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Volume 6  
February 1976

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# Catalog of Selected Documents in Psychology

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## GENERAL PSYCHOLOGY

MS. 1164 (82 pages/paper: \$7; fiche: \$2)

### **Proceedings of the Twenty-First Annual Meeting of the Southeastern Psychological Association**

ELLEN KIMMEL, *Secretary-Treasurer*  
*University of South Florida*

The Twenty-First Annual Meeting of the Southeastern Psychological Association was held March 27-29, 1975, in Atlanta, Georgia. Along with the report of the Secretary/Treasurer, an archival record of the substantive meetings of the Convention Program is presented.

## METHODOLOGY AND RESEARCH TECHNOLOGY

MS. 1165 (111 pages/paper: \$8; fiche: \$4)

### **Learning Strategy Inventory Development and Assessment**

DONALD F. DANSEREAU, GARY L. LONG, BARBARA A. McDONALD, and  
TOMME R. ACTKINSON  
*Institute for the Study of Cognitive Systems, Texas Christian University*

U.S. AFHRL Final Report, 1975 (June), No. TR-75-40.

A learning strategy inventory composed of 201 multiple-choice items, based on similar work and aspects suggested from a literature review, was developed. Correlational and factor analyses based on approximately 200 students were performed to provide a basis for identifying trainable learning strategies. Four phases of the learning process were identified and incorporated into a learning strategy training program (see MS. 1200). The learning strategy inventory provided an effective basis for strategy training development. In addition, the learning strategy inventory provides a significant first step in the development of a more general instrument for diagnosing learning strategy inadequacies in specific individuals.

MS. 1166 (37 pages/paper: \$5; fiche: \$2)

### **Dimensions of Job Satisfaction: Initial Development of the Air Force Occupational Attitude Inventory**

THOMAS C. TUTTLE, R. BRUCE GOULD, and JOE T. HAZEL  
*Occupational and Manpower Research Division, Lackland Air Force Base, Texas*

U.S. AFHRL Interim Report, 1975 (June), No. TR-75-1.

The initial development of the Air Force Occupational Attitude Inventory is described. From a selective review of studies that ascribed to a multifaceted approach, several categories or content areas were identified. An extensive item pool

was prepared and reviewed by judges to provide information regarding item-category agreement, item ambiguity, and item redundancy. The revised version of the inventory consisted of 348 items distributed across 35 facets. An 8-point bipolar rating scale without a neutral point was developed for rating the items. Details regarding the final version of the inventory booklet, suitable for administration to airmen, are provided. The entire listing of 348 items and descriptions of the 35 categories are included in the report for possible use of other researchers. Subsequent actions and future uses of the Occupational Attitude Inventory are discussed.

**MS. 1167** (16 pages/paper: \$4; fiche: \$2)

**Differential Reliability and Validity of Two Selected Wechsler Intelligence Scale for Children Short Forms**

DAVID A. LOMBARDI  
*Western State School and Hospital*

STANLEY H. COHEN  
*West Virginia University*

Two similar techniques of short-form construction using all subtests were applied to the Wechsler Intelligence Scale for Children with a sample of 40 retardates. To determine whether significant differences existed between these short forms, comparisons were made on one reliability criterion and on the three internal validity criteria of correlation with standard form, cases misclassified, and deviation in IQ points. Significant differences were found on several of the criteria. Results cautioned against undiscerning acceptance or rejection of future short forms.

**MS. 1168** (41 pages/paper: \$5; fiche: \$2)

**A Primary Grade Retarded-Trainable Children's Referral and Behavior Rating Form—Expectation and Referral Data**

ROLF A. PETERSON  
*University of Illinois at Chicago Circle*

SALLY GORSKI  
*Illinois State Pediatric Institute*

RHODA KREISMAN  
*University of Illinois at Chicago Circle*

This report contains (a) a description of a referral and behavior rating form for trainable children, (b) a description of its development, (c) estimated age norms, and (d) data obtained from reliability, expectation, and mock referral studies. The form was developed as a means by which referral agencies can quickly and accurately obtain developmental and behavior problem information from parents and teachers. Once items were selected, the percentage of agreement reliability was obtained from two levels of hospital staff (i.e., teachers and ward aides). Later, additional interrater and 6-week test-retest data were obtained. Interrater agreement was judged to be sufficiently high to continue development. Teacher expectation data were collected to determine if faulty expectations were at times a factor in referral. Teachers reported, on the form, the expected developmental level for trainable-retarded children based on their expectations for the minimum developmental level at which the youngest trainable, mentally handicapped child should be at upon initially entering a trainable class. The results suggested a wide

variation in expected developmental level, with 12% to 44% of the raters overestimating the appropriate level. It was concluded that the form provided a useful function since reported developmental level can be evaluated in terms of appropriateness of referral. Teacher's ratings of the behavior problem items provided data on the importance of each type of behavior as a cause for referral. Finally, two mock referral studies were carried out. The results of these studies suggest that the form does differentiate referral and nonreferral cases and provides important individual characteristic information and that differentiation between groups was due to unique developmental or behavior problems rather than differences in IQ. It was concluded that the reliability and validity of the form was sufficient to encourage future use in the referral process.

**MS. 1169** (28 pages/paper: \$5; fiche: \$2)

**Predicting Group Decision Strategies: The Effect of Rating-Scale Use Bias on Accuracy of Prediction**

DAVID L. FORD, JR.  
*The University of Texas at Dallas*

Mathematical models have been used extensively to describe the judgmental processes and strategies of individual decision makers, but rarely have the procedures been extended to describe the judgmental strategies of decision-making groups. The present study attempts to extend the procedures for the purposes of describing group decision-making strategies. Five mathematical models are examined as potential representations of the subjective evaluation decision schemes of individual decision makers. Based on the individual decision-maker model designations, predictions are made as to the best model representation for the decision groups composed of these individual members, whereby the aggregate of the members' judgments is used as an input to the resulting group models. The accuracy of the predictions is examined in light of individual differences in response-scale use by various subjects.

**MS. 1170** (48 pages/paper: \$5; fiche: \$2)

**A Model for Using Qualitative Variables as Covariates in the Analysis of Covariance**

N. PHILLIP ROSS  
*U.S. Army Research Institute for the Behavioral and Social Sciences, Arlington, Virginia*

*U.S. Army Research Institute for the Behavioral and Social Sciences Technical Paper, 1975 (July), No. 266.*

The powers of fixed-effects randomized block (RB) and analysis of covariance using qualitative concomitant variables (CANCOVA) were analytically and empirically compared. Analytical comparisons were made of the powers of RB and CANCOVA in which the number of observations ( $n_j$ ) within each of the  $l$  categories of the concomitant variable was a constant. Empirical comparisons were made of the power of CANCOVA in which  $n_j$  was a random variable (RCANCOVA)

with RB in which  $n_j$  was a constant. A Monte Carlo program simulated fixed-effects analyses with two levels of treatment, one criterion variable, and a qualitative concomitant variable with  $I$  categories. Three "design types" in which  $I$  was equal to 2, 3, and 4 were studied. The parameters varied for each design type were as follows: (a) total sample size ( $n$ ), ( $I = 2$ ,  $n = 20, 80$ ;  $I = 3$ ,  $n = 36, 144$ ;  $I = 4$ ,  $n = 56, 224$ ); (b) ratio of number of row observations ( $I = 2$ , 1:1, 4:1;  $I = 3$ , 1:1:1, 4:1:1;  $I = 4$ , 1:1:1:1, 4:1:1:1); (c) eta (0, .3, .9); and (d) magnitude of treatment effect (0, .2, .5). Analytically, the RB and CANCOVA provided the same information in terms of component sums of squares. However, the power relationship was shown to be a function of sample size, design type, and amount of heterogeneity (interaction) present. Empirically, no interpretable differences were found either in magnitude and direction or between the power of the RB and RCANCOVA for any of the design type and parameter combinations studied.

**MS. 1171** (13 pages/paper: \$4; fiche \$2)

**Theory and Applications of Rasch Measurement Models—  
A Bibliography**

DAVID LYNN PASSMORE

*National Technical Institute for the Deaf, Rochester Institute of Technology*

In 1960, Georg Rasch, a Danish mathematician, developed and explicated three measurement models that represent the probability that an examinee correctly answers a test item as a function of the examinee's ability and the item's easiness. Rasch's models have been suggested as solutions to many theoretical practical problems in instructional technology, computer-managed testing, standardized testing, attitude assessment, population studies, and test equating. Whether such optimistic predictions have merit awaits additional work. This 144-item bibliography primarily lists references to the measurement model referred to by Rasch as a structural model for items of a test. Works related to Rasch's models for reading speed and misreadings are also included. It is expected that this report will provide interested researchers with the body of theoretical and empirical studies of Rasch's models. Such studies have appeared in North America and Europe as unpublished papers, as presentations at scholarly meetings, as technical reports, as doctoral theses, and as papers published in professional journals. Many of these studies, heretofore, have remained unknown to interested researchers.

**MS. 1172** (38 pages/paper: \$5; fiche: \$2)

**Present Status of the Investigation of Handwriting  
Psychology as a Diagnostic Method**

OSKAR LOCKOWANDT

*Pädagogische Hochschule, Westfalen-Lippe, Abt. Bielefeld, Germany*

A review of all experimental research in the field of handwriting psychology as a psychodiagnostic discipline is presented. Two prerequisites for an unbiased examination (i.e., psychometric examination of handwriting psychological state-

ments) are discussed: the quantitative determination of different complex graphic variables and the unequivocal definitions of graphic variables, including the adequate scaling of the variability of graphic indicators. Discussed are the various testing aspects of handwriting, that is, reliability of the variables (objectivity, stability, and consistency) and interpretation (intraindividual agreement and intraindividual constancy) as well as validity of the variables (correlation of single variables with criteria, multiple correlation, factor analysis, and contrasting group procedure) and interpretation (contrasting group procedure, fractionated and constructive validation). The research results necessitate a different view of present investigations of handwriting psychology. The global rejection of the diagnostic significance of this instrument is untenable according to present scientific principles. The reliability coefficients for the simple measurable and scalable variables are comparable to psychometric techniques. More complex variables were previously treated in an artificial manner, that is, they were reduced to single variables. There are enough well-founded indications, however, that with proper consideration of their multidimensionality, their reliability can be proven satisfactorily. The reliability of interpretation is unexpectedly high and consequently, handwriting psychologists possess fixed yardsticks of assessment and cognitive systems of interpretation. The deeper analysis of the interpretive process remains in this field, as in the field of psychodiagnostics, a task for the future. The validity of the variables has yielded up to now no convincing success. This lack of success confirms only that the variables that have been defended by handwriting psychologists are ambiguous. Other techniques of validation have led to many positive results. In the contrast group procedure, handwriting analysis has proven to be particularly effective, especially in groups of children. After a precise analysis of the experiments, two reasons were found for negative results: A deficient concept of this discipline leads to irrational rejection or the personality of the handwriting psychologist is not properly taken into consideration.

## HUMAN EXPERIMENTAL PSYCHOLOGY

MS. 1173 (39 pages/paper: \$5; fiche: \$2)

### Reliability of a Measure of Behavior Perception

DARREN NEWTON, GRETCHEN ENGQUIST, and JOYCE BOIS  
*University of Virginia*

Two 5-week test-retest reliability studies of a measure of the unit of perception of ongoing behavior were conducted. In the first, 25 females and 23 males segmented a 7-minute action sequence under fine-unit or gross-unit instructional sets. Number of units marked at first viewing correlated .87 with number of units at retest. Comparison of precise pattern of markings at test and retest indicated significantly better-than-chance repeatability at both instructional levels. Correlations over intervals of the sequence between the number of times each interval was marked at first presentation and the number of times it was marked at second presentation averaged .85. A second study employed eight 2—3-minute se-

quences and fine-, gross-, and natural-unit instructional sets. The result was a substantial replication of previous findings on all three indexes of reliability, although some differences in degree of reliability were observed for different sequences. In addition, both studies included a measure of attribution for each unit of behavior recorded. Subjects judged whether each action was "chosen by the person" or "produced by the situation" as they segmented the sequence. In both studies, the number of each type marked by each subject as well as the number of each type marked in each stimulus interval was significantly reliable over the test-retest period.

**MS. 1174** (44 pages/paper: \$5; fiche: \$2)

**Dynamics of the Eye and the Head During an Element of Visual Search**

GORDON H. ROBINSON, BRUCE W. KOTH, and JOHN P. RINGENBACH  
*University of Wisconsin-Madison*

Measurements were made of the dynamics of the eye and the head during an "element" of visual search which is defined as the coordinated sequence of movements beginning with the signal to refixate and ending with target discrimination and response. Independent variables were target angle (20° - 100°), certainty in target location, target brightness, target information content, and alcohol stress. Dependent performance measures included reaction times of the eye and the head, number of eye movements, maximum head velocity, time to acquire target, and response time, as well as qualitative descriptions of the movement patterns.

**MS. 1175** (13 pages/paper: \$4; fiche: \$2)

**Eye Color and Motor Behavior**

ALLAN MARKLE  
*Lake Forest College*

*This paper was presented at the Twenty-First Annual Convention of the Southeastern Psychological Association, March 1975, Atlanta, Georgia.*

This paper reviews the recent research that has demonstrated that eye color may be a significant predictor of individual differences in motor behavior, particularly along the self-paced/reactive dimension. Self-paced activities are those in which individuals can initiate their response when they choose such as bowling, golf, etc. Reactive activities are those that require a quick response to a rapidly changing stimulus situation such as boxing, defensive football, etc. The basic hypothesis that was tested in all of these studies is that light-eyed individuals perform relatively better at self-paced tasks, but dark-eyed individuals perform relatively better at reactive tasks. The earliest research employing the self-paced/reactive dimension found that Blacks performed relatively better than Whites on reactive tasks in professional baseball (i.e., hitting) and college and professional basketball (i.e., field-goal shooting) while Whites performed relatively better on the self-paced tasks of pitching and free-throw shooting. These results were also obtained in two subsequent archival studies and three laboratory studies. Research

employing only White subjects produced findings that paralleled the racial differences. In professional football, it was found that as the proportion of Blacks playing a particular position increased, the mean eye darkness of Whites playing that position also increased. In professional baseball, dark-eyed Whites excelled at hitting, while light-eyed Whites performed relatively better as pitchers. Light-eyed professional athletes also performed better at the self-paced activities of bowling and basketball free-throw shooting (but not field-goal shooting). In a nonathletic situation, dark-eyed subjects performed better than light-eyed subjects on a task involving speed of response than on a task involving inhibition of response. In addition, dark-eyed patients were found to have greater sensitivity to dental pain than light-eyed patients.

#### PHYSIOLOGICAL AND ANIMAL PSYCHOLOGY

**MS. 1176** (13 pages/paper: \$4; fiche: \$2)

##### **Effect of Dominancy on Self-Punitive Behavior**

JOHN E. ANSON

*Stephen F. Austin State University*

The relationship between aggressiveness (or dominancy) and the occurrence of self-punitive behavior was examined. Forty 24-hour-old male rat pups were castrated and half were subsequently administered testosterone, the hormone affecting male sex characteristics. The remaining rats received placebo injections of oil. The rats were tested in a straight runway 70 days later. All subjects received 18 escape-training trials followed by either 31 punishment-extinction or regular-extinction trials. Start speeds and alley-running speeds constituted the primary assessment measures. These data showed that punishment given during the extinction of the escape response resulted in faster running speeds than for those subjects receiving regular extinction. However, testosterone-injected rats given punishment ran significantly slower than those punished rats injected with oil. These results were contrary to predictions that more aggressive rats, those administered testosterone, would run faster and more persistently. One explanation offered was that testosterone induced behavior incompatible with the running response.

**MS. 1177** (96 pages/paper: \$7; fiche: \$2)

##### **Attachment Potential in Rhesus Macaque Dyads (*Macaca Mulatta*): A Sabbatical Report**

G. MITCHELL

*University of California, Davis*

This sabbatical report on attachment potential in the rhesus monkey includes a brief historical review of research on social and emotional attachment in nonprimates, primates, and humans. A defense of the use of dyads in research on social

behavior in primates follows the review. Ten differently composed dyads are discussed. A detailed description of rhesus monkey communication is presented with the effects of age, sex, rearing, and interspecific interaction on vocalizations, movements, postures, facial expressions, self-directed behavior, and arousal. The nature and intensity of attachment and separation in mother-neonate, mother-infant, infant-infant, juvenile-juvenile, preadolescent-preadolescent, preadolescent-infant, adult male-infant; adult male-adult female, adult male-adult male, and baboon-macaque dyads are described. Several specific conclusions are reached regarding age and sex differences. Concluding statements are that the rhesus monkey has a greater capacity for attachment than has been emphasized in the past. Even full-adult and socially deprived macaques can form such bonds of attachment with an alien species. Humans undoubtedly share with their nonhuman primate relatives some characteristics of and great potential for variability in social and emotional attachment.

#### DEVELOPMENTAL PSYCHOLOGY

MS. 1178 (61 pages; paper: \$6; fiche: \$2)

##### **Environmental Forces in the Home Lives of Three-Year-Old Children in Three Population Subgroups**

MAXINE SCHOGGEN and PHIL SCHOGGEN

*John F. Kennedy Center for Research on Education and Human Development,  
George Peabody College for Teachers*

Twenty-four children in families with differing socioeconomic backgrounds were observed for eight half-hour periods in ordinary activities of everyday life in their own homes. The resulting specimen records have been preserved for other uses and analyzed in the present study to describe and quantify the kinds of active environmental inputs received by these children from their associates. Environmental force units (EFU) were identified and described in terms of 26 characteristics, such as mother proximity, duration, initiation, outcome, and affect of child. Results showed widely ranging individual differences, important similarities across the three socioeconomic groups, and some intergroup differences. On the average, input occurred in the form of relatively short units at the rate of 1.63 EFU per minute. Environmental agents (associates) were predominantly female with the mother usually most prominent. Agents were responsive to, attentive to, and interfering with children in one group as often as another. Children in middle-income homes, as compared with children in low-income homes, tended to have a higher percentage of EFU in which they were (a) involved in information exchange, especially utilizing verbal means; (b) engaged in more extended interaction; and (c) in harmony with the agent. The results are compared with expectations concerning the social-psychological environments of children in disadvantaged homes and other related studies.

MS. 1179 (13 pages/paper: \$4; fiche: \$2)

**Pilot Study of the Effects of Prior Free Recall on Secondary Organization of Fourth Graders**

SADIE A. GRIMMETT  
Indiana University

Two replications of lower-class fourth graders (20 Black and 20 White) were conducted to assess the effect of prior recall experience on memorial organization. Prior recall was defined by a not easily clustered 20-word list. Organization was indexed by clustering, runs, and clustered runs (CR, a measure unique to this study) derived from performance on a categorizable 20-word list. In each replication the experimental group received both lists and the contrast group received only the categorizable list. It was hypothesized after Tulving that the experimental groups would not perform as well as the contrast groups, given that the first list was assumed to induce organization units that were inappropriate for the organization of the second list. In both replications the contrast groups earned the higher CR scores. Additionally, the lower-class Black contrast group obtained higher clustering scores and the lower-class White contrast group manifested more runs. The latter finding had been expected for the experimental groups since a well-organized list is exemplified by few runs; this result was not obtained for the White contrast group. Since other investigators have found that run length is one source of growth in mnemonic organization of children, the decrease in this component resulting from prior experience agrees with that finding. While the data support Tulving's hypothesis, they also clearly suggest that effects of prior recall are complexly related to mnemonic organization of children.

**SOCIAL PSYCHOLOGY**

MS. 1180 (41 pages/paper: \$5; fiche: \$2)

**Empathy, Sympathy, and Altruism**

PAUL R. BLEDA  
Army Research Institute for the Behavioral and Social Sciences, Arlington, Virginia

In contrast to previous reviews that have dealt extensively with either situational determinants of intervention in emergencies or norms governing prosocial actions, the present paper focuses primarily on the role of empathy and sympathy in mediating helpful acts. To provide a meaningful context in which to integrate research in this area, two distinct tasks are undertaken. First, the conceptual meaning of altruism is discussed via a comparison of general definitions of this term and an examination of its evolutionary and behavioral aspects. Second, empirical findings implicating the role of empathy and sympathy in facilitating prosocial behaviors are reviewed comprehensively. A synthesis of these relevant findings is attempted via discussions of (a) the nature of altruistic motivation, (b) the development of a capacity to relate emotionally to others, and (c) the processes involved in learning the value and form of altruistic behaviors.

MS. 1181 (30 pages/paper: \$5; fiche: \$2)

**Involvement, Discrepancy, and Order of Presentation Effects on  
Attitude Change, Communication Displacement, and  
Communicator Evaluation**

GARY M. YONTEF, and GLENN M. WHITE  
*University of Arizona*

Male subjects holding extreme positions on an aggressive-submissive continuum were trichotomized into involvement levels and received an aggressive communication and a submissive communication in one of two orders. The 144 subjects estimated each communicator's position, judged each communicator on Semantic Differential scales, and then reestimated their own positions. Medium involvement subjects shifted their attitudes toward the discrepant communication more than did high- or low-involvement subjects, and a communication order primacy effect on attitude change occurred. Communicator position judgments were assimilated toward subjects' own positions. Evaluative, potency, and intelligence judgments of the communicators were subject to a number of involvement, communication order, communication discrepancy, and own-position effects.

MS. 1182 (14 pages/paper: \$4; fiche: \$2)

**Job Satisfaction of Mexican-American Blue-Collar Employees**

JAMES E. CAMPION, GEORGE A. BRUGNOLI, and JACK M. GREENER  
*University of Houston*

It has been argued that due to cultural differences, minority group members may perceive and respond to the work environment differently than nonminority group members. Such a position, if true, has obvious implications for recruiting, selecting, and developing members of minority groups. Past research has focused on Black-White differences in job attitudes. The present study investigates the job attitudes of Mexican-American employees. The sample consisted of 58 Mexican-American and 48 White, blue-collar male employees of a food-processing company located in a large southwestern city. A modified version of Porter's Need Satisfaction Questionnaire was used to measure need satisfaction and importance in five areas: security need, social needs, esteem needs, autonomy needs, and self-actualization needs. The results indicated that need satisfaction and importance were very similar for these two groups. Only 2 of 26 comparisons were statistically significant. The Mexican-American employees were more satisfied with job prestige outside the company and, compared to the nonminority group, they perceived opportunity for friendship as more important. The hierarchies of need satisfaction and importance were also quite similar for the two groups. Overall, these results suggest that Mexican-American employees perceive and value their jobs in a manner very similar to that of nonminority employees in comparable jobs. These findings were discussed in relation to earlier work that had found differences in need satisfaction and importance between employees in Mexico and the United States.

**MS. 1183** (22 pages/paper: \$4; fiche: \$2)

**Bibliography of Journal Articles in Social Psychology: First Half of 1975**

DEBORAH R. CAPASSO and CLYDE HENDRICK  
Kent State University

The present bibliography updates three previous manuscripts: Hendrick (Ms. 413), Nelson and Hendrick (Ms. 771), and Nelson and Hendrick (Ms. 1008). Articles from five journals are arranged alphabetically by heading and by author under 31 subject headings. The journals are *Journal for the Theory of Social Behavior*, *Journal of Applied Social Psychology*, *Journal of Experimental Social Psychology*, *Journal of Personality and Social Psychology*, and *Representative Research in Social Psychology*. The bibliography may be useful for courses and seminars emphasizing current literature. For convenience in assigning readings, the articles are numbered consecutively from 1 to 205. The number of articles per subject heading varies widely, ranging from 1 to 23. Subject headings with number of articles per heading are as follows: aggression, 8; altruism and helping, 8; animal social psychology, 1; attitudes, 11; attraction, 11; attribution, 19; balance theory, 2; bargaining and interaction, 7; conformity, 4; developmental social psychology, 23; dissonance, 4; ecological psychology, 7; equity and inequity, 5; group dynamics, 9; impression formation, information integration, and person perception, 5; leadership, 5; mere exposure, 4; nonverbal communication, 8; personality variables and behavior, 8; race, ethnic, and sex research, 10; reactance theory, 4; risk-taking behavior, 7; self-awareness, 3; self-disclosure, 1; social comparison theory, 3; social psychology and the law, 2; social psychology of the experiment, 1; stereotyping, prejudice, and ethnocentrism, 3; stress and emotionality, 6; theoretical and methodological issues, 14; and time perception, 2.

**Reliability of a Measure of Behavior Perception:** DARREN NEWTON, GRETCHEN ENGQUIST, and JOYCE BOIS, *University of Virginia*. See MS. 1173, page 5.

**PERSONALITY**

**MS. 1184** (10 pages/paper: \$4; fiche: \$2)

**Involvement and the Relationship Between  
Integrative Complexity and Creativity**

DAVID FALCONE and KENNETH FRAUENFELDER  
*Western Illinois University*

The relationship between integrative complexity and creativity, and the effect of involvement on this relationship, was assessed. For 97 female subjects, integrative complexity was measured by the Paragraph Completion Test and creativity was measured by the Remote Associates Test and by the Uses Test. Subjects were administered the creativity tests under conditions of high and low involvement.

There was no main effect for complexity on either of the creativity measures. On the Uses Test a Complexity  $\times$  Involvement interaction was found ( $p < .025$ ), such that in the high-involvement condition creativity scores were increased for high-complexity subjects. This interaction was not found with the Remote Associates Test. The findings suggest that a relationship may exist between complexity and creativity under high levels of involvement and when the dependent variable is a creativity measure that is divergent in nature or has a minimal relationship to intelligence. The lack of relationship between the Remote Associates Test and the Uses Test is important in itself. Present findings suggest that though both are used to measure creativity, a basic difference exists between the tests that needs to be investigated.

MS. 1185 (19 pages/paper: \$4; fiche: \$2)

**Dynamic Personality Inventory:  
Normative Results with an American College Population**

CHARLES SALTZMAN, JAMES CREASER, and JO-ANN ASHBAUGH  
*Student Counseling Service, University of Illinois at Chicago Circle*

The Dynamic Personality Inventory (DPI) is described and its uniqueness as an objectively scored, psychoanalytically based assessment instrument is stressed. The available British and American literature reporting applications or statistical analyses of the DPI is reviewed. It is suggested that one source of resistance to even wider acceptance of the instrument is the unavailability of sufficient normative data. In particular, there is a lack of recently established norms for American populations. As a contribution toward filling this need, a sample of test records for 275 men and 413 women between the ages of 17 and 23 was gathered at the University of Illinois at Chicago Circle. Tables of percentile ranks are presented for all scales as well as means and standard deviations. The 39-item bibliography includes the results of a *Psychological Abstracts Search and Retrieval* search.

MS. 1186 (9 pages/paper: \$4; fiche: \$2)

**MMPI Item Responses for Male Neuropsychiatric Patients**

EDWARD F. GOCKA  
*Predictive and Evaluative Models Research Laboratory,  
Veterans Administration Hospital, Sepulveda, California*

Individual Minnesota Multiphasic Personality Inventory (MMPI) item responses are tabled for a sample of 220 male veteran neuropsychiatric patients. These item responses may be used to augment those given by Dahlstrom and Welsh (1960) and Dahlstrom, Welsh, and Dahlstrom (1972) in *An MMPI Handbook* for a normal adult and a college sample. All MMPI records used to generate this tabulation were randomly sampled from a larger pool of hospital intake records obtained from two Veterans Administration installations during the years from 1960 to 1969.

MS. 1187 (16 pages/paper: \$4; fiche: \$2)

**Women's Liberation Scale (WLS): A Measure of Attitude Toward Positions Advocated by Women's Groups**

CARLOS GOLDBERG  
*Indiana University-Purdue University at Indianapolis*

The Women's Liberation Scale (WLS) is a 14-item, Likert-type scale designed to measure attitudes toward positions advocated by women's groups. The WLS and its four-alternative response schema is presented, along with descriptive statistics of scores based on male and female college samples. Reliability and validity measures are reported, and the factor structure, item means, and item-whole correlations are also described. Finally, the correlation of the WLS with the Attitudes Toward Women Scale (AWS) is presented.

**CLINICAL PSYCHOLOGY**

MS. 1188 (76 pages/paper: \$7; fiche: \$2)

**How to Never Grow Up and Never Stop Growing:  
A Way of Self-Therapy (A Personal Account)**

DAVID B. LYNN  
*University of California, Davis*

The author reports an account of the method of self-therapy that he haltingly evolved over the years when faced with sensory disabilities. It presents a personal account of the tortuous routes in the evolution of this method and his confrontation with religion, work, self, middle age, death, others, marriage, and image of old age. The self-therapy involves an analysis of false assumptions and the construction of useful ones, meditation on simple statements distilled from the useful assumptions, and an awareness of dreams. It is written for psychotherapists, people undergoing or planning to undergo self-therapy, and people who are interested in how another person (a middle-aged psychologist) confronts life.

MS. 1189 (107 pages/paper: \$8; fiche: \$4)

**Short-Term Treatment; An Annotated Bibliography  
(1945-1974)**

RICHARD A. WELLS  
*University of Pittsburgh*

Short-term treatment has been steadily gaining in popularity in the past 5 years although its historical antecedents are of much longer standing. This annotated bibliography is the result of a literature search covering the major journals in psychology, psychiatry, and social work during the period from 1945 to 1974. A total of 243 articles were located and categorized as follows: (a) theoretical and

review articles, (b) short-term methods in individual therapy with adults, (c) short-term methods in individual therapy with children and adolescents, (d) short-term methods in group therapy, (e) short-term methods in family and marital therapy, and (f) short-term methods with hospitalized patients. The bibliography is accompanied by a critical review of short-term treatment that discusses trends and particularly concentrates on innovative methods of brief intervention in individual and family crisis and with children and their families. An author and subject index is also included.

**MS. 1190** (61 pages/paper: \$6; fiche: \$2)

**Three Measures of Family Problem-Solving Behavior:  
A Procedural Manual**

MARK NICKERSON, REBECCA LIGHT, ELAINE BLEACHMAN,  
and BETSY GANDELMAN  
*Yale University*

The procedural details of three measures of family problem-solving behavior are presented. These measures are used to code videotapes that are recorded when family members discuss and try to solve a family problem that they consider important. The measures were developed to accompany methods for training parents and their preadolescent and adolescent children to solve family problems together. The purpose of these measures is to document the process and outcome of problem-solving training. The Family Problem-Solving Behavior Coding System, an adaptation of Hops' Marital Interaction Coding System, was revised to suit the training methods and the parent-adolescent population and to increase interrater reliability. Using this interval coding system, a trained rater can code the frequency and sequence of 28 verbal and nonverbal behaviors emitted by each family member. The Family Problem-Solving Efficiency Scale was developed to assess the extent to which the family's problem discussion raised a mutual solution and to assess the implications that were overtly considered, revised, and accepted by each family member. Using this Guttman-type scale, a trained rater can assign a score from 1 to 12 to the family's discussion of any one problem. The Topic of Discussion Record was developed to summarize the process of problem discussion, including the number of topics raised, the sequencing of topics, and the time spent on each topic. Along with definitions of each measurement system, information about rater training, rater reliability, and subjective evaluation of problem solutions is presented. On a random basis, reliability checks were run on 96 out of 223 family problem discussions rated, using the Family Problem-Solving Behavior Coding System, and on 12 out of 117 discussions rated with the Family Problem-Solving Efficiency Scale and the Topic of Discussion Record. Interrater reliabilities were 77.7%, 94.4%, and 93.9%, respectively, for each measure.

MS. 1191 (58 pages/paper: \$6; fiche: \$2)

**Annotated Bibliography of Research on Lesbianism and  
Male Homosexuality (1967-1974)**

STEPHEN F. MORIN  
California State College, San Bernardino

Researchers in recent years have given increased attention to the empirical study of lesbianism and male homosexuality. This annotated bibliography outlines major findings of 139 empirical studies published in English-language journals and referenced in *Psychological Abstracts* in the 8-year period from 1967 through 1974. Articles included in the bibliography are those listed in the cumulative index under "homosexuality," "lesbianism," and "male homosexuality." Case histories, treatment articles, theories, and reviews of research are not included, nor are books, dissertations, or nonpublished papers read at conventions. The bibliography includes 22 studies on lesbians, 88 studies on male homosexuals, and 12 studies on both lesbians and male homosexuals. Heterosexual subjects have been used to study attitudes toward homosexuality and latent homosexual impulses in 15 studies; the remaining two studies are on homosexual behavior in lower animals. Of the research conducted on lesbians and homosexual men, 82% has been comparative, assessing ways in which homosexual groups differ from heterosexual controls; the remaining research is primarily of a survey nature on more narrowly defined topics, such as homosexuals in heterosexual marriages. Since one of the biggest problems in research on lesbians and male homosexuals is sampling an essentially invisible or hidden population, a brief description of subject specifications precedes each summary of results.

MS. 1192 (32 pages/paper: \$5; fiche: \$2)

**What Entering, Within-Program Variables Relate to  
Postrehabilitation "Success"?**

RONALD C. FORCE, LAURA HOSKINS, and MARGARET CRAIG  
St. Francis Homes for Boys and Girls, Inc., Salina, Kansas

Adjudged offenders and predelinquent youths 12 to 18 years of age, from the United States, were selected for anticipated amenability to correctional change in this open-residential therapeutic environment. Each of four homes houses 26 youths. Each youth has a thorough assessment, explicit treatment plan, and primary counselor. All elements of the program are directed toward resocialization. The modal stay is 11 months. For the last 8 years a fixed minimum battery of psychological and behavioral measures has been administered upon each youth's entrance. The currently employed criterion is to follow the outcome of each selected youth for two or more years subsequent to treatment. This includes a control group of 29 youths who were selected but not admitted, and 293 youths who were selected and spent at least one day at the homes. The posthome outcome is assessed from information collected primarily by telephone and then recorded. Outcome is rated from +3 through 0 through -3 in terms of ability to cope, ability to carry own weight in society, ability to maintain freedom, employment, skill im-

provement, financial responsibility, and rated "personal soundness." The series of reports summarized comes from (a) item and sometimes scale analysis of the tests and report forms and (b) interpretation of youth differentiation and environmental variables, aided by general clinical immersion in the program. This paper concludes that it is true that the corelationships established between predictor and ongoing variables do not establish causation; but in a treatment situation where decisions are made on the basis of perceived clinical need, the known relationship is available knowledge superior to no known relationship, and it is suggestive of change in the environment. Described are the many changes in selection, in treatment strategy, and in shifts in the budgeting of the youth homes introduced because of feedback.

**MS. 1193** (32 pages/paper: \$5; fiche: \$2)

**Summary of Army Research Institute Research on Military Delinquency**

D. B. BELL and R. F. HOLZ

*U.S. Army Research Institute for the Behavioral and Social Sciences, Arlington, Virginia*

*U.S. Army Research Institute for the Behavioral and Social Sciences Research Report, 1975 (June), No. 1185.*

Most Army Research Institute research on military delinquency has focused on predicting, at the point of entry, those personnel most likely to commit delinquent acts within a fixed time period (e.g., by the end of basic combat training). Across the variety of investigations that focused on various types of delinquency, some consistent findings emerge. Component of service (i.e., volunteers vs. draftees) and several closely associated variables—age at entry, level of education, and mental ability—are associated with delinquent acts; such background data and peer ratings provide the best predictors. Attempts to develop a more precise profile of the military delinquent have not been very successful, and programs aimed at rehabilitation of potential delinquents have actually proved counterproductive. All of these outcomes suggest that future research should concentrate more on the context in which delinquency occurs and less on the characteristics of those who commit delinquent acts.

**MS. 1194** (7 pages/paper: \$4; fiche: \$2)

**Statistical Study of Sheltered Workshop Employees**

ROBERT J. GINN

*University of Texas Medical Branch*

The hourly wages of handicapped sheltered workshop employees were studied. The mentally retarded workers' mean income was \$.69 per hour compared with \$.89 for nonretarded handicapped employees. In addition to the mean difference in hourly wages, there was a difference in the variability of the wages. While there was not a significant difference in the wages per se, the standard deviation of the hourly pay for the retarded employees was only 19.1 versus 27.1 for the non-retarded employees. From this it would appear that the retarded workers were

subject to a more rigorously imposed pay schedule. Further study as to differences in work quality and quantity as well as age, sex factors, etc., are indicated. The principle of least squares was the statistical tool used in this study.

**MS. 1195** (14 pages/paper: \$4; fiche: \$2)

**Halfway Houses for Drug Abusers: An Annotated Bibliography**

DAVID F. DUNCAN  
*University of Texas*

The use of halfway houses for the treatment of drug abusers has become increasingly popular over the past 10 years. The available literature on the use of halfway houses for drug abusers is surveyed in this 35-item annotated bibliography. A brief topical index to the abstracts is included.

**MS. 1196** (36 pages/paper: \$5; fiche: \$2)

**Computerized Interpretation of Brain Impairment Tests:  
Preliminary Results**

ROBERT J. GREGORY  
*University of Idaho*

The development of a computer program that interprets a neuropsychological test battery is discussed. On the basis of 41 quantitative scores from commonly administered tests of brain impairment and 31 neurological symptoms, the program makes statements about sites of brain damage, degree of lateralization, and specific medical diagnoses. Preliminary results indicate a high degree of agreement between the computer-generated decisions and those of a skilled clinical neuropsychologist. In light of the potential importance of neuropsychological test interpretations for the welfare of individual patients, the clinical application of the program is not advocated until it has been elaborated and extensively validated. On the other hand, the methodology and preliminary program reported here may be useful in a research context.

**EDUCATIONAL PSYCHOLOGY**

**MS. 1197** (51 pages/paper: \$6; fiche: \$2)

**Sophie: A Sophisticated Instructional Environment**

JOHN SEELY BROWN, ALAN G. BELL, RICHARD R. BURTON, and ROBERT J. BOBROW  
*Bolt-Beranek and Newman, Inc., Cambridge, Massachusetts*

*U.S. AFHAL Final Report, 1974 (Dec), No. TR-74-93.*

The Sophie program, which implements mixed-initiative computer-assisted instruction within a simulated electronics-troubleshooting-training laboratory interaction,

has been extended in several manners. The language processor now accepts ellipses and other nonspecific requests and resolves these from dialogue context. A help-requesting facility has been provided that will suggest possible faults (based on the student's knowledge about the circuit at the time of request) that could explain the symptoms observed. The net effect of modifications is that a dialogue is much more like a conversation with a very skilled tutor who can infer what a student means, based on a complete interaction session, and can respond appropriately. The resulting program can be accessed through the Advanced Research Projects Agency network of computers.

**MS. 1198** (209 pages/paper: \$12; fiche: \$6)

**Learning Strategy Training Program: Questions and Answers for Effective Learning**

DONALD F. DANSEREAU, GARY L. LONG, BARBARA A. McDONALD,  
TOMME R. ACTKINSON, KAREN W. COLLINS, SELBY H. EVANS,  
ALICE M. ELLIS, and STEPHEN WILLIAMS  
*Institute for the Study of Cognitive Systems, Texas Christian University*

*U.S. AFHRL Final Report, 1975 (June), No. TR-75-48.*

An effective integrated learning strategy program emphasizing a connection technique employing questions and answers is presented. The components were derived from a review of the educational and psychological literature and from an analysis of the responses to the learning strategy inventory that were conducted during this same research effort. Also, two other training packages (visual imagery and paraphrasing connection) were evaluated along with this package in a controlled experiment. This program improved long-term retention of factual material. With appropriate insertions of blank pages, this report can be used to provide learning strategy training.

**MS. 1199** (203 pages/paper: \$12; fiche: \$6)

**Learning Strategy Training Program: Visual Imagery for Effective Learning**

DONALD F. DANSEREAU, GARY L. LONG, BARBARA A. McDONALD,  
TOMME R. ACTKINSON, KAREN W. COLLINS, SELBY H. EVANS,  
ALICE M. ELLIS, and STEPHEN WILLIAMS  
*Institute for the Study of Cognitive Systems, Texas Christian University*

*U.S. AFHRL Final Report, 1975 (June), No. TR-75-47.*

An effective integrated learning strategy program emphasizing a connection technique using visual imagery is presented. The components were derived from a review of the educational and psychological literature and from an analysis of the responses to the learning strategy inventory that were conducted during this same research effort. Also, two other training packages (paraphrasing and question-answer connection) were evaluated along with this package in a controlled experiment. This program improved long-term retention of factual material and

appeared to help lower-reading-ability students more than higher-reading-ability students. With appropriate insertions of blank pages, this report can be used to provide learning strategy training.

**MS. 1200** (82 pages/paper: \$7; fiche: \$2)

**Effective Learning Strategy Training Program:  
Development and Assessment**

DONALD F. DANSEREAU, GARY L. LONG, BARBARA A. McDONALD,  
TOMME R. ATKINSON, ALICE M. ELLIS, KAREN COLLINS,  
STEPHEN WILLIAMS, and SELBY H. EVANS  
*Institute for the Study of Cognitive Systems, Texas Christian University*

*U.S. AFHRL Final Report, 1975 (June), No. TR-75-41.*

Potentially effective and trainable learning strategies were identified by an analysis of a specially developed learning strategy inventory and a review of educational and psychological review literature. Four aspects of the learning process suggest the usefulness of special training. These were the identification of important or unfamiliar material, the applications of techniques for the comprehension and retention of this information, the efficient retrieval of information, and the skill in coping with distractions during the foregoing processes. A training program was developed for teaching selected specific strategies, including the three alternative comprehension/retention strategies of paraphrasing, question answering, and the use of visual imagery, in such a way as to compare the three alternative connection techniques. The results indicated that minimal strategy training showed significant results in long-term retention, although no reliable differences were found in immediate testing. Further refining of the techniques was recommended. An effective strategy training program suitable for implementation in technical training was created, modified, and assessed.

**MS. 1201** (37 pages/paper: \$5; fiche: \$2)

**Effects of Adjunct Instructional Materials Employed Outside the  
Classroom on the Performance of Air Force ROTC Students**

ROBERT H. SULZEN and DONALD L. THOMAS  
*Advanced Systems Division, Wright-Patterson Air Force Base, Ohio*

*U.S. AFHRL Final Report, 1975 (July), No. TR-75-5.*

This study was designed to evaluate the effectiveness of adjunct instructional materials, when used under unstructured conditions outside the classroom. Adjunct instructional materials are questions and answers keyed to a text. The adjuncts for the study were prepared for textbooks used with two Air Force ROTC courses. Over 400 students at two universities served as subjects. Four experiments were conducted using a counterbalanced repeated-measures design. Students used adjunct materials for portions of the text and served as a control for other portions of the text. The results indicate that adjunct materials promote learning of materials directly covered by adjunct questions, but do not contribute to applica-

tion of the material covered by adjunct questions. The use of adjunct instructional materials is recommended. Further research, especially concerning the effects of various types of questions, is recommended also.

**MS. 1202** (11 pages/paper: \$4; fiche: \$2)

**Overcorrection: A Technique for Eliminating Resistant Behaviors**

JOHNNY L. MATSON  
*Indiana State University*

THOMAS CAHILL  
*Illinois Masonic Medical Center*

Overcorrection is a mild punishment technique that provides for logical consequences of inappropriate behaviors. The method has two components—restitution, during which a disruptive environment is reinstated to a state vastly superior to the original one, and positive practice, during which more appropriate responses are taught to replace the misbehavior. A number of studies are reported that demonstrate the effectiveness of overcorrection in eliminating highly resistant behaviors. A possible application of the technique in the school is described, and a comparison is made of how overcorrection differs from more traditional techniques such as writing sentences. It is suggested that students in primary grades, kindergarten, and special-education classrooms would be the most appropriate groups for use with this treatment.

**MS. 1203** (14 pages/paper: \$4; fiche: \$2)

**Proposed System for Rewarding and Improving Higher Educational Instructional Effectiveness**

LAWRENCE M. ALEAMONI  
*University of Illinois at Urbana-Champaign*

The problem of developing a system for rewarding and improving instructional effectiveness that would be acceptable to the administrative and the academic arms of the university has long bedeviled both. A proposed system is presented that reviews current practices and then suggests (a) methods of assessing instructional effectiveness, (b) methods of feedback of results to the instructor, (c) options for the instructor to consider in light of the evaluations made, (d) implementation of the instructional improvement proposal alternative and the project's final report, and (e) an administrative system.

**MS. 1204** (39 pages/paper: \$5; fiche: \$2)

**Training Extension Course: A Manhattan Project in Educational Technology**

WESLEY K. ROBERTS, WARREN G. LAWSON, and WILLIAM D. NEAL  
*U.S. Army Combat Arms Training Board, Fort Benning, Georgia*

Prodigious achievements in the application of theoretical solutions to operational problems have been spasmodic occurrences in the history of educational research

and development. Such excellence in the advancement of knowledge is often witnessed as the result of a colossal effort bringing together scientific expertise with the manpower and fiscal resources to achieve an identified goal. This report traces the history of the Army's Training Extension Course (TEC) from its conception to the implementation of the project's first series of prepackaged, empirically designed training materials. The relationship of TEC to the earlier Manhattan Project is unfolded as the impact of this project on the field of educational technology becomes apparent. This report elucidates the training analysis procedures, training support requirements, lesson development model, contracting, preparation of lessons, growth of the project, and its effect on the training problems that served as the origin of TEC. The report offers TEC as a solution to the call for such a Manhattan Project in Educational Technology made by Deterline to Gagne during a scholarly interview some 2 years before the TEC project began.

**MS. 1205** (34 pages/paper: \$5; fiche: \$2)

**Impact of Computer-Based Instruction on Attitudes of Students and Instructors: A Review**

ANNE TRUSCOTT KING

*Technical Training Division, Lowry Air Force Base, Colorado*

*U.S. AFHRL Final Report, 1975 (May), No. TR-75-4.*

This review examines the evidence that bears on the issue of whether contact with computer-based instruction leads to feelings of "depersonalization" or "dehumanization." The approach is to document investigations that employ the larger construct of "attitudes" toward various modes of computer-based instruction that are found to be held by students and instructors before, during, or after exposure to computer-based instruction. Evaluation of pertinent factors that influence attitudes was made through an assessment of relevant literature and personal communication with experts associated with several computer-assisted instruction and computer-managed instruction projects in the United States.

**MS. 1206** (67 pages/paper: \$6; fiche: \$2)

**General Issues in Candidate Selection and the Selection of Medical Students—An Annotated Bibliography**

JIM FLOYD

*University of Rochester*

Selection processes are found in all facets of society though little is understood about how selection decisions are reached and the factors that play important roles in those decisions. There is all too often an unidentified element involved in how choices are made among similarly qualified candidates. This factor may not be clearly accounted for in the announced selection criteria nor is it always easily identifiable through an analysis of the chosen individual or group. The process of selecting medical students illustrates a common type of candidate selection

procedure. This annotated 181-item bibliography lists works that present many of the problems and proposed solutions concerning selection issues in general and the selection of medical students in particular. These areas include a brief section on the role of vocational choice (how the candidate arrives at applying for a position), use of personality measures in selection, selection interview, factors that influence admission to medical school, and some current and proposed medical school selection methods.

## PERSONNEL AND INDUSTRIAL PSYCHOLOGY

MS. 1207 (279 pages/paper: \$15; fiche: \$6)

### Training of U.S. Air Traffic Controllers

JAMES H. HENRY, MURRAY E. KAMRASS, JESSE ORLANSKY,  
THOMAS C. ROWAN, JOSEPH STRING, and ROY E. REICHENBACH  
*Institute for Defense Analyses, Arlington, Virginia*

*Department of Transportation, Federal Aviation Administration Final Report, 1975 (Jan), No. FA 74 WAI-446.*

The Federal Aviation Administration (FAA) program for selection and training of air traffic controllers is examined, along with methods available to measure performance and to establish competence on the job. Then standardization of training and maintaining quality control in training facilities is addressed. The capabilities and limitations of existing simulation devices for training of air traffic controllers are considered. Training costs are compared for various schedules of classroom, simulation, and on-the-job training. Attention is given to (a) simulators and their location at centralized or noncentralized training facilities, (b) the cost of training, (c) future requirements of training, (d) research and development on training, (e) hiring practices, (f) standardization of training practices, and (g) the training load of the FAA Academy. As a direct consequence of this study, the FAA completely redesigned its controller training program. In the new program, emphasis is placed on (a) use of better personnel selection criteria to reduce attrition during training, (b) use of objective measures of controller performance, (c) compression of the elapsed time for training from 4 years to 6 months, (d) restructuring and standardizing the training curriculum, (e) greater use of simulators in training and evolution, (f) better control of hiring rates, (g) further research and development on controller selection, performance measurement and training techniques, and (h) improved accounting and allocation of training costs. The new program is expected to turn out qualified controllers with more relevant and more uniform training and to provide greater assurance of maintaining controller quality while saving millions of dollars annually.

### An Evaluation of Selected Class A Schools

ANITA S. WEST, RALPH E. WILLIAMS, ALMA E. LANTZ, and SANDRA BLEISTEIN  
*Denver Research Institute, University of Denver*

Four separate reports are presented describing the evaluation of technical training in United States Coast Guard schools. Part I of each report describes the common purpose and methodology of research and presents a summary section with results and recommendations across all schools. Part II of each report describes the physical facilities, the living and training environments of students and instructors, and a brief summary of support services (media support, printing, counseling, etc.) available to the schools sharing the common physical facilities. Part III of each report is school specific and relates to the analysis of the data provided for each school for which the report is relevant. Following Part III is the recommendations section. The purpose of each study was to modify essential curriculum elements and to recommend the exclusion of nonessential elements responsible for attrition. The study also examined possible reductions of entrance-test cutting scores to levels that may require curriculum modification but that would not reduce subsequent job performance. All recommendations considered procedures that are likely to produce modification in curriculum and cutting scores with the least cost and disruption to the school system. Specifically, then, the study accomplished three purposes. The first was to evaluate curriculum elements responsible for attrition and to determine if the elements are necessary to support on-the-job performance requirements at the E-4 pay-grade level. The second was to establish entrance-test cutting scores on predictor variables and to indicate likely consequences of further lowering of these scores. The third was to recommend feasible training or administrative actions to reduce attrition where the curriculum elements causing attrition (a) was necessary to support on-the-job performance requirements at the E-4 pay-grade level or (b) were required to support other curriculum elements that support on-the-job performance requirements.

MS. 1208 (52 pages/paper: \$6; fiche: \$2)

**Selected Class A Schools—Volume One:  
 Aircraft Repair and Supply Center, Elizabeth City, North Carolina**

MS. 1209 (52 pages/paper: \$6; fiche: \$2)

**Selected Class A Schools—Volume Two:  
 USCG Reserve Training Center, Yorktown, Virginia**

MS. 1210 (69 pages/paper: \$6; fiche: \$2)

**Selected Class A Schools—Volume Three:  
 USCG Training Center, Petaluma, California**

MS. 1211 (95 pages/paper: \$7; fiche: \$2)

**Selected Class A Schools—Volume Four:  
 USCG Training Center, Governors Island, New York**

**MS. 1212** (22 pages/paper: \$4; fiche: \$2)

**Familiarity with Subordinates' Jobs:  
Immediate versus Secondary Supervisors**

LLEWELLYN N. WILEY

*Occupational and Manpower Research Division, Lackland Air Force Base, Texas*

*U.S. AFHRL Interim Report, 1975 (June), No. TR-75-7.*

A test was made of the hypothesis that only immediate supervisors know enough about their subordinates' job activities to render job performance ratings. Pairs of supervisors who rated the quality of performance of supply airmen had identified themselves as immediate supervisors and other-than-immediate supervisors. These pairs, working independently, rated the same airmen on how well they performed individual tasks. The supervisors were asked to rate each task that they were sure the subordinate did, but they were not told which tasks the subordinate had identified. The selection of tasks were tallied against the responses made by the incumbents on the same inventory. An incumbent's responses were relative-time-spent ratings. Tasks were classified by a scale of the percentage of time spent, and two supervisory levels were compared in terms of the percentage of tallies (agreements) with the incumbents. The tallies were greater for tasks on which the airmen spent more time, but there was no detectable difference between immediate and other supervisors. It was concluded that in the Inventory Management, DAFSC 645XO, and Materiel Facilities, DAFSC 647XO, career ladders, at least, it was possible to obtain other supervisors who were as familiar with their subordinates' jobs as "immediate" supervisors.

**MS. 1213** (185 pages/paper: \$11; fiche: \$4)

**Management of Social Incentives in Air Force Technical Training:  
A Field Experiment**

MILTON D. HAKEL, RICHARD J. KLIMOSKI, and MICHAEL T. WOOD  
*Ohio State University, Research Foundation*

*U.S. AFHRL Final Report, 1975 (Sept), No. TR-75-11.*

The rationale, design, and results of a field experiment that explored the use of social incentives in Air Force technical training is presented. Four experimental treatments of varying complexity were introduced sequentially into a resident training avionics course: (a) In the control condition, students were intensively interviewed on two successive days; (b) a weak form of intervention was presented in which students were given a booklet on the importance of leadership and Air Force expectations of student leadership; (c) classroom leadership behavior was defined and students nominated fellow students who displayed such leadership; (d) to Step c was added group discussions, an acquaintance program, good setting regarding leader behaviors, a student planning form regarding the behaviors, and role-playing sessions. Dependent variables included block exam scores, time to complete blocks, and student attitudes. Results showed that none of the experimental systems had an appreciable effect on performance. One system, however,

did have a significant positive effect on student attitudes toward fellow trainees. Various alternative explanations are proposed, along with suggestions for future research.

**MS. 1214** (18 pages/paper: \$4; fiche: \$2)

**Job Needs and Satisfaction: A Comparison of High-Risk and Low-Risk Occupations**

VESETH S. YATES, and SHELDON ZEDECK  
*University of California, Berkeley*

The relationship between satisfaction and need hierarchies as a function of high risk (HR) or low risk (LR) in a job was examined. Results indicated that there were significant differences in satisfaction for a set of 25 job characteristics between HR ( $N = 93$ ) and LR ( $N = 82$ ) workers. In contrast, there were no real differences in need hierarchies for the two groups, nor was the HR group homogeneous in its needs as compared to the LR group. A possible explanation for these results is that since the samples of workers were experienced, their expectations and needs were different or fulfilled, as opposed to their expectations and needs when they first entered their jobs. Future research to include a young set of workers is suggested.

**MS. 1215** (32 pages/paper: \$5; fiche: \$2)

**Interorganizational Relations: An Annotated Bibliography**

JEFFREY T. WALSH  
*Institute for Social Research, University of Michigan*

This bibliography contains 65 published works dealing with relationships among complex organizations. Only works that at least implicitly seemed to acknowledge Terryberry's (1960) basic assumption that organizations constitute the important environment for other organizations were included. Thus, works that have treated the environment as an entity to be dimensionalized apart from the organizational units that constitute it have been excluded. All major works to date have been included, along with most minor contributions. All journal articles are abstracted and notes are provided. In addition, all works are classified in terms of both methodology and theory. Four methodological dimensions are identified: type of article (theoretical, review, case study, comparative study, and laboratory study); source of data; generalizability; and level of analysis (intraorganizational level, pairwise, organization set, and interorganizational field). With respect to theory, studies are classified within four areas: perspective (elitist, organizational); dimensions (resource exchange, overlapping membership, autonomy/dependence relations, and interfirm organizations); dynamics (conflict, cooperation, co-optation, bargaining, and coercion); and a miscellaneous category consisting of three specific content areas (decision making, innovation, and boundary conditions).

MS. 1216 (229 pages/paper: \$13; fiche: \$6)

**Program Development: A Manual for Organizational Self-Study**

JUDITH BLANTON and SAM ALLEY  
*Social Action Research Center, Berkeley, California*

This manual describes a cyclical model for use by human service projects in planning and assessing their progress and for managing their projects. Chapters deal with creation of the appropriate climate for the model, assessment of needs, setting goals and objectives, analysis of the force field, determining strategies, setting up feedback systems on needs (evaluation of relevance), strategies (evaluation of procedures), objectives (outcome evaluation), and integrating feedback into the ongoing process of decision making. An appendix is included that relates the model to treatment planning with individual clients and to contract learning.

**ENGINEERING PSYCHOLOGY**

MS. 1217 (46 pages/paper: \$5; fiche: \$2)

**Fully Proceduralized Job Performance Aids: Guidance for  
Performing Behavioral Analyses of Tasks**

EDGAR L. SHRIVER  
*URS/Matrix Research Company, Falls Church, Virginia*

*U.S. AFHRL Final Report, 1975 (June), No. TR-75-38.*

The initial tryout of fully proceduralized job performance aids (FPJPA) for the UH-1H helicopter indicated that although they met all the format requirements for FPJPA, they did not produce the expected level of task performance when used by novice and apprentice Air Force maintenance personnel. It was hypothesized that the FPJPA did not contain all of the cues and directions necessary for the novice and apprentice personnel. This report describes a method for identifying such cues and responses during a "hands on" tryout of the initially produced task steps. This method is called the behavioral analyses of tasks (BAT). The application of this BAT to many tasks produced an "unfolding" effect from pictorial to pictorial. It also identified many important but unplanned cues in the troubleshooting routines. Its application to the eleven UH-1H tasks used for the evaluation raised the performance level of both novice and apprentice personnel. FPJPA of reasonable effectiveness will probably be developed with less rigorous "hands on" analyses of tasks than the BAT proposed in this report, provided that the FPJPA so developed are followed by a "cut and try" process of improvement. The accomplishment of a BAT requires highly skilled and tedious work on the part of each task analyst and its use will probably be viewed by some as too expensive. But the author's experience indicates that its timely use in the FPJPA development cycle will be necessary for the consistent production of a quality product at a minimum cost.

**MS. 1218** (86 pages/paper: \$7; fiche: \$2)

**Toward a Methodology for Man-Machine Function Allocation in the  
Automation of Surveillance Systems—Volume I: Summary**

C. DENNIS WYLIE, ROBERT A. DICK, and ROBERT R. MACKIE  
*Human Factors Research, Inc., Goleta, California*

*Office of Naval Research Final Report, 1975 (July), No. TR-1722-F, Vol. I.*

A study was conducted to determine some of the performance implications of various degrees of automation in surveillance systems. The objective was to aid system designers of future surveillance systems in making trade-off decisions. A general functional taxonomy of surveillance systems was developed, and each function was considered in terms of the necessity of operator involvement versus the likely success of full automation, based on the present state-of-the-art and knowledge of recent successes and failures in automating surveillance system functions. A model of human information processing in surveillance systems was also developed, and various strengths and weaknesses of surveillance system operators were discussed in relation to the elements of the model. Observations were made on the extensive individual differences in performance among surveillance system operators and some of the reasons for these differences. Consideration was given to special problems in the design of system tests and evaluations, given these extensive operator performance differences and several other variables typically associated with surveillance system operations. The performance of superior operators as a design model for automation in surveillance systems was discussed.

**MS. 1219** (20 pages/paper: \$4; fiche: \$2)

**Use of an Interactive Query Facility (IQF)-Like Query  
Language by Nonprogrammers**

JOHN D. GOULD and ROBERT N. ASCHER  
*IBM Thomas J. Watson Research Center, Yorktown Heights, New York*

Using a computerized query (or question-asking) language to request information is a form of problem solving. In the future, query systems may be available to large numbers of people who are not skilled in the use of computer languages. This exploratory experiment attempts to examine separately the formulation, planning, and coding of queries. College students and middle-aged file clerks required about 10 hours to learn a query language that was somewhat similar to IBM's Interactive Query Facility (IQF) query language but that contained more function. They were then given 15 test problems that varied in complexity and quality of expression. Subjects were required to formulate, then to plan (writing each in their own words), and finally to code (in pencil) each problem. Results provide some suggestions about which problem variables affected which "stages" (i.e., formulate, plan, and code) in writing queries. For example, a poorly expressed problem, compared to a well-expressed problem, seemed to affect problem formulation time, but had no effect upon problem-planning or problem-coding times. Specific language constructions (additions to IQF), such as contextual

referencing and a new method to handle limited disjunctive problems, were shown to be useful. The types of coding errors that subjects made were identified and discussed. Several specific results are useful to the fields of human factors, man-machine studies, and engineering psychology.

**MS. 1220** (30 pages/paper: \$5; fiche: \$2)

**Visual Dynamics when Interrupting a Control Task to  
Search for a Peripheral Target**

GORDON H. ROBINSON and JEFFREY R. BOND  
*University of Wisconsin—Madison*

The dynamic patterns of eye and head movements were measured when the subject interrupted a manual control task to visually process of peripheral, digital target. The initial pattern of movement differs both quantitatively and qualitatively from that reported in "classic" studies without the competing, central, ongoing task. A compensatory eye and head movement period was observed wherein the head began movement toward the target while fixation remained on the control task display. The initial saccadic eye movement was delayed approximately 300 milliseconds over the classic paradigm. Control order (plant dynamics) and control signal bandwidth have effects on this pattern as does the status of control at the time search is commanded.

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