstract. A government agency wished to define effective supervisory behavior. Fifty-seven government employees participated in the job analysis. The employees were randomly assigned to one of three setting conditions, namely self-set, participatively set, and assigned goals. The task required each individual to brainstorm individually job behaviors that he or she had seen make the difference between effective and ineffective job behavior as a supervisor. Goals were set in terms of the number of behaviors to be listed within 20 minutes. There was no significant difference in goal difficulty between those with participatively set goals and those with self-set goals. Goal difficulty was held constant between the participative and assigned goal conditions by imposing a goal agreed upon by an employee in the participative condition upon an employee in the assigned condition. There was no

Published in Personnel Psychology, 1982, 35, 399-404.
significant difference among the three goal setting conditions regarding goal acceptance or actual performance. This was true regardless of employee age, education, position level, years as a supervisor, or time employed in the public sector. The correlation between goal difficulty and performance was .62, .69, and .74, respectively, in the participative, self-set, and assigned goal conditions.

"The Effects of Participation and Goal Difficulty on Performance."
Gary P. Latham, Timothy P. Steele, and Lise M. Saari.

Abstract. Previous research comparing the effects of assigned versus participatively set goals on performance were essentially tests of the null hypothesis in that goal difficulty level was not systemically manipulated. The present laboratory study investigated the effects of assigned versus participatively set goals, and the effects of varying goal difficulty level on an arithmetic task. Eighty-six college students were assigned to either a participative goal condition or one of three assigned goal conditions. In two of the assigned goal conditions participants were assigned goals equal to those set in the participative condition, the difference being that individuals in one group were assigned goals at random and those in the other group were assigned goals on the basis of their premeasure scores. Participants in the third assigned goal condition were randomly assigned a goal in the top quartile of the goals set participatively. As hypothesized, individuals with hard assigned goals had higher performance than peers with lower goals set in a participative manner. Contrary to modern organizational theory, individuals with participatively set goals did not have higher performance than those with assigned goals of equal difficulty. Personality traits were not found to moderate the effects of goal setting on performance.


"Improving Productivity Through Goal Setting With Union Workers."
Gary P. Latham and Lise M. Saari.

Abstract. Interviews were conducted with union business agents on conditions necessary for their toleration of a goal setting program. Subsequent to the interviews, goals were assigned to 39 truck drivers. The results were analyzed using a time series design that included a comparison group (N=35). The results showed a significant increase in productivity for the drivers who received specific goals. When the conditions necessary for the union's toleration of the goal setting program were no longer met, there was a wildcat strike.

To be published in Personnel Psychology.

Abstract. A one minute goal setting study replicated most of the basic phenomena of goal setting: success was related to satisfaction; goal level was negatively related to expectancy; expectancy was positively related to goal acceptance; expectancy and goal acceptance were not related to performance when goal level was controlled. Goal level was significantly related to performance for the sample as a whole. A unique feature of the present study was the use of 14 different goal levels including levels far beyond the subjects' capacity. It was found that at impossible goal levels, goals were not related to performance. For goal levels reasonably close to the subjects' ability, goal level and performance were linearly related. Thus the overall relationship was curvilinear.

Published under the title "Relation of Goal Level to Performance Level With a Short Work Period and Multiple Goal Levels." Journal of Applied Psychology, 1982, 67, 512-514.

"Comment on Neider: The Issue of Interpretation of Experiments." Edwin A. Locke

Abstract. It is argued that Neider's study claiming to show the beneficial effects of participation on store sales is open to other interpretations, as are many studies of participative decision making. Neider's study actually had four independent variables: participation; a sales plan; goal setting; and incentives. The first two constituted one condition; the second two another; and all four another. Thus no definitive interpretation of the results is possible. However, an interpretation that is equally, if not more, plausible than Neider's is that goal setting and incentives do not improve performance unless there is an adequate action plan. Participation may be one method of developing and/or gaining commitment to such plans. The general issue of interpretation of experiments is discussed.

Published in Organizational Behavior and Human Performance, 1981, 28, 425-430.

"The Interaction of Goal Difficulty/Specificity and Feedback on Task Performance." Karyll N. Shaw, Edwin A. Locke, Philip Bobko and Brenda Beitzell

Abstract. Two experiments tested the hypothesis that the combination of specific, hard goals and knowledge of results (KR) will lead to better performance than do-best goals with and without KR and specific, hard goals without KR. It was also predicted that the latter three conditions would not differ significantly. The first study yielded equivocal support for the predictions, but these results were attributed to possible flaws in the design of the study. A second study which eliminated these potential flaws confirmed the predictions. One intriguing result was that specific hard goal-KR subjects, despite performing best on the task
as a whole, performed worst on one sub-element of the task which reflected degree of incidental learning. The implications of the findings are discussed.


Abstract. A field study was conducted with 12 mountain beaver trappers to examine the effects of two schedules of monetary reinforcement (continuous and VR-4) on job performance, and to identify the reinforcing characteristics of these two reinforcement schedules. Consistent with operant theory, performance was higher on the VR-4 schedule than on the continuous schedule. Of major interest was the finding that 9 of the 12 trappers reported setting specific goals for themselves as a result of the incentive program. Those trappers who set goals had higher performance than those who did not have specific goals. Interviews and questionnaires indicated that the VR-4 schedule may have been effective because it was perceived by the workers as containing many job enrichment variables such as bringing about feelings of accomplishment, recognition, variety, and feedback.


Abstract. It is argued that both Theory X and Theory Y and Maslow's theory, which is taken as the foundation of Theory Y, are inadequate to account for the basic phenomena of work motivation. Theory V (based on the concept of values) is proposed as alternative. This theory consists of six propositions concerned with the issues of: the role of needs and values in guiding action; the role of value attainment in job satisfaction and productivity; the role of money and goal setting as motivators of job performance; techniques for motivating the utilization of knowledge in implementing goals; and the role of social factors as motivators and demotivators of job performance.


Abstract. A 3 x 2 factorial design was used to examine the motivational effects of participation in decision making (PDM) versus goal setting on performance. Seventy-two college students were randomly assigned to
one of six conditions. The task selected for the study was a toy assembly project adapted from a business game used in an assessment center. The motivational effects of PDM were isolated from the cognitive by imposing the ideas generated through PDM on another condition. Assigned/participative goals were set in terms of the number of toys that could be produced within a 20-minute period. Goal difficulty was held constant between the two conditions. The results showed a significant main effect for goal setting only. Both forms of goal setting led to performance that was significantly higher than that which occurred in the "do best" condition. The interaction effect between goal setting and decision making was not significant.

To be published in Academy of Management Journal.

ONR-GS-14 "The Relationship of Outcome Valence, Personal Goal and Commitment to Performance When No Goals are Assigned." Edwin A. Locke and Karyll N. Shaw.

Abstract. A 3 x 3 factorial design examined the effects of three degrees of feedback/feedback (given before task performance) and three levels of objective probability of success on task performance. Subjective expectancy, personal goal, valence of winning, and commitment to winning were also measured. The experimental manipulations had no effect on performance, indicating once again the extreme fragility of Atkinson's (1958) widely cited finding of a curvilinear relationship between probability of success and performance. Personal goal, valence and commitment, however, were significantly related to performance with commitment showing the strongest relationship. This is the first goal-setting study to obtain a significant effect for commitment, a finding which may be the result of goals (including the goal of winning) being self-set rather than assigned.


Abstract. Subjects were assigned goals, ranging from easy to impossible, on one trial and then allowed to choose their own goals on the next trial. Subjects felt a high degree of freedom of choice on the latter trial and tended to choose harder goals if their earlier assigned goals had been easy and to choose easier goals if their previously assigned goals had been hard. Despite these changes, subjects were heavily influenced in their self-set goals by their previously assigned goals. Performance on both trials was determined by ability, goal level, goal squared (quadratic trend), goal acceptance, and by a goal-ability interaction.

Abstract. Two studies were conducted to test the validity of the situational interview. In the first study a concurrent validity strategy showed that there is a correlation between what people in an interview setting say they do on the job and what they actually do on the job as reported by both peers and supervisors. Furthermore, a situational approach to interviewing appears preferable to asking people direct questions about their past experiences. The second study used a predictive validity strategy to test the theoretical premise of the situational interview, namely, that intentions predict behavior.


Abstract. A 3x2x2 factorial design was used to study the performance effects of monetary incentives that were administered on either a continuous, VR-2, or VR-4 reinforcement schedule with or without a specific assigned goal for individuals who were either high or low in their need for achievement. Main effects were found for goal setting and reward, but not for need for achievement. No interaction effects were obtained. People who were paid on either the VR-4 schedule or the continuous schedule performance significantly better than those who were on the VR-2 schedule. There was no significant difference between the VR-4 and continuous reinforcement conditions.


Abstract. This study examined the effect of self-efficacy, goals, and task strategies on goal choice and task performance. Self-efficacy and task strategies were manipulated through training. Ability, past performance and self-efficacy were the major predictors of goal choice. Ability, self-efficacy, goals and task strategies were all related to task performance. Self-efficacy was more strongly related to past performance than to future performance but was still a significant predictor of future performance when past performance was controlled. Self-efficacy ratings for moderate to difficult levels of performance were the best predictors of future performance. This finding was
"replicated" when two previous goal setting studies, which had found no positive expectancy-performance relationship across goal groups, were re-analyzed. Expectancy ratings within goal groups were often positively related to performance, and the ratings within the moderate to high goal groups were more highly related to performance than those within the easy or impossible goal groups. It is suggested that the concept of self-efficacy might provide an integrating mechanism between the goal setting and social learning theory approaches to task performance.

Also published under this contract:

LIST 1
MANDATORY

Defense Technical Information Center (12 copies)
ATTN: DTIC DDA-2
Selection and Preliminary Cataloging Section
Cameron Station
Alexandria, VA 22314

Library of Congress
Science and Technology Division
Washington, DC 20540

Office of Naval Research (3 copies)
Code 4420E
800 N. Quincy Street
Arlington, VA 22217

Naval Research Laboratory (6 copies)
Code 2627
Washington, DC 20375

Office of Naval Research
Director, Technology Programs
Code 200
800 N. Quincy Street
Arlington, VA 22217

Office of Naval Research
Code 440
800 N. Quincy Street
Arlington, VA 22217

Office of Naval Research
Code 442PT
800 N. Quincy Street
Arlington, VA 22217

Office of Naval Research
Code 442EP
800 N. Quincy Street
Arlington, VA 22217
LIST 2
ONR FIELD

ONR Western Regional Office
1030 E. Green Street
Pasadena, CA 91106

Psychologist
ONR Western Regional Office
1030 E. Green Street
Pasadena, CA 91106

ONR Regional Office
536 S. Clark Street
Chicago, IL 60605

Psychologist
ONR Regional Office
536 S. Clark Street
Chicago, IL 60605

Psychologist
ONR Eastern Regional Office
495 Summer Street
Boston, MA 02210

ONR Eastern/Central Regional Office
495 Summer Street
Boston, MA 02210
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
LIST 4
NAVMAT & NPRDC

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
MAT-00K & MAT-00KB (1 copy each)
(J. W. Tweeddale)
OASN(SNL)
Crystal Plaza #5
Room 236
Washington, DC 20360

Naval Material Command
MAT-03
(J. E. Colvard)
Crystal Plaza #5
Room 236
Washington, DC 20360

NPRDC

Commanding Officer (3 copies)
Navy Personnel R&D Center
San Diego, CA 92152

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

NPRDC

Dr. Robert Penn (1 copy)
Dr. Ed Aiken (1 copy)
San Diego, CA 92152
LIST 6
NAVAL ACADEMY AND NAVAL POSTGRADUATE SCHOOL

Naval Postgraduate School
ATTN: Dr. Richard S. Elster
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. McConigal
Code 54
Monterey, CA 93940

U.S. Naval Academy
ATTN: CDR J. H. 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
Headquarters, FORSCOM
ATTN: AFPR-HR
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
5001 Eisenhower Avenue
Alexandria, VA 22333

Dr. T. O. Jacobs
Code PERI-IM
Army Research Institute
5001 Eisenhower Avenue
Alexandria, VA 22333

COL Howard Prince
Head, Department of Behavior Science and Leadership
U.S. Military Academy, New York 10996
LIST 15
CURRENT CONTRACTORS

Dr. Richard D. Arvey
University of Houston
Department of Psychology
Houston, TX 77004

Bruce J. Bueno De Mesquita
University of Rochester
Dept of Political Science
Rochester, NY 14627

Dr. Stuart W. Cook
Institute of Behavioral Science #6
University of Colorado
Box 482
Boulder, CO 80309

Dr. L. L. Cummings
Kellogg Graduate School of Management
Northwestern University
Nathaniel Leverone Hall
Evanston, IL 60201

Dr. Henry Emurian
The Johns Hopkins University
School of Medicine
Department of Psychiatry and
Behavioral Science
Baltimore, MD 21205

Dr. John P. French, Jr.
University of Michigan
Institute for Social Research
P.O. Box 1248
Ann Arbor, MI 48106

Dr. Paul S. Goodman
Graduate School of Industrial
Administration
Carnegie-Mellon University
Pittsburgh, PA 15213
LIST 15 (Continued)

Dr. J. Richard Hackman
School of Organization and Management
Box 1A, Yale University
New Haven, CT 06520

Dr. Lawrence R. James
School of Psychology
Georgia Institute of Technology
Atlanta, GA 30332

Allan P. Jones
University of Houston
4800 Calhoun
Houston, TX 77004

Dr. Frank J. Landy
The Pennsylvania State University
Department of Psychology
417 Bruce V. Moore Building
University Park, PA 16802

Dr. Bibb Latane
The Ohio State University
Department of Psychology
404 B West 17th Street
Columbus, OH 43210

Dr. Edward E. Lawler
University of Southern California
Graduate School of Business Administration
Los Angeles, CA 90007

Dr. Edwin A. Locke
College of Business and Management
University of Maryland
College Park, MD 20742

Dr. Fred Luthans
Regents Professor of Management
University of Nebraska - Lincoln
Lincoln, NE 68588
LIST 15 (Continued)

Dr. R. R. Mackie
Human Factors Research
A Division of Canyon Research
5775 Dawson Street
Goleta, CA 93017

Dr. William H. Mobley
College of Business Administration
Texas A&M University
College Station, TX 77843

Dr. Thomas H. Ostrom
The Ohio State University
Department of Psychology
116E Stadium
404C West 17th Avenue
Columbus, OH 43210

Dr. William G. Ouchi
University of California, Los Angeles
Graduate School of Management
Los Angeles, CA 90024

Dr. Irwin G. Sarason
University of Washington
Department of Psychology, NI-25
Seattle, WA 98195

Dr. Benjamin Schneider
Department of Psychology
Michigan State University
East Lansing, MI 48824

Dr. Edgar H. Schein
Massachusetts Institute of Technology
Sloan School of Management
Cambridge, MA 02139

H. Ned Seelye
International Resource Development Inc.
P.O. Box 721
La Grange, IL 60525
LIST 15 (Continued)

Dr. H. Wallace Sinaiko
Program Director, Manpower Research
and Advisory Services
Smithsonian Institution
801 N. Pitt Street, Suite 120
Alexandria, VA 22314

Dr. Richard M. Steers
Graduate School of Management
University of Oregon
Eugene, OR 97403

Dr. Siegfried Streufert
The Pennsylvania State University
Department of Behavioral Science
Hilton S. Hershey Medical Center
Hershey, PA 17033

Dr. James R. Terborg
University of Oregon
West Campus
Department of Management
Eugene, OR 97403

Dr. Harry C. Triandis
Department of Psychology
University of Illinois
Champaign, IL 61820

Dr. Howard M. Weiss
Purdue University
Department of Psychological Sciences
West Lafayette, IN 47907

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