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FACTORS INVOLVED IN THE ADJUSTMENT OF LOW APTITUDE PERSONNEL TO THE NAVY AND THEIR USE FOR PREDICTING REENLISTMENT

prepared for
Naval Personnel Research and Development Center
San Diego, California

Applied Psychological Services
Science Center
Wayne, Pa.

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Philip J. Federman Arthur I. Siegel
Martin R. Lautman

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ABSTRACT

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PREFACE

The present study was completed over a three year time period. The initial study planning, along with the development and administration of the various questionnaires, was completed by the Naval Personnel Research and Development Laboratory. Applied Psychological Services assumed the responsibility for performing the data analyses, on the basis of the questionnaire responses provided by the Naval Personnel Research and Development Laboratory, and for preparing this report. Accordingly, the work of approximately the first 2.5 years of the total effort was performed by the Naval Personnel Research and Development Laboratory. The work of the final half year was completed by the Applied Psychological Services.

SUMMARY

Men who, until 1966, were rejected from the Armed Forces because of low mental aptitude are now accepted into the services. With the advent of the all-volunteer force, these low aptitude personnel may become more important as a group by the mere increase in their number. For this reason, a better understanding of this type of man is needed. Specifically, data are required relative to his motivations, perceptions, attitudes, need structures, and other characteristics influencing his adjustment and behavior. Such data can provide a basis for improving the utilization and effectiveness of these personnel.

Purpose

This study represents an extension and elaboration of a set of prior studies and identifies and defines the factors related to the adjustment of low aptitude personnel during their first enlistment. The present report is based on the results of questionnaires administered at various points during the enlistment--first week of recruit training, last week of recruit training, one year after entering the Navy, and at the termination of a two-year enlistment. Subsequent to the identification of the adjustment factors, the factors were related to the probability that these low aptitude personnel will be recommended for reenlistment and to the probability that they will reenlist. Additionally, this report describes the reactions attitudes, and perceptions of these personnel to selected aspects of Navy life.

Findings

Approximately one-third of the 1837 low aptitude personnel included in the initial sample attributed their enlistment to the education and training they would receive in the Navy. Other frequently identified reasons for enlisting in the Navy were desire to travel, Naval career, patriotism, postpone the point at which future career plans would be made, and complete the military obligation as soon as possible. The persons who influenced the low aptitude men to enlist in the Navy were usually the father, mother, and Navy recruiter. However, approximately one-fourth of the sample enlisted in the Navy on their own volition and were not influenced by any outsiders.

One fourth of the sample, at the beginning of the enlistment, were interested in the possibility of a Naval career. This proportion was increased to 35 per cent by the end of recruit training. Approximately 60 per cent of the sample were not certain of their plans for reenlistment at the beginning of recruit training, but this proportion dropped approximately five per cent by the end of recruit training.

The low aptitude sailor indicated that his most important on-the-job needs lie in the social area. Most of the sample claimed that the most important aspects of their job was the kind of people they work with and their supervisor. Next in importance were the aspects of the work itself, such as the specific duties and whether they were interesting and challenging.

The results from four questionnaires were factor analyzed to developing constructs that could be used to describe the low aptitude man. The factors that emerged from the questionnaires were:

- Perceptions of Navy Life--general living and working conditions, treatment received, freedom to follow drives
- Work and Person Interaction--responsibility (satisfying duties and obligations, knowing right from wrong), adjusting to people and activities
- Supervisor Consideration--empathetic treatment, assistance, setting of emulative behaviors by supervisors
- Perception of Physical Regimen of Recruit Training--expectations and evaluations of the physical aspects of training
- Inducements to Enlist--technical training, educational benefits when returning to civilian life, time to reflect on the future
- Preenlistment Employment Record--job experiences, salary on last civilian job, time between school and enlistment
- Encouragement by Others to Enlist in the Navy--friends, siblings, parents
- Self Realization--future vocational expectations, fulfillment of one's potential
- Educational Stimulation--highest education achieved by parents
- Sick Call Treatment--care received on sick call during recruit training
- Satisfaction with Rate--qualifications for the assigned rate, desire for assigned rate, feelings about subsequent duty assignment
- Technical Schooling--attendance at "A" and "P" schools, instruction received, use of training received in post school assignments

- Affect of Recent Navy Changes--assistance to families, rotation and retention, living and housing conditions, personal services, leave and liberty

- Satisfaction with Superiors--treatment received from commissioned and noncommissioned officers

- Value Judgments Relative to Navy Life--assigned to important jobs, physical training, participation in sports, standards of conduct and appearance

- Facilities for Studying--availability of study facilities at duty assignment

- Evaluation of Navy Life--living conditions, treatment received, interpersonal relations, physical facilities

- Interactive Skill Evaluation--comparison of Navy skill requirements with those of civilian life

- General Satisfaction--morale, contentment, pay grade

- Time in Rate and Rating--months in rating and pay grade

- Watch Schedule--watch schedule on shore duty and sea duty

A set of discriminant function analyses was completed to provide a basis for predicting whether or not a low aptitude man will be recommended for reenlistment and whether or not once recommended for reenlistment, he will reenlist. Quite adequate predictiveness was found by the time that a recruit was at the end of his recruit training.

Conclusions

1. The questionnaire technique can be employed for providing the information for predicting whether or not a recruit will be recommended for reenlistment and whether or not he will actually reenlist. However, a cross validation of the predictive power of the discriminant functions, reported here, on an independent sample of low aptitude personnel seems warranted.

2. The low aptitude personnel appear to be more concerned with the satisfaction of social needs on the job than with other job satisfying attributes. Methods of satisfying these needs may be found through appropriate leadership, supervisory methods, and organizational structure.

3. The adjustment of the low aptitude man to the Navy was held to be complex and varying in response to the changing requirements placed on him by his Navy assignments and responsibilities. An understanding of the nature of these complex interrelationships would be required to understand fully the low aptitude man's perceptions of Navy life.

4. Individual differences are so great and the number of variables so large that study of individuals, rather than groups, seems indicated for fuller insights into the dynamics of Navy adjustment.

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Philip J. Federman
Martin R. Lautman
Arthur I. Siegel

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CHAPTER I

INTRODUCTION

Men who, until 1966, were rejected from the armed forces because of low mental aptitude are now accepted into the services. With the advent of the all-volunteer force, these low aptitude individuals (called Category IV individuals), through the mere increase in numbers, may take on even added significance. For this reason, a better understanding of this type of man is needed. Specifically, data are required relative to his motivations, perceptions, attitudes, need structures, and other characteristics influencing his adjustment and behavior. Such data can provide a basis for improving the utilization and effectiveness of these personnel.

Characteristics of the Category IV Man

Category IV men have been described as follows (Lucas, 1966): (1) 10th-30th percentile on the AFQT, (2) one-third have at least completed high school, (3) reading level for a majority is at the 6th grade level or above, and (4) 90 per cent qualify in at least one aptitude (i. e., achieve over a certain minimally acceptable score) and 50 per cent qualify in two or more areas.

The racial composition of both regular Navy recruits (i. e., Categories I-III) and Category IV recruits was described in a report by Katz and Goldsamt (1971). Whereas three per cent of the regular recruits are black, 33 per cent of the category IV recruits are black. Katz and Goldsamt also reported, from other studies, that Category IV men generally come from a lower socioeconomic level and are less culturally advantaged (in terms of white, middle class advantages) than Category I-III men. Those Category IV men who were products of broken homes (due to divorce or death) were significantly younger when their parents separated or died than were their counterparts in Categories I-III.

Goffard, Showel, and Bialek reported Category IV men to be less employable in civilian life than those of the upper categories and that one-third were unemployed and seeking employment during the year preceding entry into the service. This 33 per cent figure may be compared with a 17 per cent rate of unemployment for Category I-III men.

In terms of general aptitudes, Dudek (1967) found Category IV personnel to score low on arithmetic reasoning and mechanical principles tests. He also reported that their vocabulary was somewhat meagre.

The incidence of disciplinary problems appears to be greater for Category IV personnel than for others. However, as one study indicated, the principle disciplinary behavior has involved unauthorized absences (Anderson et al., 1969). Dudek (1967) reported that Category IV personnel have a higher percentage of repeat offenders than Category I-III personnel. Also, as determined in one study, 26 per cent of the Category IV men had been subjected to disciplinary action, whereas 11 per cent of the higher mental level categories had been subjected to such action.

Although advancement in pay grade may be slower for Category IV personnel, they do advance through the higher pay grades. A distribution of Category IV personnel, by rate in the Navy, was included in a letter directed to all Navy flag officers, commanders, commanding officers, and officers in charge on 19 September 1972.* According to this letter, at the end of the fiscal year 1972, there were 43,674 Category IV personnel in the Navy. The breakdown of this group was:

1. Petty officers--8 per cent
2. First class petty officers--12 per cent
3. Chief petty officers--9 per cent
4. Senior and master chief petty officers--4 per cent

According to the same letter, at the end of fiscal year 1972, there were 206,000 persons in the Navy career force with more than four years service; 24,000 of these were in Category IV (i.e., approximately 12 per cent). Of the Category IV personnel in the Navy, 58 per cent were petty officers.

Retention has become an increasingly important issue relative to all military services and personnel. Dudek (1967) reported the following figures relative to retainable Category IV personnel: 52 per cent in an Air Force study, 40 per cent in an Army study, and 76 per cent of Army administrative inductees. Anderson et al. (1969) reported a Navy retainable rate of 82 per cent. Katz (1967) reported that, after eight months of service, 93 per cent of the Category IV and 97 per cent of the personnel in Categories I-III were still in the Navy. Although fewer Category IV men were retained in the Navy across all ratings, for certain ratings the rate of retention was higher for Category IV personnel than for others (Cory, 1971). The 12 Naval ratings considered by Cory to be most suitable for Category IV personnel, based on the rate of retention, were: Aviation Machinist's Mate, Aviation Structural Mechanic, Boilerman, Machinist's Mate, Ships Serviceman, Steward, Commissaryman, Boatswain's Mate, Gunner's Mate, Enginman, Shipfitter, and Storekeeper.

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* The letter, dated 19 September 1972, was prepared by David W. Bagley, Vice Admiral, USN, Chief of Naval Personnel.

Predictors of Effectiveness

Dudek (1967) reported a study performed in the Navy in which it was found that civilian educational achievement level was a more valid predictor of "military effectiveness" (i. e., completion of active duty and the recommendation for reenlistment) than the AFQT score. Plag and Goffman (1967) indicated that a Category IV person had a probability of .5 or better of being effective in the military if he had at least eight years of school, no expulsions or suspensions from school, no history of family instability, and if he enlisted for at least four years.

Plag and various associates have, in later studies, identified different combinations of variables which might be used for predicting the military effectiveness of Category IV personnel. In one study, Plag (1968) collected data on 11,000 post 1960 enlistees. Four characteristics were found to be related to military effectiveness: years of schooling, number of suspensions and expulsions from school, AFQT score, and number of arrests. The probability of effective performance by a Category IV recruit with an AFQT score of 25-30 and who is a high school graduate with no history of arrests, suspensions, or expulsions from school was reported to be .859. The probability of effective performance for a Category IV applicant with the same characteristics, except that only eight years of school were completed, was .521. Plag et al. (1970) presented probability tables for predicting the military effectiveness of New Standard Marines.

Multiple regression methods were used by Plag et al. (1970) for predicting the military effectiveness of 1,255 Category IV graduates of recruit training. Eight statistically significant predictor variables were isolated. These included such variables as educational level, marital status, age, and race.

Purposes of the Present Study

The present study represents an elaboration and extension of a systematic set of studies performed by the Naval Personnel Research and Development Laboratory. In the first study of the series (Katz & Goldsamt, 1971), the results were presented from two questionnaires administered to a cohort group of Navy Category IV personnel. The first questionnaire was administered during the initial week of boot camp, while the second was administered at the conclusion of boot camp. Specifically, Katz and Goldsamt found that:

Certain groups of Category IV men shifted more than others in valuing the importance of particular needs. Thus, men with educations of eighth grade level or less experienced the greatest increase in considering it important to be assigned to work they liked best. Blacks shifted less than did other racial groups, with respect to valuing fast promotions to more important jobs. Whites and others (excluding blacks), men from the Northeastern, Northern and Western United States, and those from foreign countries, showed the greatest increase in valuing the importance of obtaining technical training.

and

At the end of recruit training, rather than at the beginning, proportionally more Category IV men portrayed the Navy as an organization providing: long separations from home and family, more chances than civilian life to work on important jobs, and greater opportunities for fast promotions to more important jobs. In contrast, after completing recruit training, proportionally less men characterized the Navy as satisfactorily offering: fair treatment, good supervisors, chances to discuss problems with those of higher rank or responsibilities, chances to work with good people, requirements for maintaining good standards of conduct and appearance, chances to engage in physical training or sports events, opportunity to perform "a man's job" and the kind of work liked best.

The second report (Goldsamt, 1973) relative to recruit training, indicated that:

Category IV men substantially overestimated the actual difficulty of adjusting to physical training, marching, classwork and following orders. Job-related and interpersonally related motivating factors were judged most important on both measurement occasions. Having sufficient off-duty time, obtaining technical training and obtaining fast promotions to more important jobs increased in importance during recruit training. Consistent yet slight shifts in perceived importance occurred on 20 of 21 factors. The importance of interpersonal relations factors shifted most on four item clusters. Category IV preferences for the Navy setting in satisfying interpersonal relations needs declined most primarily due to attitudinal shifts of upper Category IV men, whites and men disliking Navy life or uncertain of their attitude.

Following recruit training, the Navy was much less characterized as a setting containing: fair treatment; good supervisors; chances to discuss problems with those above them; chances to work with good people; requirements for maintaining good conduct/appearance standards; chances to engage in sports events or physical training; chances to do "a man's job" or the kind of work liked best. Study moderator variables clarified these attitudinal shifts in some instances.

In a third study, Goldsamt (personnel communication) concluded that although attitudinal, biographic, and aptitude scores are related to enlistment completion for Category I-III and Category IV personnel,

> ...the results are not substantially greater than base rates (i.e., actual experience). As such, replacement and/or supplement of current recruit training screening procedures with a biographic inventory and test score profile instrument does not seem warranted at this time. Such procedures did not reduce probabilities of misclassification in the present studies.

The present report attempts to elaborate on these prior Naval Personnel Research and Development Laboratory works by identifying and defining the factors related to the adjustment of Category IV personnel over their first enlistment. Accordingly, the present report is based on the results from two questionnaires which were administered during recruit training, along with the results from a questionnaire administered nine months after the completion of boot camp. Specifically, the present study attempted to define certain of the factors contributing to the adjustment of Category IV personnel at three discrete points during their first enlistment and to relate these factors to the probability that such personnel will reenlist or be recommended for reenlistment. Additionally, the report describes the reactions, attitudes, and job perceptions of Category IV personnel to selected aspects of Navy life at these three discrete career points. Finally, descriptive data, related to the reactions to the Navy of Category IV personnel immediately prior to the end of their first enlistment are presented.

Data such as that presented here can contribute to the effectiveness of an all volunteer Navy in a number of ways. The data and findings can provide the required insight for developing quantitative techniques for predicting the success of Category IV personnel in the Navy. The data can also provide a basis for identifying any special management training requirements for the supervisors of Category IV personnel. Finally, the data and findings can provide a number of required insights relative to career counseling and increasing the adjustment of Category IV personnel to the Navy.

Concepts and Considerations Relative to the Quantitative Analysis of Change

The present report focuses on discrete points in the career of the Category IV sailor. By implication, fundamental premises are that measurable changes in the factors affecting sailor reaction to Navy life occur over time and that these factors are identifiable and measurable. However, we note that the measurement of change is not without methodological problems.

As an example, investigators in the field of learning theory have typically employed repeated measures analysis of variance designs followed by a trend analysis to obtain a good first approximation of the form of the change function. Here, the investigator is usually not interested in testing the null hypothesis of no change as a function of time, but rather in determining the most likely form of the function. In this context, Grant (1962) has argued against the hypothesis testing approach and has offered an argument in favor of the parameter-estimation strategy, where empirical data are fitted to some theoretically derived function. Unfortunately, the traditional analysis of variance approaches do not readily permit the assessment of change on an individual basis.

A mixed model, multivariate analysis of variance, and its companion, multiple discriminant function analysis, can be used to assess complex change. Here, the concern is with the between group covariance structure rather than within group structure, which is at issue in factor analysis (Jones, 1966). The most widely used univariate analysis of variance model in this context is the mixed model analysis which, for its repeated measures portion on each subject, is assumed to have correlated sampling variation. However, Bock(1963) has pointed out that, in studies of growth and change, it is more plausible to assume that the variation of subjects about their true time curves will be governed by autoregression. According to Bock, no useful exact univariate analysis of variance model for the repeated measures design appears feasible in the presence of this type of error. It therefore follows, according to Bock, that any rigorous procedures for statistical inference from repeated measurements data must be developed from a general multivariate sampling model. Bock (1963) and Jones (1966) have presented a variety of multivariate applications.

Differential Approach

Differential theorists (e.g., Cattell, 1966) have treated the patterning of individual differences as a function of age. According to Wohlwill (1970), much of Cattell's work has been inspired by the differentiation hypothesis of the development of intelligence.

Various extensions of factor analysis have also been developed for treating differential data over time. Tucker (1963) extended factor analysis into a three dimensional and higher order space and presented a progress report on the use of the technique for the measurement of change. For example, each of a number of individuals may rate each of a group of objects as to each of a number of attributes of the objects. Such ratings would form a three way matrix as suggested by Osgood, Suci, and Tannenbaum (1957) in connection with their research on the semantic differential technique. A fourth way of classification would occur if measurements were taken on the same subjects on each of several occasions. Harris (1966) has prepared an entire chapter for the Handbook of Multivariate Experimental Psychology on the topic of connonical factor analysis models for the description of change. While different methods depend on the specific definition of change employed, the method outlined by Harris (1963) rests explicitly on fixing the factor measurements for individuals and then observing differences, weighted in some fashion, between the correlations with the factor of a variable on the two testing occasions.

Interindividual differences involving longitudinal changes can be treated using several kinds of approaches (Wohlwill, 1970). At the simplest level, people can be differentiated in terms of the characteristics of their developmental functions. In the case of the Wetzel grid (Wetzel, 1947), individual differences are represented as variations around some assumed prototype function. A more complex case is where longitudinal data are used to separate out different types of changes in factorial structure. The factors stable over time point to continuity and the others suggest that some transformations have occurred. If factorial invariance has been established over time, then a given person's functioning or attitude may be specified on that dimension at different points in time, but only for those factors demonstrated to be invariant over time (Emmerich, 1964, 1968; Wohlwill, 1970). It might also prove feasible to undertake such analyses with respect to purely bipolar dimensions such as passive-aggressive. For example, the functional meaning of a military recruit's standing on a passive-aggressive scale late in training might be quite different depending on whether he has been consistently passive or aggressive early in training or even earlier during childhood. Fleishman's well-known work in the area of psychomotor skill at successive stages of practice (Fleishman, 1966) constitutes a slightly different approach within the differential conception of change. He has shown that any gain in performance occurring later in practice that comes from improved comprehension, a cognitive factor in skill acquisition, will be a gain by those low in cognitive aptitudes. Hence, cognitive aptitudes have a negative correlation with psychomotor gains over time. While the Fleishman studies have not typically been processed in terms of gain scores, Cronbach and Furby (1970) indicate that cognitive abilities make their contribution at different times for different persons, and that gains at any one time are due to different processes for different persons.

Synthesis of Competing Methodologies

Workers in the area of change measurement, according to Wohlwill (1970), require a willingness to transcend the traditional roles into which behavioral scientists are usually cast, i.e., the experimental vs. clinical (differential) roles (Cronbach, 1957). Wohwill contends that an investigator should couple the methodologies of the experimentalist and the differentialist. A good example of such blending of methodologies has been presented by Campbell and Stanley (1966) and was later extended by Gottman, McFall, and Barnett (1969). Their discussions of quasi-experimental designs for measurement of change, while intended primarily for the design of educational research and for application in field settings which often involve intact groups, are generally applicable to the problem of measuring change longitudinally. A complex example is the Stanley and Campbell multiple time series design which essentially entails measuring an experimental group both before and after the experimental treatment, so that the effects can be assessed both directly in terms of the shift in the behavior occurring after treatment, and in comparison with the overall pattern of change over the same time period exhibited by a control group (cf Gottman et al., 1969).

Persisting Dilemmas

Three persisting dilemmas in the measurement of change have been rather well summarized by Bereiter (1963). The first was termed the over-correction-under-correction dilemma and concerns the reversal of findings that often occur when one turns from raw change scores to residual change scores. This difficulty has been traced by Bereiter to the failure of investigators to correct for unreliability in pretest scores. The second dilemma has been termed the unreliability-invalidity dilemma and stems from the fact that high reliability of change scores usually require low test-retest correlations. Since the test instrument under these conditions may not measure the same thing on each of the several occasions, the change scores could be regarded as meaningless. Bereiter concludes that the meaningfulness of change scores does not depend on a test instrument measuring the same thing on each of several occasions and that the dilemma is therefore unjustified. The final dilemma, considered by Bereiter, relates to the option of the investigator to either measure changes objectively as a difference between scores on two occasions (physicalism) and measuring changes directly as subjective dimensions lacking an underlying physical continuum. According to Bereiter (1963), only the latter alternative permits interpretable comparisons between changes in psychological dimensions for individuals with different initial standings.

Recent Developments

According to Cureton (1969), more recent writers have suggested that the gain score should be estimated by regression analysis rather than by simple subtraction. The several ways to do this are presented in the edited book by Harris (1963). Manning and Du Bois (1962) have concerned themselves with the prediction of gain in a training course using two types of partial correlation, the correlation between the independent variable and the end score, with the effect of the initial score eliminated either from both or only from the end score. An interesting approach within the correlation-regression tradition has been developed by Tucker et al. (1966). They have distinguished between two independent parts of the true gain score. One part is assumed to be independent of the initial test and another part is assumed to be dependent on the initial test. Their formulas provide for estimating these components of the true gain variance. They have also compared their model with earlier difference models and regression models. Recently, Cronbach and Furby (1970) have argued somewhat convincingly that investigators who ask questions regarding gain scores would ordinarily be better advised to frame their questions in other ways. Unfortunately, these static correlation and regression methods may show little agreement with their dynamic counterparts (Vroom, 1966). According to Vroom, dynamic correlation methods would seem useful in those situations in which different amounts or directions of change have occurred in independent variables while other variables have remained constant.

In the present study, a factor analytic approach was followed. Thus, the thinking of Cattell, of Wohwill, and of Harris is adopted. The factor analytic approach avoids the difficult problems associated with the measurement of actual change scores but also fails to provide the interesting insights provided by such difference measurement. In a sense, the factor analytic approach allows for isolation of descriptive change--a necessary precursor to quantitative measurement.

CHAPTER II

METHOD

The present study employed the factor analytic approach to the measurement of change. Specifically, the factorial structure of responses to attitudinal/motivational questions was examined for recruits at four points in time during their initial enlistment. The resultant factorial structures were then examined for invariance/change over time. For predicting later reenlistment at each of three points in time (early in boot camp, end of recruit training, and nine months after service entry), the multiple discriminant function method was employed. This method again emphasizes the factorial technique in relationship to predictive problems.

Questionnaire Development

A self- administering questionnaire was employed as the data collecting vehicle in all cases. All questionnaire items were constructed in either the multiple-choice or the true-false format. These formats facilitate both administration (especially in the absence of trained administrator) and the task of the respondent. Several different areas of interest were investigated within each of the questionnaires. Each topic area was queried through a number of different items. In some cases, the same items were repeated in more than one questionnaire. Table 1 presents the topical categories investigated in each of the four questionnaires and the total number of items in each category.

The categories pertaining to general satisfaction anomic (pessimism), responsibility, and ego strength were included to provide some meaningful conceptual structure.

The general satisfaction scale included items developed by Ferman and Aiken (1964) as well as a number of new items related to positiveness of outlook. The anomie (pessimism) scale was designed to measure feelings of futility. Two anomie scales were used. One was developed by Ferman and Aiken (1964); the other was developed by the Naval Personnel Research and Development Laboratory. The responsibility items employed were those developed by Katz (1961, 1963). These items relate to a sense of obligation toward one's own possessions and the possessions of the group, a willingness to "pitch in" to do more than one's share in achieving group goals, and the ability to subordinate one's needs for comfort, recognition, and self-aggrandizement in achieving group goals. The ego strength items were also developed by Katz (1961, 1963) and are purported to measure self-confidence, self-assertion, and the courage of one's convictions.

Table 1

Subject Matter Categories Investigated in the Survey

	Questionnaire 1 Number of Items	Questionnaire 2 Number of Items	Questionnaire 3 Number of Items	Questionnaire 4 Number of Items
Background and demographic information	27	4	4	
Personal influences on joining and making a career of the Navy	17	11	2	
*Navy vs. civilian life on motivating factors	21	21	21	
*Importance of motivating factors	21	21	21	
*Career plans-reenlistment	2	2	2	1
*Responsibility	20	20		20
*General satisfaction	4	4		4
*Liking for people and activities	10	10		
*Anomie (pessimism) scale	10	10		
Draft lottery	2			
Reasons for reenlisting	12			
Expectations of recruit training	5			
Ego strength	18			
*Satisfaction of Navy life		1	1	1
Experiences in recruit training		65		
Assistance and counseling			2	2
Assignment after recruit training			3	13
Perceptions of treatment and facilities			8	
Adjustment to Navy life			1	
Assistance received			6	
Perceptions of Navy organiation			10	
Need to repeat part(s) of recruit training			2	
Treatment by supervisors/instructors			5	
Interpersonal relationships with supervisors/peers			2	
Utilization of training skills			3	
Utilization of civilian job skills				3
Period when career decision was made				1
Attitude toward Navy life			11	
Changes affected by Z-grams			16	
Present duty assignment				22
Evaluation of current supervisor				18
Shipboard hospitality				8
Desirable physical/mental conditions on active duty				8
Desirable working conditions on active duty				7
Education and training received on active duty				2
Desirable interpersonal relations on active duty				4
Evaluation of first enlistment				2
Opportunities in present assignment				6
Evaluation of duty stations				3
Evaluation of job duties				2
Perception of work as compared to others				1
Liberty overseas				1
Disciplinary actions				5
Navy pay				1
Benefits derived from Navy				5
Civilian plans				3
Motivations for reenlistment				1
Reasons for reenlistment				5
TOTAL	169	169	120	149

* *Items repeated in each administration*

Basic information was obtained through the questions included in the background and demographic information variables. In the first questionnaire, 27 items were subsumed under this category; the second and third questionnaires each contained four such items. Seventeen items in the first questionnaire, 11 in the second questionnaire, and two in the third questionnaire pertained to the influence that others had on the respondent for joining the Navy and making a career in the Navy. The respondent's personal reasons for joining the Navy were obtained through the reasons for enlisting variable. The 12 items included in this variable were part of Questionnaire 1. Two items were included in each of the first three questionnaires which related to the career plans of the respondents. The effect of the draft lottery on the respondent's enlistment in the Navy was investigated through two questions in the first questionnaire.

Navy and civilian life were compared on several different factors, all considered to be motivators for remaining in the Navy or returning to civilian life. The importance of these motivators was also evaluated. These evaluations were made in the first three questionnaires. Expectations of recruit training was investigated in Questionnaire 1 through five questions. Questionnaire 2 investigated reactions to recruit training through 65 questions. In the second, third, and fourth questionnaires, the respondents were queried on their satisfaction with life in the Navy.

The third questionnaire investigated the perceptions and attitudes of the Category IV man toward the Navy from the point of view of post recruit training experiences. Areas pertaining to duty assignments (three items), assistance (six items), counseling (two items), adjustment to Navy life (one item), and the attitude toward Navy life (11 items) were investigated. In addition, the following variables were investigated in Questionnaire 3: perception of treatment and facilities (eight items), perceptions of the Navy (10 items), changes affected by the Z-grams (16 items), treatment received from superiors (five items), interpersonal relationships (two items), need to repeat part(s) of recruit training (two items), and utilization of training skills (three items).

Four categories were included in the fourth questionnaire for longitudinal study. These were general satisfaction, responsibility, career plans for reenlistment, and satisfaction with Navy life. Aside from attitudes, perceptions, and motivations, the fourth questionnaire sought to examine the opinions of the Category IV men relative to their duty assignments, working conditions, supervisors, benefits received from the Navy, assistance and counseling received, duty stations, interpersonal relations, and shipboard hospitality.

Pretest

Each of the questionnaires was pretested (and revised) on a different sample and at a different phase in the study. An attempt was made to achieve representativeness in the pretest samples. The purposes of pretesting were to identify and correct any readability, ambiguity, and internal consistency problems within individual items. As a result of the pretesting, several modifications and revisions were made.

The first two questionnaires were pretested at the Naval Training Center, Orlando, Florida. Each of these samples contained 24 men who were drawn from all for AFQT categories.

The third and fourth questionnaires were pretested on 25 Norfolk-based sea duty and 25 Norfolk-based shore duty Category IV sailors. All of these respondents were in their first enlistment.

Following each pretest, each questionnaire was cast in final form for administration.

Research Sample

A cohort of 2586 Category IV men entering recruit training during February and May 1970 formed the sample to whom Questionnaire 1 was administered. No person in this sample had previously served in the armed forces or had been in the Reserve. The entire sample was composed of two year enlistees. Of the 2586 initial respondents, 1837 completed recruit training. These 1837 Category IV men constituted the sample for whom the data from the first and second questionnaires were based. These persons are more likely to represent a typical CategoryIV man in the Navy since all sample members completed recruit training.

The third questionnaire was mailed to the same 1837 men at their duty stations, but only 587 responses were received. For Questionnaire 4, which was also mailed to the 1837 Questionnaire 1 and 2 responders, a final return of 391 was obtained.

The sample of recruits was drawn from three recruit training centers. Fifty-four per cent of the 1837 recruits were stationed at the Great Lakes Training Center, 29 per cent were from the San Diego Training Center, and 17 per cent were assigned to the Orlando Training Center.

Administration of Questionnaires

The four questionnaires were administered at assessment points, such that Questionnaire 1 was administered when the recruits first entered boot camp; Questionnaire 2 was administered within the last few days of recruit training (three months after entering the service). Questionnaire 3 was administered six months after the sample completed recruit training (nine months after entry into the service), and Questionnaire 4 was administered at the completion of the enlistment (approximately 24 months after service entry).

These assessment points were selected because they were believed to represent strategic points in the first enlistment of the Category IV recruit. Additionally, it was believed that the interval between administrations was long enough to minimize any measurement effect that might occur from repeated administration of the questionnaires.

The first two questionnaires were administered to the group of respondents at their initial training station. The final two questionnaires were mailed to specific respondents at their then current duty stations. An introductory section, which contained an explanation of the purpose of the survey and specific instructions for completing the questionnaire, was included along with the questionnaires.

No followup was required for Questionnaires 1 and 2 since these were administered while the sample was in recruit training. However, Questionnaires 3 and 4 were mailed to each sample member. Five months after Questionnaire 3 was mailed, a followup letter, along with another copy of Questionnaire 3, was sent to the nonresponders. Each respondent to Questionnaire 2 (completers of recruit training) was included on the mailing list for the third questionnaire. Of the 1837 questionnaires sent in the first mailing, 404 were undelivered. Accordingly, the potential sample size was reduced to 1433. Three hundred ninety-nine (28 per cent) responded to the first mailing. The followup letter produced an additional 300 (21 per cent) responses, for a total of 699 (49 per cent). One hundred twelve of the returned questionnaires were unusable for various reasons. Consequently, the sample size for the third questionnaire is 587.

Questionnaire 4 was mailed to the same 1837 Category IV men who responded to the second questionnaire. The potential sample size was reduced to 1710 because 127 questionnaires were undelivered for various reasons. Followup letters and questionnaires were forwarded to nonresponders several months after the initial questionnaire was sent. The total number of questionnaires finally obtained was 391.

Reliability

Reliability, in terms of internal consistency, was investigated by using the Kuder-Richardson formula 8 for several of the self-descriptive scales. The data were obtained from the administration of the first questionnaire. The scales used for reliability purposes were the two anomie scales (taken individually and combined), general satisfaction, ego strength, liking for people and activities, and responsibility. Table 2 presents the reliability coefficients obtained for each scale. The number of responses used in obtaining the reliability estimates varied slightly from item to item because of the number of usable responses from the total number of questionnaires administered.

Table 2

Kuder-Richardson Reliability Estimates

Scale	Reliability
Anomie (Ferman-Aiken items)	.69
Anomie (new items)	.61
Anomie (combined)	.59
General satisfaction	.73
Ego strength	.68
Liking for people and activities	.83
Responsibility	.72

CHAPTER III

RESULTS AND DISCUSSION

The initial sections of Chapter III present and summarize the responses to the first three questionnaires, descriptively. However, only those questionnaire items that were not used in subsequent analyses (e. g., factor analysis, discriminant function analysis, cross-lagged analysis) to be discussed later in the chapter, are discussed in these descriptive analyses. These more sophisticated statistical analyses did not consider items for which more than 85 per cent of the sample selected the same option (thereby restricting the variance), those for which more than 60 per cent selected the "don't know" or "does not apply" option, and those items that were fundamentally categorical in nature. Following, the descriptive materials, the results of factor analyses and discriminant function analyses based on the data of the first three questionnaires are presented. These results form an integrated package relative to the points sampled during the careers of the men sampled. Finally, since Questionnaire 4 was administered at virtually the end of the enlistment period, the results from Questionnaire 4 are presented.

QUESTIONNAIRE 1

Description of Sample

At the start of their career in the Navy, 94 per cent of the 1837 sailors sampled were not married, five per cent were married, and one per cent were widowed or divorced. Ninety per cent had no other dependents than themselves, whereas eight per cent had one additional dependent and two per cent had two additional dependents.

The vast majority of the sample lived with one or both of their parents (80 per cent), six per cent lived with a guardian, five per cent lived either with friends, alone, or had some other living arrangement at the time they joined the Navy. Of the five per cent who were married, three per cent were living with their wives at the time they joined the Navy.

Nineteen per cent of the sample came from broken homes (while they were growing up). An additional four per cent lived with a widowed parent. However, 75 per cent lived with both parents when they were growing up. The majority of the respondents' mothers were employed either full time or part time (i. e., 36 per cent and 22 per cent, respectively). Thirty-five per cent of the mothers were "housewives" while the respondents were growing up.

The fathers of five per cent of the sample had made careers in the military. One per cent indicated that their fathers were still on active duty. It would appear that young men might be influenced in the direction of a career in the military if their own fathers had such a career.

Figure 1 presents the racial distribution of the 1837 men in the sample of Category IV personnel. The two primary racial groups, Caucasian and Negro, constituted 63 and 28 per cent of the sample, respectively. In a study performed by Katz (1971) in which almost 7000 Category I, II, and III Naval enlistees were surveyed, it found that 92 per cent of the sample was Caucasian and four per cent was Negro. The third most significant racial group in this study was Mexican Americans (4 per cent). Three per cent of the sample was equally divided among American Indians, Orientals, and Filipinos.

Two per cent of the sample had spent most of their lives in a foreign country. The remaining 98 per cent had spent most of their lives in the continental United States. The seven geographic regions in which the respondents lived are identified in Figure 2, along with the related percentages. The heaviest concentration of the sample lived in the North Central states (approximately one-fourth); following this group, in hierarchical order, were South Central states (20 per cent), Middle Atlantic (17 per cent), and the South Atlantic (16 states).

The majority of the sample did not interrupt their education to enlist in the Navy--79 per cent were not going to school at the time of their enlistment. However, 21 per cent did leave school to enlist. Of this 21 per cent, five per cent were part-time students and 16 per cent were full time students.

Attitudes and Influences Towards Enlistment

The respondents were asked to state one single factor that was most responsible for their enlistment in the Navy. About one-third replied that they enlisted for reasons of education and training, 11 per cent wanted a Navy career or a military life, and five per cent wanted a job. The remainder of the sample did not select the Navy because of career or job orientation. Rather, the Navy was selected for diverse reasons such as: (1) opportunity to travel (14 per cent), (2) patriotic reasons (11 per cent), (3) needed time to reflect on the course in life to pursue (11 per cent), (4) completing the military obligation as soon as possible (10 per cent), and (5) desire for independence and being out on "my own." (three per cent).

It appears that the most frequently mentioned reason for enlistment in the Navy was career oriented. Accordingly, if the Navy is to remain attractive to these individuals and assuming a continuation of this motivating influence, then career oriented Navy work is necessary for these individuals.

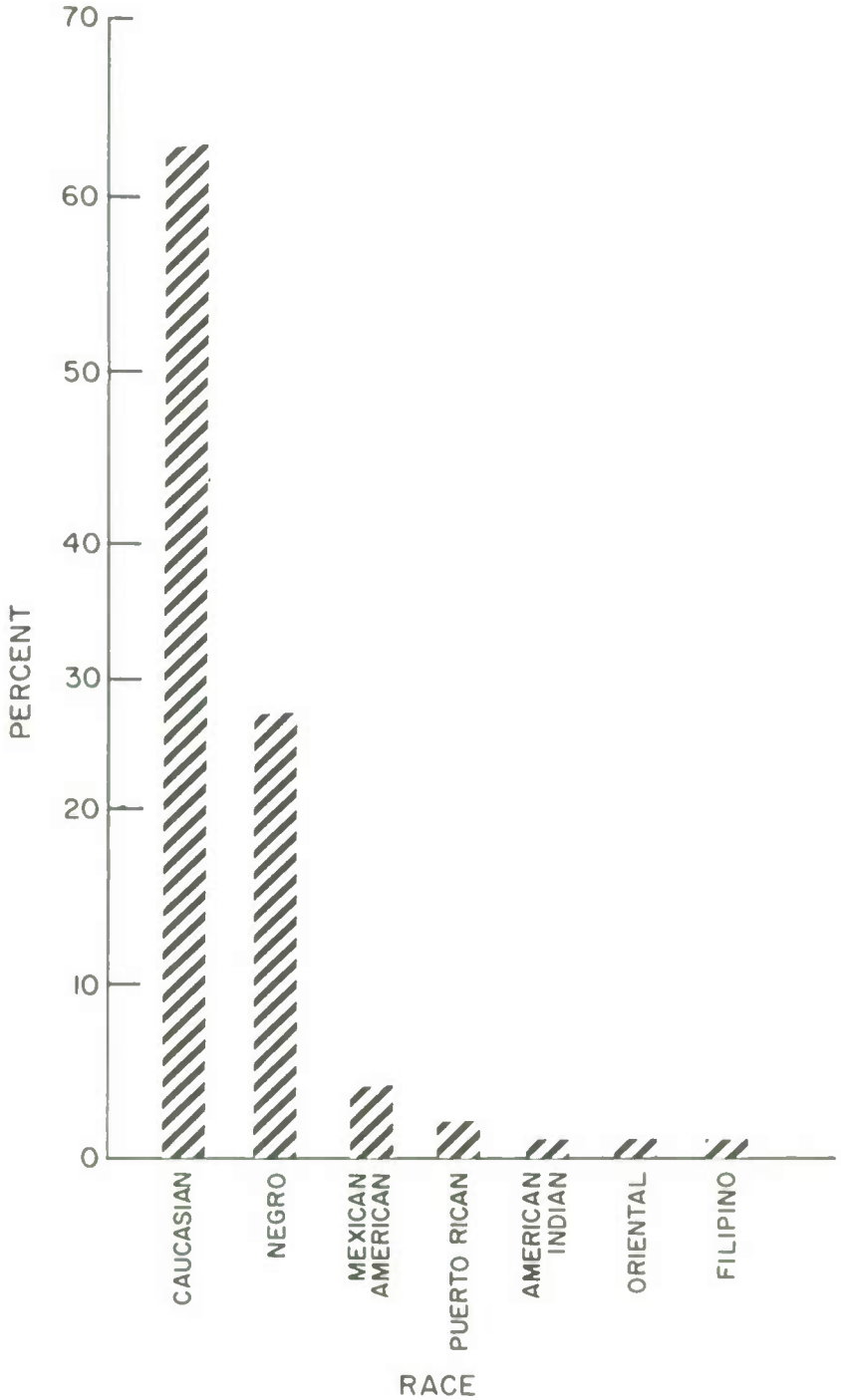

Figure 1. Racial distribution of Category IV personnel in first week of recruit training.

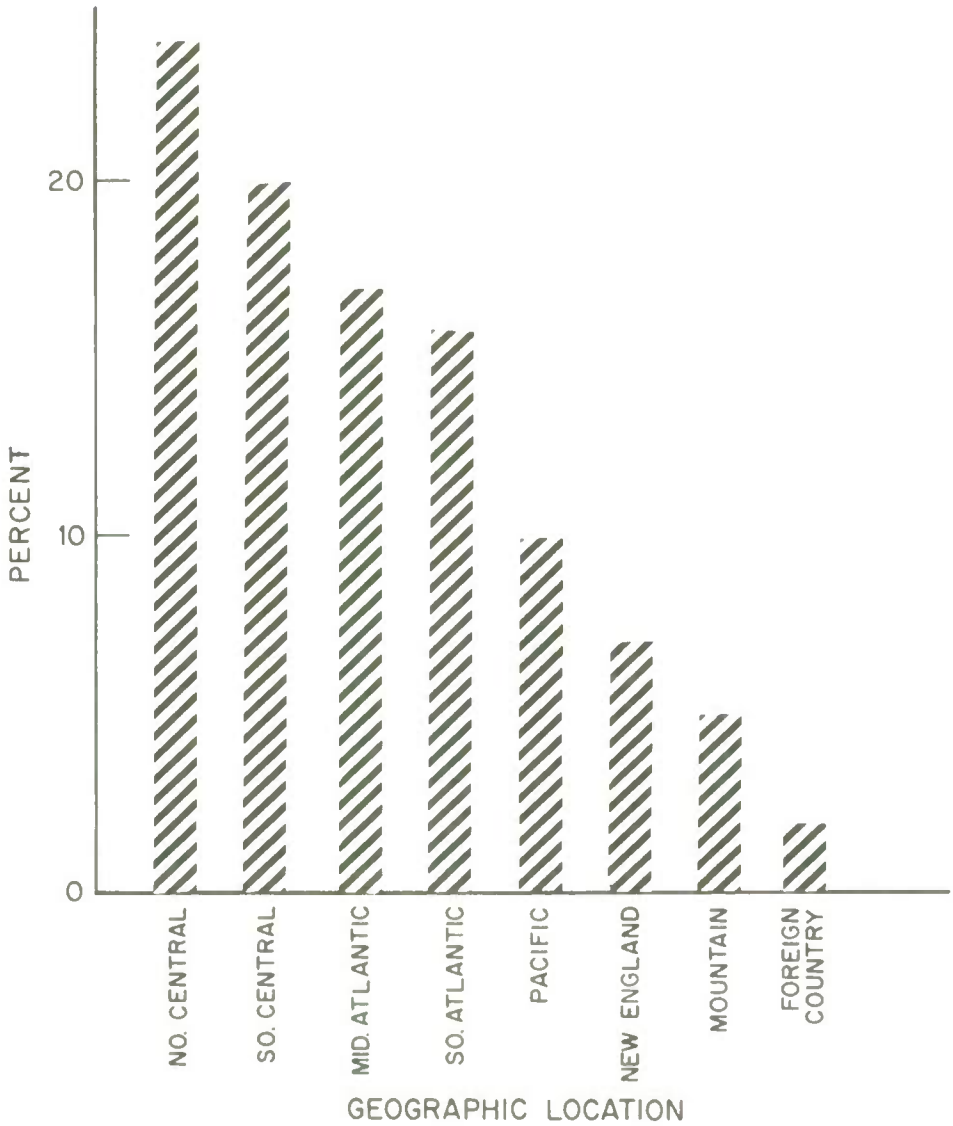

Figure 2. Area of the U.S. in which Category IV personnel spent most of their lives.

The persons most influential in helping the respondents decide on enlisting in the Navy were the father, Navy recruiter, and mother, in descending order. Wives, sisters, and teachers, among others, influenced the smallest number of men to enlist in the Navy. Table 3 presents the rank order of those individuals who played strong roles in influencing the Category IV man to enlist in the Navy. Where the percentage response was the same for two or more categories, the rank orders are averaged.

Table 3

Persons Who Influenced Category IV Men to Enlist in the Navy

Person	Rank Order
Father	1
Navy recruiter	2
Mother	3
Friends who were in service, but out now	4
Friends who are in the service now	6
Girlfriend	6
Brother	6
Friends who were never in the service	8.5
Other relatives	8.5
Wife	12
Guardian	12
Sister	12
Favorite teacher	12
Recruiter from another branch of service	12

The largest proportion (22 per cent) of the respondents selected the option "none of the above" in response to this item. This finding could indicate that there was no outside influence, i. e., enlistment in the Navy was primarily based on intrinsic drives. These results compare very closely with those reported by Katz (1971), who found that 29 per cent of Category I, II, and III men were not influenced by the 14 sources listed in Table 3. Similar to the results found with the Category IV man, in Katz' study, the two individuals most influencing the higher AFQT man to enlist in the Navy were the father and the Navy recruiter.

When questioned specifically on the attitudes that certain individuals, who conceivably could exert an influence on respondent's decisions, had about the man enlisting in the Navy, it appeared that only slight negativism was encountered from others. For example, five per cent claimed that their guardians did not want them to join the Navy, eight per cent had school guidance counselors who opposed joining the Navy, four per cent had physical education teachers or athletic coaches who held some negative attitude, and nine per cent reported that their favorite teacher did not think they should join the Navy. Accordingly, it seems that this group is minimally represented by individuals who joined the Navy against the advice of others.

Conversely, approximately the same percentage of those persons close to the respondent (i.e., guardians, school guidance counselors, physical education teachers, athletic coaches, and favorite teachers) favored the respondent's enlistment in the Navy. The percentage range was from 10 to 16. Similarly, from 9 to 16 per cent of these "advisors" did not care whether or not the respondent enlisted in the Navy.

Approximately one-half of the sample were interviewed by recruiters who represented other branches of the armed forces. Of these recruits, 6 per cent said that they were advised to join the Navy by these recruiters and 29 per cent were advised to enlist in a branch of service other than the Navy. Hence, the recruiters of the other branches did not exert a strong negative influence on the choice of the Navy by the cohort group.

Reactions to the draft lottery and the effect of the draft lottery as a motivating factor for enlisting in the Navy were investigated in a set of interrelated questions. Fourteen per cent of the sample held that the draft lottery was unfair. Also, 14 per cent (although not necessarily the same 14 per cent who thought the draft lottery to be unfair) claimed that they would not have joined the Navy if there was no draft. There seems to be no difference between the Category IV individual and those of the other three categories regarding the draft. Katz (1971) reported identical findings when the upper AFQT category men were surveyed (i.e., 15 per cent thought the draft was unfair and 13 per cent would not have joined the Navy if there was no draft).

Other Influences in Enlistment/Reenlistment

The respondents were asked to evaluate a series of other influences which might affect one's intent to enlist in and/or remain in the Navy.

The ten influences considered in this section (as presented in Table 4) were evaluated very similarly by all respondents. Eighty-five per cent said that each influence was "very important." As can be seen in Table 4, the range of responses across influences on each level of importance was very restricted. All ten influences were said to be very important by the Category IV sample. Only very small percentages (generally two per cent) thought these factors were unimportant for them. In summary, it seems that all the good things in life, as for others, are important to the Category IV man.

Table 4

Importance of Several Factors Influencing Enlistment

	Very %	Moderately %	Not %
Doing the work liked best	90	8	2
Obtaining more education	84	14	2
Receiving fair treatment	87	12	2
Doing a man's job	86	11	3
Having a good life	92	7	1
Having good living conditions	90	9	1
Keeping good conduct and appearance	87	11	2
Working with good people	90	8	2
Having good working conditions	88	10	2
Having good food	87	11	2

Navy Career Plans

The Category IV men, at the beginning of their recruit training, were represented by 13 per cent who were planning on reenlistment at the termination of their current tour of duty. Ten per cent of the sample seriously contemplated remaining in the Navy long enough to collect retirement benefits.

The distribution of responses, in the negative sense, indicates that approximately one-third of the sample were definitely not interested in a career in the Navy (to retirement) or in reenlisting at the end of their first tour of duty. Slightly more than one-half of the sample were unsure of their future Navy career plans, either in regard to reenlistment or to remaining in the Navy until retirement.

The results of the questions pertaining to career plans were in close agreement with those that pertained to the reasons for enlisting in the Navy. Nine per cent responded that they joined the Navy for a career and 13 per cent indicated that they were planning to reenlist. The Chief of Naval Personnel at the end of fiscal year 1972 indicated approximately 12 per cent of the Category IV personnel to possess more than four years in the service.

QUESTIONNAIRE 2

The second questionnaire was administered while the sample was in their last week of recruit training (three months after starting boot camp). The respondents to Questionnaire 2 were the same 1837 recruits whose responses to selected aspects of Questionnaire 1 were summarized above.

Importance of the Motivations for Enlisting

The importance of several factors that might motivate a Category IV man to enlist in the Navy was again investigated in the second time phase. The response to these items, as before, indicated that over 85 per cent of the sample considered all of the listed factors to be very important. The 14 factors listed on the questionnaire for check off were: fast promotions, liking the job, education, fair treatment, doing a "man's job," having a good life, living conditions, pay and allowances, working hours, standards of conduct and appearance, fellow workers, working conditions, supervisors, food.

Attitudes Toward Tests and Classification

The respondents were queried in Questionnaire 2 regarding their opinions of the basic test battery that was administered to them (and on which much of their subsequent classification was based). The responses indicated strong agreement that they had been adequately advised of the importance of the tests for classification purposes, prior to taking the battery of tests. Only 11 per cent claimed that they did not know of the importance of the tests beforehand. Nine per cent of the sample were of the opinion that the tests would have little, if any, significance in their eventual classification, whereas 91 per cent thought that the battery of tests was very important or of some importance.

In terms of the testing conditions (noise, temperature, etc.), more than half the group evaluated the conditions as "good" or "very good," approximately 10 per cent said the testing conditions were "poor" or "very poor," and slightly more than one-third stated that the physical conditions of the test room were "fair." A large portion of the respondents said that they were generally tired at the time they took the basic test battery (44 per cent). Slightly less than one-third of the sample were adequately rested when the tests were administered and an equal proportion said that they were "neither tired nor rested." Thus, as far as the motivation to perform well and the physical conditions which might help the individual to perform at his maximum potential, the conclusion seems indicated that on both counts satisfactory test conditions had been achieved.

In a similar vein, the Category IV men were questioned about their classification interview. In this regard, there was an approximate 60/40 split regarding the adequacy of the information they received about the various rates to which they could be assigned. Sixty per cent of the sample said that they received all the information they needed, whereas 40 per cent claimed that they received less information than they thought they should have had.

In their opinion, one-third did not receive enough time to talk to the interviewer, one-half had a lengthy enough interview, and the remainder were not sure. The respondents also evaluated the classification interviewer in terms of the impression of his interest in their well-being. The interviewers left a majority of the recruits in the sample with the feeling that they were not interested in what the respondent was saying.

Navy Career Plans

Comparing the results of Questionnaires 1 and 2 indicates an increase in the favorableness of attitudes toward both reenlisting and remaining in the Navy long enough for retirement in the three month interval between questionnaire administrations. The increase in the number of respondents thinking of a career in the Navy was commensurate with a decrease in the number that were planning to return to civilian life. Thirty per cent more of the respondents to Questionnaire 2, as compared to Questionnaire 1, said that they were planning to reenlist when their present enlistment was completed. Also, the undecided category had an increase of five percentage points (61 per cent versus 56 per cent) which could increase the pool of potential reenlistees.

Similar differences were found when attitudes toward staying in the Navy until retirement, before and after recruit training, were compared. Ten per cent responded affirmatively in the first questionnaire; 18 per cent did so in the second questionnaire, an increase of 80 per cent. Additionally, there was minimal change in the number of Category IV personnel that were planning not to stay in the Navy until retirement (30 per cent and 28 per cent from Questionnaires 1 and 2, respectively). Finally, there were fewer individuals who were undecided about staying in the Navy until retirement after recruit training than there were before recruit training (60 per cent in Questionnaire 1 and 54 per cent in Questionnaire 2).

QUESTIONNAIRE 3

Questionnaire 3 was administered after the sample had been in the Navy about a year.

Post Recruit Training Assignments

More than half the sample said that they had not received any school assignments (of longer than a two-week duration) after recruit training. About one-third of the sample had both school and duty assignments after completing recruit training, and a small number indicated that they only had school assignments.

The Category IV man was assigned to a wide variety of activities after recruit training. The largest proportion were assigned to: aircraft carriers (on sea duty), shore duty in U.S. (but not school), and destroyers (on sea duty). Other frequently mentioned activities to which the respondents were assigned were: shore and carrier based aircraft squadrons or detachments, tenders, amphibious ships/crafts, service force ships, cruisers, school in the U.S., shore duty outside U.S., and nuclear submarines.

Importance of Motivating Factors

In Questionnaire 3, the Category IV men identified 12 different motivating factors that were very important to them. Over 85 per cent of the sample indicated all of the following to be important: education, fair treatment, fast promotions to important jobs, liking the job, doing a "man's job," fellow workers, working conditions, supervisors, living conditions, having a good life, pay and allowances, food.

Comparisons of the importance of motivating factors, over the time periods, reveals slight differences. When the Category IV men were new to the Navy (Questionnaire 1), it appeared that they were not as concerned about fast promotions to important jobs, supervisors, and pay and allowances (79, 84, and 84 per cent claimed that they cared "a lot" about these motivators). The percentage values increased to 88, 90, and 96 at the time of the third questionnaire. These represent conditions about which the respondents became aware and concerned about during their Navy career. Whereas most of the Category IV men were interested in standards of conduct and appearance when they first entered the Navy and at the end of recruit training (87 and 92 per cent said they cared "a lot"), these were of concern to fewer (84 per cent cared "a lot") Category IV men nine months later. Similarly, when this sample was finishing recruit training and awaiting their next assignment, a large number expressed concern over their

working hours (85 per cent cared "a lot"). An even greater number expressed this concern after the sample had been in the Navy for two years (93 per cent cared "a lot"). This factor was not of concern to as many when the sample had just entered the Navy (81 per cent cared "a lot").

Modifications Resulting from Z-Grams

The Z-gram instructions of Admiral Zumwalt were perceived to have little effect on Navy life for the Category IV man. To obtain specific information in this regard, the respondents were asked to indicate the extent that they thought the Z-grams had in influencing recent changes in the Navy. The areas queried were: easing of regulations, leave and liberty, improving personal services, equal opportunities, rotation and retention, improving living and housing conditions, and increasing assistance to families. These areas were defined for the respondents in Questionnaire 3.

In every one of the seven areas examined, a majority of the respondents either noticed no change, or did not credit the Z-grams with bringing about the change. The range for the negative responses was from 52 to 67 per cent. Conversely, from 33 to 49 per cent did attribute changes in these areas to the Z-grams.

Recent change in the area of equal opportunities was seen as influenced by Z-grams more than any of the other six areas (i. e., 31 per cent claimed "a little" and 18 per cent claimed "a great deal"). The area of equal opportunities was followed by improving personal services, with 25 per cent claiming "a little" and 16 per cent claiming "a great deal" of improvement in these areas.

The two areas in which recent changes have been made, but where the Z-grams were seen as least influential by Category IV personnel, were increasing assistance to families and improving living and housing conditions. Twelve per cent stated that Z-grams were very influential in bringing about the changes in assistance to families and 21 per cent thought they were of little influence. Sixteen per cent saw the Z-grams as carrying much weight in influencing the recent changes in living and housing conditions and 21 per cent saw the Z-grams as carrying little weight.

Treatment and Interpersonal Relationships

As a means of obtaining attitudinal information about the Navy, Questionnaire 3 asked the sample members to evaluate various post recruit training Naval experiences.

The care received in the hospital was evaluated by 23 per cent who had occasion to be treated in the hospital at their present duty station. Of these, 23 per cent (N = 156), 61 per cent rated the treatment they received as either "very good" or "good"; 21 per cent rated the hospital treatment as "fair"; 17 per cent thought the treatment they received at the hospital as "poor" or "very poor."

The cooperation and assistance received from supervisors in their on-the-job training was also rated in Questionnaire 3. Eighty-four per cent of the sample said that they required help on their job assignments (those who did not require help either never had a job assignment or did not need assistance). Of the 84 per cent who evaluated the assistance provided by their supervisors, 17 per cent said that they received more help than they needed, 55 per cent received an appropriate amount, and 27 per cent said that they did not receive enough help.

Approximately three-fourths of the sample were satisfied with the help they received. It is conceivable that the one-fourth who said that they did not receive adequate assistance might have perceived the situation differently if additional time was available to their supervisors or if teaching methods were used that were more commensurate with the recruits' learning ability.

Ninety-six per cent of the sample said that they had no problems in getting along with others in the Navy. They claimed that they got along "fairly well" or "very well" with their peers. Three per cent indicated that they got along either "somewhat poorly" or "very poorly" with their fellow workers.

Factor Analyses

Each of the first three questionnaires was subjected to an individual principal components factor analysis with a varimax rotation. The purpose of the factor analyses was to derive independent constructs for use in describing the sample of Category IV personnel, over time. A principal concern was to identify those factors which reoccur over time, as well as those that occur at the points sampled in the study (i. e., entry into boot camp, termination of recruit training, and one year in the Navy).

For purposes of the factor analyses, variables (questionnaire items) were used which demonstrated discriminability among the respondents. Accordingly, if 85 per cent of the respondents selected on particular option in response to a question, that question was not included in the factor analyses. Two other categories of questionnaire items were excluded from the factor analyses. Those for which 60 per cent of the sample responded with the options "does not apply" or "don't know" (these were also considered as nondiscriminating items), and those items which could not be scored were excluded. Examples of the latter type of item are age, marital status, area of residence, etc.

In some cases, several items were combined to form a variable. These variables entered the factor analyses with a single scaled score, and were therefore treated as a single variable. The items so treated were: responsibility (20 items), anomie (10 items), general satisfaction (4 items), liking for people and activities (10 items) ego strength (18 items), and opinions about the Navy (10 items).

The eigenvalue criterion was used to determine a factor. Factors with eigenvalues greater than 1.0 were considered to constitute adequately stable and determined constructs. Eight factors were extracted from Questionnaire 1, six factors from Questionnaire 2, and seven factors from Questionnaire 3.

The factor solutions produced highly interpretable factors. In naming and reporting the factors, the homogeneity was increased by including only those variables with loadings of .40 (Comrey, 1966), or greater.

The factor solutions for the three questionnaires accounted for 23 per cent, 22 per cent, and 31 per cent of the variance, respectively. It appears that Navy life is so diverse and multidimensional and that these dimensions interact in such a diverse manner that the factoring technique is not fully descriptive.

Interpretation of the Factors

Factors Common to Three Questionnaires

One factor, called Perception of Navy Life, appeared common to all three factor analyses. Table 5 presents the items with the highest loadings on this factor in all three questionnaires. This factor accounted for 7, 4, and 15 per cent of the predictable variance, respectively. The Perception of Navy Life factor reflects a set of questions involving comparisons between the Navy and civilian life, as perceived by the respondent. The aspects of life and living that the Category IV men were asked to respond to (and that loaded highly on the factor) involved the concept of "a good life," general living conditions, the work-a-day environment and conditions, the treatment that one receives, and the ability to perform on a mature and independent level. Since this factor was extracted at three different times in the Category IV man's Navy career, his initial responses would be based on the projection of what he expected to find life to be like in the Navy. His next set of responses would be based on rather limited Navy experiences and therefore also would involve projections of expectations. The third set of responses, coming nine months after recruit training, would be based on career experiences.

Table 5

Items with Highest Loading on Perception of Navy Life Factor

Item	Loading Questionnaire 1	2	3
1. Where do you think you are likely to have a good life in general - in the Navy or in civilian life?	.57	.48	.62
2. Where do you think you are more likely to have good living conditions - in the Navy or in civilian life?	.50	.55	.58
3. Where do you think you are more likely to work with good people - in the Navy or in civilian life?	.56	.53	.53
4. Where do you think you are likely to have good working hours - in the Navy or in civilian life?	.51	.54	.49
5. Where do you think you can get fairer treatment - in the Navy or in civilian life?	.46	.53	.55
6. Where do you think you are more likely to do a man's job - in the Navy or in civilian life?	.43	.53	.53

The Perception of Navy Life factor may also be viewed as involving motivators or incentives which, on the one hand might motivate a Category IV man to enlist in the Navy, and on the other hand, might motivate actual Category IV Naval personnel to reenlist.

Factors Common to Two Questionnaires

A second factor--one which was common to Questionnaires 1 and 2--was named Work and Person Interaction. This factor is loaded on general responsibility, general satisfaction, and liking for persons and activities. Each of these variables entered the factor analysis with a single score, derived from the combination of several items. The factor accounted for four per cent of the variance of the first questionnaire and two per cent of the variance of the second questionnaire (Table 6).

Responsibility denotes an individual who is aware of his duties and obligations and acts accordingly. It depicts an awareness of "right and wrong." Statements such as the following might be expected to reflect responsibility:

- I do what needs to be done without waiting to be told to do so.
- I do not usually wait until the last minute to get my work done.
- I take care of equipment assigned to me.
- I am a careful driver.
- I am interested in finding out better ways of doing my Navy job.

A liking for people and things is somewhat related to adaptability, insofar as the ability to get along with others is concerned. This should not necessarily be construed as indicating a dependency on others or even a mildness or accommodating manner. The items included in this variable investigated liking for various types of people and things, viz., members of the family, friends, coworkers, older people, working, and the way free time is spent.

Table 6

Scales with Highest Loading on Work and Person Interaction Factor

Item	Loading
Questionnaire 1	
Responsibility	.45
Liking for people and activities	.42
Questionnaire 2	
General satisfaction	.46
Responsibility	.40

The general satisfaction variable is concerned with overall state of contentment and fulfillment. The items on the scale inquire into the feeling that one has about life, in general, and specifically with the happiness, purpose, and satisfaction with life as well as the spirit that one is in most of the time.

Evidently, responsibility, liking for people, and general satisfaction cluster to form a specific constellation which we have called Work and Person Interaction to denote the interaction between a man's work, the pressures exerted on him by others, and the effects of these on his general satisfaction.

A third factor, called Supervisor Consideration, emerged from the factor analyses of the responses to Questionnaires 2 and 3. The Supervisor Consideration factor reflects the perception that the supervision received is empathetic. As indicated in Table 7, the items loaded highly on this factor referred, in part, to the assistance and treatment that the respondent received from his supervisors and/or instructors. Items relating to the factor, which accounted for 11 per cent and 4 per cent of the variance of Questionnaires 2 and 3, respectively, were not included in Questionnaire 1 because of the insufficient experiences the recruits would have had with Naval superiors at that time.

The variables loading above .40 on Supervisor Consideration in Questionnaire 2 involved attitudes toward leaders in recruit training. Specifically, the Category IV personnel rated their superiors on: the behavior examples they set for the recruits to follow, the respect they displayed for the recruits, their willingness to help recruits with training and personal problems, and their knowledge of the recruits, per se, before selecting the recruit most suitable for the position of company leader.

In the third questionnaire, the Category IV men were asked to judge their supervisors in the fleet. The highly loaded variables involved the encouragement the respondent received to do the best job he could, the interest that was shown in his progress, the encouragement to study for advancement in rating, the praise received for jobs well done, the information provided concerning the functions of the various activities, and the location of important divisions.

Table 7

Items with Highest Loading on Supervisor Consideration Factor

Item	Loading
Questionnaire 2	
Did you feel that those who trained you set a good example for recruits to follow?	.51
While in boot training, how much respect for recruits did you feel was shown by those who did the training?	.50
Did you feel that you could go to your company commander for help with a training problem while in boot training?	.50
Did you feel that you could go to your company commander for help with a personal problem while in boot training?	.45
Did you think your company commander had enough of a chance to get to know the recruits before he chose the leader for the company?	.43
Questionnaire 3	
In your assignments since leaving recruit training:	
How much encouragement have you received from supervisors and/or instructors to do the best job you could?	.70
How much interest have supervisors and/or instructors shown in the progress you were making?	.69
How much help have you received from supervisors and/or instructors in getting to know the type of work the different parts of each activity were doing?	.68
How much encouragement have you received from supervisors and/or instructors to study for advancement in rating?	.61
How much help have you received from supervisors and/or instructors in getting to know the location of those divisions which were important to you?	.57
How often have supervisors and/or instructors praised you when you did a good job?	.56

Table 8 presents the highest loaded variables on a factor named Perception of Physical Regimen of Recruit Training. Only Questionnaires 1 and 2 inquired into this area. In the first questionnaire, the cohort sample was requested to respond to the items in accord with their expectations relative to the physical aspects of recruit training. In the second questionnaire, they responded in terms of their past experiences.

Table 8

Items with Highest Loadings on Perception of Physical Regimen of Recruit Training Factor

Item	Loading
Questionnaire 1	
How do you feel the marching in boot camp will be?	.56
How do you feel the physical training in boot camp will be?	.52
Questionnaire 2	
How do you feel the marching in boot camp was?	-.46
How do you feel the physical training in boot camp was?	-.44

The Perception of Physical Regimen of Recruit Training factor accounted for two per cent of the predictable variance of each of Questionnaires 1 and 2. The positive loadings of the variables in the first analysis and their negative loadings in the second analysis indicate the variables involved to be important in the pre-boot camp perception of the physical regimen, but not to be correlated with this perception after boot camp is completed. The factor has significance because it is a measure of the Category IV man's expectations of a relatively important facet of boot camp. The negative or positive attitudes toward the physical aspects of recruit training at the time of administration of Questionnaire 1 are based mostly on hearsay. The reasonableness of the attitudes is problematical in that different recruits will be able to accept the physical regimen at various levels of ease or difficulty. However, the change involved is indicative of the reversal of opinion, based solely on the experiences of boot camp.

Factors Unique to Questionnaire 1

Certain benefits that could be derived from a tour in the Navy were seen as inducements to enlist by the Category IV type personnel. The various inducements formed a factor, called Inducements to Enlist, that emerged from the Questionnaire 1 factor analysis. The most highly loaded variables on this factor involved such inducements as: technical training, educational benefits after leaving the service, a better job in the Navy than in civilian life, and time to reflect on the future. The factor accounted for three per cent of the variance of Questionnaire 1. The variables loading on this factor are presented in Table 9.

Table 9

Items with Highest Loadings on Inducements to Enlist Factor

Item	Loading
Questionnaire 1	
Did wanting to get a technical training have anything to do with making up your mind to join the Navy?	.58
Did the need for time to find out what you wanted to with your life have anything to do with making up your mind to join the Navy?	.53
Did the belief that you could get a better job in the Navy than in civilian life have anything to do with making up your mind to join the Navy?	.50
Did wanting to get educational benefits after leaving the service have anything to do with making up your mind to join the Navy?	.44

Four additional factors (which did not appear to be common to the factors of the other questionnaires) emerged from Questionnaire 1. Each of these factors accounted for two per cent of the variance. The first of these was named Pre-enlistment Employment Record. The three items which were loaded above .40 on this factor were: Were you working when you joined the Navy? (.84); If you were working when you joined the Navy, how much were you making a week? (.84); and How long after leaving school did you join the Navy? (.40).

The next emergent factor on Questionnaire 1 was named Encouragement by Others to Enlist in the Navy. The items loading above .40 on the Category IV man's Encouragement by Others to enlist in the Navy factor were: other relatives (.53), friends who were in the service but are out now (.50), sisters (.48), mother (.45), friends who have never been in the service (.45), brothers (.42), and friends who are in the service now (.42).

The two heaviest loaded variables on a Questionnaire 1 factor called Self Realization were: What kind of work do you expect to be doing seven years from now? (.75), and What kind of work do you expect to be doing for most of your life? (.75). The factor was named for the inherent involvement of the variables with the fulfillment of the respondent's potential.

The educational achievements of the Category IV recruits' parents loaded highly on the final Questionnaire 1 factor. This factor was named Educational Stimulation. The two variables involved were: What is the highest amount of education finished by your father? (.47) and What is the highest amount of education finished by your mother? (.41).

Factors Unique to Questionnaire 2

Two factors not previously discussed emerged from the analysis of Questionnaire 2. They were named Sick Call Treatment and Satisfaction with Assigned Rate. The two variables loading above .40 on the former factor were: What did you think about the care you received in boot training when you went on sick call? (.79), and How did the corpsman act towards you when you reported for sick call? (.79). Three variables loaded above .40 on the latter factor: Is the general rate you have been given the one you feel you are best qualified for? (.64), Is the general rate you have been given the one you wanted? (.61), and What do you think of your next duty assignment? (.48)

Factors Unique to Questionnaire 3

A factor, named Technical Schooling, emerged from the factorization of the third questionnaire. This factor accounted for four per cent of the predictable variance of this questionnaire. The variables loading above .40 on this factor involved attendance at "A" and "P" schools after completion of recruit training, the help received from instructions (at these schools) in learning and understanding practical and written material, and the use to which the training was put in post school assignments. The variables loading above .40 on the Technical Schooling factor are presented in Table 10, along with their respective loadings.

Table 10

Items with Highest Loading on Technical Schooling Factor

Item	Loading
Questionnaire 3	
At the school you have attended since leaving recruit training, how much help have you received from instructors in learning practical material?	.91
At the schools you have attended since leaving recruit training, how much help have you received from instructors in understanding written material?	.89
Did you go to school ("A" or "P") directly from recruit training?	.82
In your assignments since leaving "A" or "P" school, how much of a chance did you get to use the training you received at these schools?	.81

The first of the four additional factors extracted from the responses to Questionnaire 3 describes the affect that recent changes in the Navy had on the respondents. As such, this dimension was named Affect of Recent Navy Changes. The areas that loaded above .40 for the Category IV personnel on this factor involved equal opportunities (.62), increasing assistance to families (.62), rotation and retention (.59), improving living and housing conditions (.57), improving personal services (.49), and leave and liberty (.41).

The second of the four final Questionnaire 3 variables was named Satisfaction with Superiors. Items loading above .40 on this dimension involved treatment received from commissioned officers (.50), treatment received from petty officers (.50), and supervision received (.48).

Items were included in Questionnaire 3 to determine the importance of certain variables as motivators for reenlistment. Four of these items loaded highly on one factor. The factor, named Value Judgments, was described by the following variables: How much do you care about working on important jobs? (.54), How much do you care about getting physical training (.53), How much do you care about taking part in sports events? (.50), and How much do you care about having to keep good standards of conduct and appearance? (.47).

The last factor extracted from the responses to the third questionnaire pertained to the facilities provided the respondent for studying. Complaints are sometimes made because of a lack of facilities where one can study for tests (e.g., advancement in rating). Two items describe the dimension called Facilities for Studying. These items were: Do you have a comfortable place at your present duty station where you could study if you wanted to do so? (.64) and Do you have a quiet place at your present duty station where you could study if you wanted to do so? (.62).

Discussion

Figure 3 presents a consolidation of the factors which emerged from the factor analyses of the three questionnaires. In Figure 3, the factors which are common to more than one time period appear near the base and the unique factors appear in the upper portion. Change in the factorial structure across time periods is not unique to Navy life. Such change has been reported in other areas and may be expected in any dynamic situation. Quite obviously, the changing set of factors also reflects the different areas of inquiry included in the various questionnaires. Nevertheless, Figure 3 serves to point out that the Catetory IV man's structural reactions to Navy life vary in response to the changing requirements placed on him by his Navy assignments and responsibilities. These reactions seem to be of two types: (1) those centered around the stimulation of the immediate environment and which vary with the presses of the environment, and (2) those of a somewhat continuous nature. The factors of the former nature are those which are unique to a given time period and, in view of their transitory nature, seem important for understanding the Category IV man at that phase of his Navy career. Of greater importance, however, is the probability that reactions on the factors unique to the early time phase(s) serve to condition reactions along the factors evidenced later in the career continuum. Accordingly, the time period unique factors are important in understanding the adjustment of the Category IV man during an individual period in his career and for understanding the ontogeny of response to the service by the Category IV man. The connecting links, shown in Figure 3, represent an attempt to designate logically some of these reciprocal and interacting relationships. Accordingly, to understand fully the response of the Category IV man to Navy life one must understand some of the complex interrelationships among factors predominent at various career points.

The second class of factors--those which are common to two or more time periods--were concerned with "a good life," work and peer interaction, and supervisory relationships. (The Perception of Physical Regimen of Recruit Training factor is believed to be transitory and of little long term import.) These factors seem fundamental to the continuous adjustment of the Category IV group and, as such, represent important considerations in any attempt to improve the interaction between the Category IV man and his Navy environment.

The diversity and multifaceted nature of response to the Navy environment is accented by the somewhat low percentage of the variance accounted by each of the factor analyses. Individual differences seem to be highly manifest, and simple solutions to adjustment problems do not appear to be indicated by the present data. It seems that study of the individual, rather than the search for variables common to the group, may possess merit in unraveling this problem. Finally, the present questionnaire was largely "personality" oriented. It may be that a greater emphasis on the structural or job component aspects of Navy life, as contrasted with the personal aspects, would provide a firmer explanatory structure.

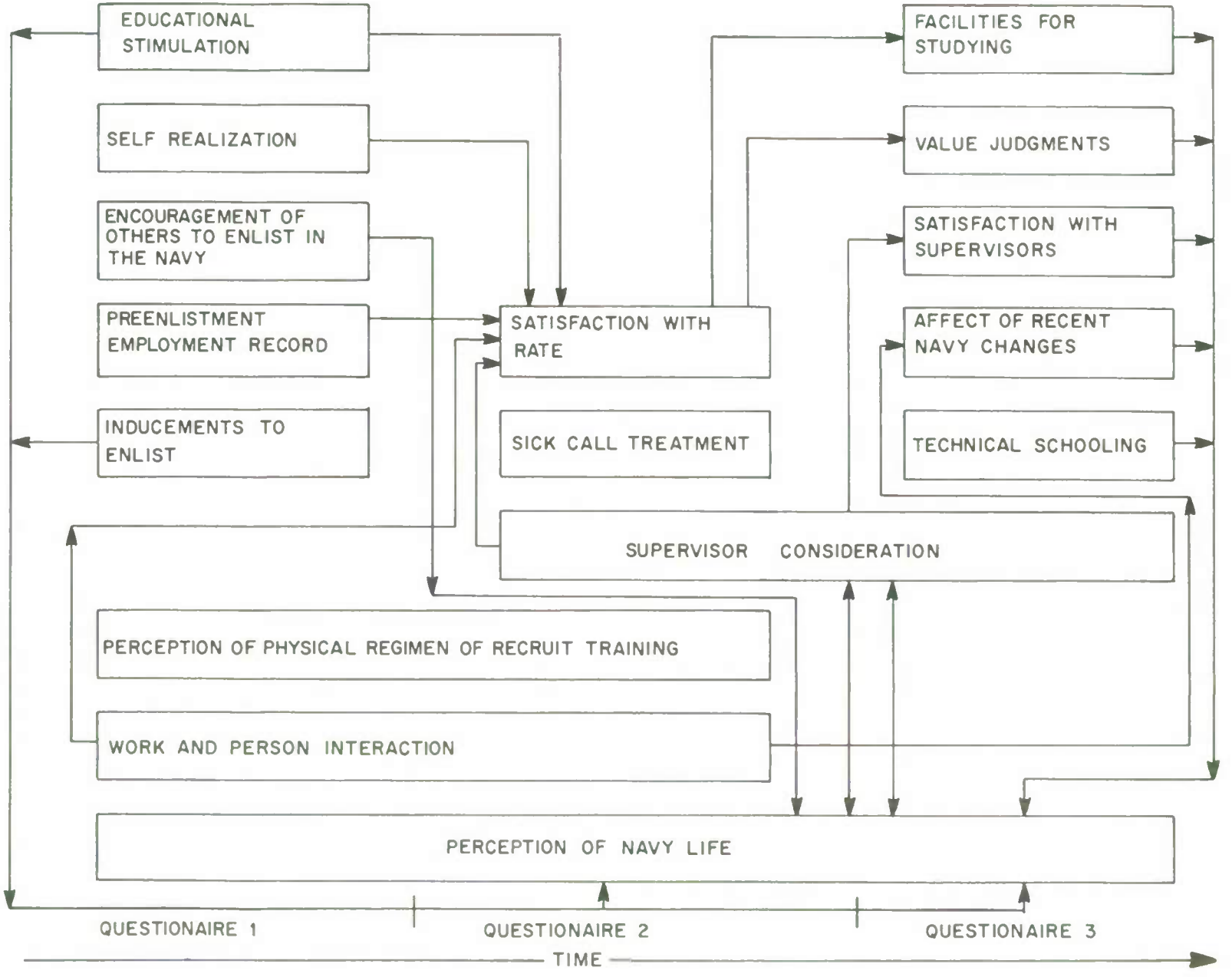

Figure 3. Factors emerging from three questionaires.

Multiple Discriminant Analysis

The predictive power of the various scales in the questionnaires was investigated through the multiple discriminant analytic technique. Essentially, multiple discriminant analysis is a special type of analysis which separates groups. As such, the analytic procedures reveal the value of the predictor variables (i.e., scales on the questionnaires) by arranging them into a number of discriminant functions. The functions separate each group on the basis of its centroid and variance. Each predictor is defined by the variables (i.e., questionnaire scales) that comprise the discriminant function.

Two predictions were attempted. The first involved the recommendation for reenlistment, which is, in part, tantamount to success in the Navy. Approximately three months prior to the release from active duty or the fulfillment of the service obligation, Naval personnel are reviewed by appropriate petty officers and their commanding officer to determine if they meet the Naval professional growth criteria.* The second prediction also involved a dichotomous grouping criterion--those actually reenlisting and those not actually reenlisting. In both cases, the criterion data were collected at the termination of the first enlistment.

Factored Homogeneous Item Dimension

Before discriminant functions could be generated, predictor variables were developed in accordance with the factored homogeneous item dimension approach (Comrey, 1961). Instead of using individual item scores, total scores were obtained on each of the factors that emerged in the factor analyses described in the preceding section of this report. The discriminant function analysis was thereby performed on the scores of sets of relatively homogeneous items, rather than on a number of heterogeneous single items. As Comrey points out, such an approach should serve to increase the stability of the resultant analysis.

To increase the stability of the resultant discriminant functions, a set of preliminary steps was completed. First, the sample, on which each of the previously discussed factor analyses was based, was split into random halves. Then, each of the halves was factor analyzed for each questionnaire. In each of these factor analyses, a solution was superimposed so as to yield the same number of factors as were extracted in the original factor analysis. Additionally, with minor exceptions, only those items were included in these factor analyses which loaded .40 or greater in the original factor analysis of an individual questionnaire.

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* The following two sources describe the reenlistment quality control program and define the eligibility for the career enlistment force: Bureau of Naval Personnel Manual, Section 1040300, NAVPERS 1579.1B, 1 July 1969, and BUPERS Standard 1133.22C, 15 June 1972.

The exceptions to the .40 criterion for item inclusion in these factor analyses were:

Questionnaire 1

Preenlistment Employment Record Factor

How many jobs have you had since you stopped going to school full time? (.39)

Perceptions of Physical Regimen of Recruit Training Factor

How do you feel following orders in boot camp? (.37)

Questionnaire 2

Perceptions of Physical Regimen of Recruit Training Factor

How much of a challenge did you find boot training? (.37)

How did you feel following orders in boot camp? (.39)

Sick Call Treatment Factor

How much do you feel your next duty assignment will make use of the education, training, and/or experience you already had when you came into the Navy? (.32)

Questionnaire 3

Facilities for Studying Factor

Are you given enough time in your present duty assignment to study if you wanted to do so? (.34)

In selecting items to be included in the discriminant function analysis, a loading of .30 or greater was required on each of the two separate factor analyses for each questionnaire.

Discriminant Functions

Two discriminant function analyses were performed on each questionnaire. The purpose of the first discriminant function analysis was to determine if the factors for the Category IV personnel could be used to predict success in the Navy. More specifically, the purpose was to determine if the factor scores could predict who would be recommended for enlistment and/or who would not be recommended for enlistment. The purpose of the second discriminant function analysis was to determine if, given a group of Category IV personnel who are recommended for reenlistment, the factors can separate those who will reenlist from those who will not.

At the outset of each discriminant function analysis, the scales (composing the various factors) were tested for significance by an F ratio. The cut-off criterion of unity was used in the stepwise discriminant analyses. The discriminant function analysis was then conducted on the significant scales. All negatively loaded variables were reverse scaled for easier interpretation when they were used in the discriminant function analysis.

Questionnaire 1

The analysis of the scales composing the eight factors (as described earlier in this chapter) resulted in four predictor variables. The respective F ratios were as follows: 6.05 for 1 and 1,835 degrees of freedom ($p < .05$), 5.40 for 2 and 1,835 degrees of freedom ($p < .01$), 4.18 for 3 and 1,833 degrees of freedom ($p < .01$), and 3.40 for 4, and 1,832 degrees of freedom ($p < .01$). Table 11 contains the coefficients of the four variables and the constants in the discriminant equations for the recommended for reenlistment and not recommended for reenlistment groups.

Table 11

Coefficients for the Discriminant Functions Predicting Reenlistment Recommendation--Questionnaire 1

Actual	Coefficients Recommended	Coefficients Not Recommended
Perception of Navy Life	1.0652	1.0479
Preenlistment Employment Record	0.7063	0.7175
Encouragement by Others to Enlist in the Navy	0.3037	0.2897
Educational Stimulation	0.6858	0.6446
Constant	-23.4423	-22.6609

Table 12 presents the number of respondents who were correctly and incorrectly predicted to be recommended and not recommended for reenlistment by these functions. The columns in the table represent the predicted classifications; the rows include the actual classifications.

Table 12

Classifications of Predicted and Actual Reenlistment Recommendation--Questionnaire 1

	Predicted		
Actual	Recommend	Do Not Recommend	Total
Recommend	205	656	861
Not Recommend	191	785	976
			1837

In this case, the multiple discriminant analysis correctly classified 24 per cent of the recommended for reenlistment group and 80 per cent of the not recommended group were correctly identified. If hits and misses are considered, across both functions, then the multiple discriminant analytic technique was 54 per cent accurate the first time period.

Although the first questionnaire was administered very early in the enlistment period, some predictive efficiency is evidence. The discriminant function which predicted with greater accuracy is the one derived for the not recommended for reenlistment group. Identifying these personnel early in their Navy career has value in that positive actions can be taken to bring them to a level which meets the requirements for reenlistment.

The second discriminant analysis performed on Questionnaire 1 involved classification of the recommended for reenlistment group into actual reenlist and actual does not reenlist groups. Three variables were isolated: Work and Person Interaction, Self Realization, and Education Stimulation. The significant F ratios were: 4.46 for 1 and 859 degrees of freedom ($p < .05$), 2.78 for 2 and 858 degrees of freedom ($p < .10$), and 2.23 for 3 and 857 degrees of freedom ($p < .10$), respectively. The coefficients of the three variables and the constants in the respective discriminant functions are presented as Table 13.

Table 13

Coefficients for the Discriminant Functions Predicting Reenlistment Action--Questionnaire 1

Function	Coefficient	
	Not Reenlist	Reenlist
Work and Person Interaction	1.5017	1.5293
Self Realization	0.2167	0.2460
Educational Stimulation	0.3979	0.4269
	-13.4822	-15.5176

Table 14 presents the predictions and actual actions for the group of persons who were recommended for reenlistment.

Table 14

Classification of Predicted and Actual Reenlistment Action--Questionnaire 1

Actual	Predicted		Total
	Not Reenlist	Reenlist	
Not Reenlist	665	0	665
Reenlist	196	0	196
			861

As can be seen in Table 14, the discriminant function predicted that the entire sample would not reenlist. Since no separation between the two groups was obtained, the discriminant analysis is obviously not able to divide the recommended for reenlistment group. It thus seems meaningless to look at hits and misses. It is likely that this type of prediction cannot be formulated at the beginning of the Category IV man's enlistment in the Navy. It appears that more information is needed to predict who will reenlist than the three significant variables were able to provide.

Questionnaire 2

The discriminant analysis for Questionnaire 2 yielded four statistically significant variables ($p < .001$). The F ratios ranged from 234 to 911 for degrees of freedom from 4 and 1,832 to 1 and 1,835. Table 15 identifies the four statistically significant variables, along with their respective coefficients and the constants for each discriminant function.

Table 15

Coefficients for the Discriminant Functions Predicting Reenlistment Recommendation--Questionnaire 2

Function	Coefficients	
	Recommended	Not Recommended
Supervisor Consideration	1.0442	1.0860
Perception of Navy Life	0.4659	0.4306
Work and Person Interaction	0.2155	0.1578
Sick Call Treatment	0.8614	0.8972
Constant	-30.2560	-27.2726

Table 15 indicates the results of applying the two discriminant functions to predict the categorization of the Category IV personnel into recommended and not recommended for reenlistment groups. As shown in Table 16 out of 861 chances, the recommended for reenlistment group prediction had 832 hits (97 per cent); out of the 976 chances, the not recommended for reenlistment group predictions had 549 hits (56 per cent). The overall percentage of hits was 75.

Table 16

Classifications of Predicted and Actual Reenlistment Recommendation--Questionnaire 2

Actual	Predicted		Total
	Recommend	Not Recommend	
Recommend	832	29	861
Not Recommend	427	549	976
			1837

The separation shows that by the end of recruit training, the Category IV man's attitudes, perceptions, and behaviors, as measured in the four scales in Table 15, are predictive of their Navy growth potential and eligibility for career development.

The second prediction involves the determination of the number of Category IV recruits that will reenlist, from among those who were recommended for reenlistment. The discriminant function analysis resulted in six statistically significant variables ($p < .001$). The F ratios ranged from 362 to 1,954 for 6 and 854 degrees of freedom to 1 and 859 degrees of freedom. The factors, their coefficients, and the constants for the discriminant functions are presented in Table 17.

Table 17

Coefficients for the Discriminant Functions Predicting Reenlistment Action--Questionnaire 2

Function	Coefficient	
	Not Reenlist	Reenlist
Supervisor Consideration	0.9586	1.1492
Perception of Navy Life	0.3690	0.3042
Work and Person Interaction	0.5595	0.2832
Perception of Physical Regimen of Recruit Training	1.7477	1.6802
Sick Call Treatment	0.8457	1.0042
Satisfaction with Rate	0.5071	0.6860
Constant	-50.3329	-43.7694

Table 18 presents the predictions for the 861 persons recommended for reenlistment based on the coefficients and constants presented in Table 17. Here, again, the percentage of hits is quite acceptable. Of the 196 Category IV recruits that reenlisted, 162 (83 per cent) were predicted to reenlist. Almost 100 per cent hits was attained with the does not reenlist predictions. When both of the dependent variable groups' predictive data are combined, the discriminant function analysis is seen to provide 96 per cent hits.

Table 18

Classifications of Predicted and Actual Reenlistment Recommendation--Questionnaire 2

Actual	Predicted: Not Reenlist	Predicted: Reenlist	Total
Not Reenlist	662	3	665
Reenlist	34	164	196
			861

Questionnaire 3

The discriminant function analysis for the third questionnaire was based on 587 respondents. Four significant predictor variables resulted from this analysis. The respective F rations were: 5.59 for 1 and 585 degrees of freedom ($p < .05$), 4.66 for 2 and 584 degrees of freedom ($p < .01$), 3.91 for 3 and 583 degrees of freedom ($p < .01$), and 3.33 for 4 and 582 degrees of freedom ($p < .01$). The variables, coefficients, and constants for the discriminant functions for the recommend and not recommend for reenlistment groups are presented in Table 19.

Table 19

Coefficients for the Discriminant Functions Predicting Reenlistment Action--Questionnaire 3

Function	Coefficient: Recommend	Coefficient: Not Recommend
Perception of Navy Life	0.3898	0.3587
Technical Schooling	0.7589	0.7859
Supervisor Consideration	0.4449	0.4848
Affect of Recent Navy Changes	0.5669	0.5345
Constant	-20.2694	-19.8988

Table 20 presents the number of actual and the number of predicted Category IV personnel that were classified into the recommend and not recommend group. The discriminant function for predicting the not recommend for reenlistment group appears to make adequately adequate predictions. Eighty-five per cent of these predictions were hits. The predictions for the recommended for reenlistment group did not achieve this level. Twenty-five per cent of the predictions were hits for the latter classification. The overall percentage of hits was .59.

Table 20

Classifications of Predicted and Actual Reenlistment Recommendation--Questionnaire 3

Actual	Predicted: Recommend	Predicted: Not Recommend	Total
Recommended	65	192	257
Not Recommended	49	281	330
			587

Table 21 presents the results of the discriminant function analysis of the third questionnaire for the dependent variables of reenlist and not reenlist for those actually recommended for reenlistment. Three significant variables resulted. All F rations were significant at the .01 level. The respective F ratios obtained for the three variables were: 9.34 with 1 and 255 degrees of freedom, 8.12 with 2 and 254 degrees of freedom, and 6.77 with 3 and 253 degrees of freedom.

Table 21

Coefficients for the Discriminant Functions Predicting Reenlistment Action--Questionnaire 3

Function	Coefficient: Not Reenlist	Coefficient: Reenlist
Technical Schooling	0.6859	0.6117
Supervisor Consideration	0.5954	0.6532
Facilities for Studying	1.9886	2.1637
Constant	-18.1753	-20.6273

The prediction of the number of nonreenlistments from the group of Category IV personnel who were recommended for reenlistment was quite acceptable (Table 22). Out of a possible 183 that did not reenlist (of the 257 respondents to the third questionnaire that were recommended for reenlistment), the discriminant function analysis provided 97 per cent hits. A high percentage of hits did not result from the analysis of the actual reenlist classification. In this instance, the discriminant equation produced 12 per cent hits. The overall percentage of hits was 73.

Table 22

Classifications of Predicted and Actual Reenlistment Recommendation--Questionnaire 3

	Predicted		
Actual	Not Reenlist	Reenlist	Total
Do Not Reenlist	178	5	183
Reenlist	65	9	74
			257

Discussion

A comparison of the accuracy of the predictions from the discriminant analyses of the data yielded by the three questionnaires is presented in Table 23.

Table 23

Summary Table of the Percentage of Correct Classifications for Questionnaires 1, 2, 3

	Will Be Recommended %	Will Not Be Recommended %	Mean %	Will Reenlist %	Will Not Reenlist %	Mean %
Questionnaire 1	24	80	54	-	-	-
Questionnaire 2	97	56	75	83	100	96
Questionnaire 3	25	85	59	12	97	73
Mean	52	77	65	48	99	85

Since the point in the recruits' careers at which the third questionnaire was administered (nine months after completing boot camp) seems to be based on the greatest amount of military experience, it would seem that the most accurate predictions could be made from the data elicited by Questionnaire 3. However, Questionnaire 2 produced the most accurate predictions. We note that different variables were included in each questionnaire and accordingly in each discriminant analysis. It appears as if what is asked is more important than when it is asked. Nonetheless, after a minimum time in the Navy, reasonable predictions can be made relative to probable effectiveness (reenlistment recommendation) as a sailor and reenlistment action for the Category IV man.

These results also suggest that questionnaire techniques can be employed for predicting success in the Navy and for predicting the number of reenlistments that can be anticipated from among the successful Category IV personnel.

The predictions made in this study were based on the same sample of Category IV personnel on whom the discriminant function equations were developed. A cross validation of the predictive power of the discriminant functions on an independent sample of Category IV personnel seems warranted. Certainly, the accurate predictive power of the discriminant equations can be advantageously employed for career planning and shaping purposes.

Cross-Lagged Correlation Analysis

The prior sections of this chapter reported descriptive and predictive information relative to the career of the Category IV sailor. In order to determine whether or not any causal functions could be attributed to certain of the variables, a set of cross-lagged comparison correlation analyses was performed.

A simple statement of the traditional laboratory method for determining whether or not two variables are causally related involves an experiment in which one variable is manipulated in order to observe its effect on another variable. Unfortunately, survey studies which typically involve intact groups, do not lend themselves to such experimental manipulative methodologies. However, alternatives to the traditional experimental methodologies exist which offer ways of establishing causal relationships. While such designs have been classified as quasi experimental by Campbell and Stanley (1963), they may also be classified as correlational-causal in nature (Lawler, 1968).

Of particular interest here is the cross-lagged paired correlation method. The cross-lagged paired correlation method is based upon two important assumptions. According to Simon (1957, pp. 42-43), correlation is proof of causation, in the two variable case, if one is willing to make the assumptions of time precedence and non-correlation of error terms. Time precedence refers to the condition that variable A is known to precede variable B in time. Given this known time sequence, then B is normally assumed not to have any direct influence on A. Non-correlation of error terms refers to the assumption that all other variables influencing the A variable are uncorrelated with all other variables influencing the B variable. The specific logic underlying the cross-lagged paired correlation method hinges on the time lag that typically exists when one variable causes another and application of the method is optimized when the delay between changes in the first variable and changes in the second variable correspond with the separation between data collection points. While application of the cross-lagged method meets the assumption of time precedence as discussed by Simon (1957), the basic method fails to consider the assumption of non-correlated error terms. All the basic method can provide is support for the hypothesis that variable A implies variable B, or alternatively, that variable B implies variable A. Whether a third variable (C) has caused both A and B to covary may be inferred by using dynamic correlations. Such correlations may be used to support the assumption of non-correlated error terms. Dynamic correlational methodology requires correlating the difference between the scores of variable B at time 1 and time 2 (Vroom, 1966). According to Lawler (1968), one can usually have confidence in a significant dynamic correlation of this type. Should a third variable (C) have caused a spurious correlation between ΔA and ΔB, then C, the confounding variable, must have changed in different amounts or directions. Since such an event is unlikely, a high correlation between ΔA and ΔB would tend to rule out the possibility that any other variables influencing A are correlated with the variables influencing B.

In the present case, a number of cross-lagged correlational analyses was attempted. Only one which meets the criteria was isolated.

Figure 4 presents the cross-lagged correlation data for the self-ratings of the four items included in the category of general satisfaction and the two items included in the category of career plans-reenlistment (Table 1) for the first two questionnaires.

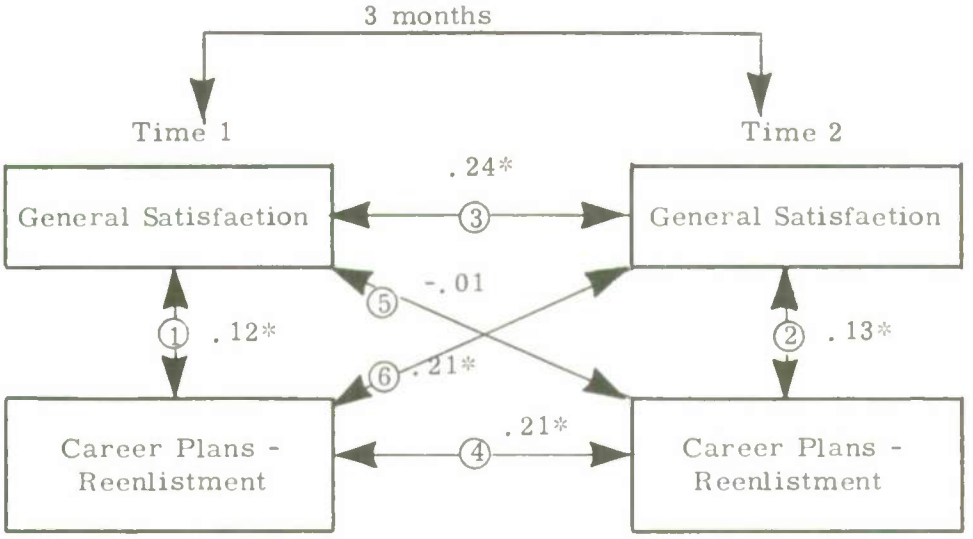

Figure 4. Cross-lagged correlation results showing the relationship $6 > 1 \cong 2 > 5$

*(P < .05)

The two data collection points, separated by three months in time, suggest that stated intent to reenlist (A) causes some stated general satisfaction (B) among Category IV personnel while in boot camp. While the possibility that B caused A is not tenable, the possibility that a third variable (C) caused both variables A and B to covary cannot be ruled out since the necessary dynamic correlations were not computed. Although the data fit the cross-lagged model perfectly in terms of directional relationships ($6 > 1 \cong 2 > 5$), the general magnitude of the Pearson correlations is low. The generally low level of the coefficients is partly attributable to the fact that correlations based on a statistic for dichotomized variables would have been more appropriate. Therefore, the coefficients presented in Figure 4 may be regarded as underestimates .

The weak causal link between stated intention to reenlist and stated satisfaction would seem to find some support when interpreted within the Festinger (1957) theory which relates self consistency and the reduction of cognitive dissonance. According to Festinger, one's attitudes, beliefs, and related behavior tend to form a consistent pattern. After a person has made a decision, he is then committed to a certain course of action. Under such circumstances, there is often a lack of harmony between what he is presently doing and what he actually believes. Thus, once a recruit in boot camp has stated his intention to reenlist, his future statements about general satisfaction would tend to be consistent with his prior statements concerning intended reenlistment (see link #6 in Figure 4). Dissonance theory goes on to make some predictions which are not at all obvious. For example, in some cases a failure of expectations may even strengthen beliefs about the Navy rather than destroy them. When the long awaited day of graduation from recruit training draws near (Time 2) and the expectations of some recruits have failed to come true, those who have the social support of other believers in the Navy way of life would be predicted to proselytize their beliefs with new enthusiasm (Festinger, Riecken, & Schachter, 1956). Accordingly, it would seem reasonable that intention to reenlist would be a better predictor of general satisfaction than the reverse (see link #5 and link #6 in Figure 4) when viewed within the Festinger theory.

Other cross-lagged correlations, which when applied to the responsibility versus career plans-reenlistment variables over the three month time period associated with recruit training, failed to properly fit the model. The variables, career plans-reenlistment and the Navy versus civilian life on motivating factors, which were sampled over three points in time, also resulted in correlations which failed to meet the requirements of the cross-lagged model, as did the correlations between career plans-reenlistment versus actual reenlistment, and general satisfaction versus actual reenlistment.

These findings also support our prior contention of the lack of simple group variable causal relationships in the dynamic Navy situation. Individual differences here, as in other complex aspects of life, seem overriding.

CHAPTER IV

QUESTIONNAIRE 4

The fourth, and final, questionnaire included in this study was administered at the termination of the initial enlistment of the sample (after two years in the Navy). Since the data provided by the respondents at this point in their careers are retrospective, they are summarized rather than treated in a predictive or causal manner. Moreover, some of the sample left the Navy without completing the fourth questionnaire. Some of these respondents completed the questionnaire after their discharge and reentry to civilian life. Additionally, there were a number of other influences affecting grouped data for Questionnaire 4. Among these are: early honorable and dishonorable separations, unusable returns, and no returns. Accordingly, the sample size for Questionnaire 4 was 390.

Navy Duty Assignment

The respondents to Questionnaire 4 were asked to identify the most significant aspect of their last Navy job, in terms of 12 different variables. To 29 per cent of the sample, the social aspects of the job in terms of the "kind of people I work with" was said to be the most important. The variables selected next most often involved the job duties for which the respondent was responsible, performing interesting and challenging work, and the supervisor. The percentage of respondents selecting these options were 11, 10, and 10, respectively. Eight per cent of the sample claimed that the change to use their skills and abilities on the job was more important than anything else. The opportunities for learning technical skills on the job was selected by six per cent of the cohort sample. All the other options were selected by five per cent, or less, of the respondents. Hence, Category IV personnel generally found the following job related conditions of little importance: personal recognition for good work, suitable pay for the duties performed, geographic location of assignment, working conditions, chances for advancement, and working hours. It may be that these represent aspects of the job assignment over which the Category IV man perceives himself to have little control and, accordingly, are not seen as being among the most important variables.

Figure 5 presents the type of assignments the Category IV men had at the end of their first two year enlistment. The majority were assigned to sea duty (68 per cent). Sea duty included, among other assignments, aircraft carriers, service force ships, amphibious ships/crafts, destroyers, cruisers, diesel submarines, nuclear submarines, tenders, and afloat staff; shore duty involved assignments both inside and outside the United States; aircraft squadrons included both those which are carrier based and shore based.

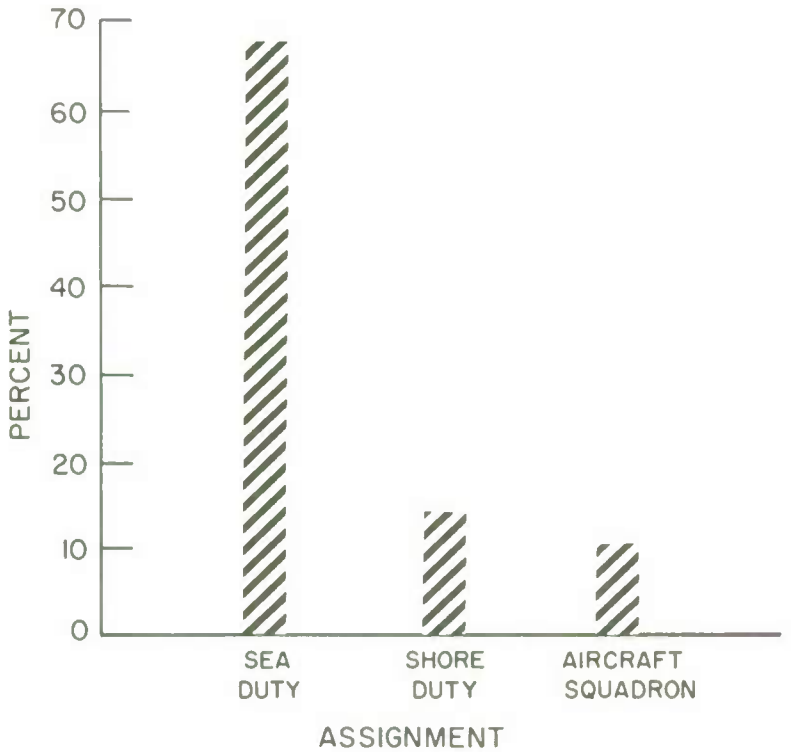

Figure 5. Distribution of assignments of sample after two years in the Navy.

Navy Occupations

The Navy occupation (rating) distribution of 1196 of the 1837 sailors in the cohort sample was obtained at the termination of their two year enlistment. The 1196 rated men represent those personnel who had reserve duty obligations; the remainder of the 1837 were primarily deserters or general dischargees. Table 24 presents the ratings to which the men were assigned.

Attitude Toward Navy

The worst aspect of Naval service for the Category IV men was said to be the extended time that they were away from home. Twenty-seven per cent of the sample selected this response. The second most frequently selected objection to Naval service was insufficient pay. The following four conditions were identified as the most objectionable by either five or six per cent: high risk of sustaining injuries, chances for promotion, the supervisor, and on-base living conditions. The least frequently mentioned causes for dissatisfaction with the Navy were: getting along with coworkers, frequent moves, medical care for dependents, and family housing. These options were selected by three, two and one per cent of the sample. Although ten different options were provided, the largest percentage of respondents indicated that the worst part of Naval service had not been included within the response options offered. Thirty-one per cent claimed that there were other aspects of Naval service that were worse than those offered in the options. In order to determine causes for discontent in the Navy, the distribution of responses from among this third of the sample should be sought.

Navy Career Plans

Almost half of the Category IV personnel responding to Questionnaire 4 had not decided on their career plans after two years in the Navy. One-fourth of the sample reached their career decisions during recruit training or during one of their sea or shore duty assignments. By extrapolation, these data indicate that some Category IV personnel may reenlist without having made definite plans for a career in the Navy or otherwise.

The respondents were asked to name the single most important action the Navy could take that would influence those who were not planning on reenlisting to change their course of action and reenlist. The most frequently selected option was to allow those who were dissatisfied with their rating to change to another rating. This option was selected by slightly more than one-fourth of the Category IV personnel who were not planning on reenlisting. Slightly less than one-fourth of the respondents would consider reenlisting if they were given more free time when they were in homeport (by reducing watches, duties, and overtime work).

Table 24

Occupational Distribution of Category IV Personnel (N = 1, 196)

Category*		Per Cent of Total
Deck		
Boatswain Mate (BM)		.2
Signalman (SM)		.3
	TOTAL	.5
Electronics		
Electronics Technician Radar (ETR)		.1
	TOTAL	.1
Administrative/Clerical		
Radioman (RM)		.4
Yoeman (YN)		.4
Communications Yoeman (CYN)		.7
Personnelman (PN)		.1
Storekeeper (SK)		.2
Commissaryman (CS)		.1
Ship's Serviceman (SH)		.2
	TOTAL	2.1
Miscellaneous		
Lithographer (LI)		.2
Seaman (SN)		27.1
Seaman Apprentice (SA)†		25.1
Seaman Recruit (SR)††		1.6
	TOTAL	54.0
Engineering/Hull		
Machinist's Mate (MM)		.2
Engineman (EN)		.1
Machinery Repairman (MR)		.1
Boilerman (BT)		.1
Electrician's Mate (EM)		.2
Hull Technician (HT)		.1
Patternmaker (PM)		.1
Fireman (FN)		8.6
Fireman Apprentice (FA)†		8.0
Fireman Recruit (FR)††		.2
	TOTAL	17.7
Construction		
Equipment Operator (EO)		.3
Construction Mechanic (CM)		.3
Builder (BU)		.3
Utilitiesman (UT)		.2
Constructionman (CN)		.2
Contruction Apprentice (CA)		.6
	TOTAL	1.9
Aviation		
Aviation Machinist's Mate (ADJ)		.2
Aviation Boatswain's Mate (ABH)		.2
Aviation Structural Mechanic (AMS)		.1
Aviation Structural Mechanic (AME)		.1
Aircrew Survival Equipment (PR)		.1
Airman (AN)		11.8
Airman Apprentice (AA)†		9.6
Airman Recruit (AR)††		.3
	TOTAL	22.4
Medical		
Hospital Corpsman (HM)		.2
Hospitalman (HN)		.2
Hospital Apprentice (HA)†		.1
	TOTAL	.5
Steward		
Steward (SD)		.1
Stewardsmand (TN)		.5
Steward Apprentice (TA)		.2
	TOTAL	.8

Advancement opportunities, possibilities for technical training, and decreasing the frequency and duration of deployment were each selected by slightly more than 10 per cent of the Category IV personnel that were not planning to reenlist. Providing better supervisors and improving work duties were mentioned infrequently as important factors relative to failure to reenlist.

The Category IV men who actually reenlisted were first requested to go through three sets of options, selecting one from each set which identified the most important reason for their reenlisting in the Navy, Subsequently, the respondents identified the single, most important cause for their reenlistment. The four causes most frequently attributed by the Category IV men for their reenlistment in the Navy were:

- chances for education and training (19 per cent)
- travel, new experiences, adventure (16 per cent)
- belonging to an organization men can be proud of (12 per cent)
- retirement benefits (9 per cent)

The five options never selected by the sample, obviously, were of little or no relevance to the Category IV man's reenlistment decision. These options were: lasting friendships with people who share a man's interests, chances to talk with others while on the job, amount of social activities, praise and commendations, etc., for good performance, physical conditions under which men work, and treatment by supervisors. On balance it appears that the reasons for a Category IV man's reenlistment is an individual matter and may be dependent on any one or more of many different motivating factors. However, after two years of service, large numbers of these personnel expressed an interest in the Navy because of the benefits they will derive from the education, training, travel, and the retirement programs.

Factor Analysis

The questionnaire items, with the exception of those discussed in the previous section, were factor analyzed in the same manner as the first three questionnaires. The purpose for factor analyzing the responses was to develop constructs by which the sample of Category IV personnel could be described at the end of his first enlistment.

Several items in the fourth questionnaire were combined to form single variables. Where this was done, a single scaled score was used to represent the variable in the factor analysis. The combined variables were: present duty assignment (18 items), evaluation of current supervisor (18 items), opportunities in present assignment (6 items), shipboard facilities and services (8 items), benefits derived from Navy (5 items), working conditions on active duty (7 items), interpersonal relations on active duty (4 items), physical/mental conditions on active duty (8 items), education and training received on active duty (2 items), disciplinary actions (5 items), general satisfaction (4 items), and responsibility (20 items).

Five factors were identified. Here, the eigenvalue criterion was set at 1.0. The five factor solution accounted for 32 per cent of the variance. The factors were named and are presented tabularly. Only those variables with loadings greater than .40 are presented in the tables.

Table 25 presents the first factor, which was named Evaluation of Navy Life. This factor accounted for 18 per cent of the variance. The factor describes a level of satisfaction with life in the Navy. It is more specific to the Navy than to life in general, and includes such aspects of Navy living as the treatment received, interpersonal relations, and physical facilities and services.

Table 25

Items with Highest Loadings on Evaluation of Navy Life Factor

Variable	Loading
What do you think of Navy life in general now?	.72
Interpersonal relations on active duty?	.69
In general, what do you think of the Navy duty stations to which you were assigned?	.68
Physical/mental conditions on active duty?	.67
Which of the following best describes your entire first enlistment?	.65
Shipboard facilities and services?	.59

The second emergent factor accounted for four per cent of the variance. This factor was called Interactive Skill Evolution. The variables with loadings of .40 or greater on this factor are presented in Table 26 In part, the items contained in this factor seemed concerned with the relationship between Navy skill requirements and civilian skill requirements. The word "interactive" was chosen to represent this relationship. The word "evolution" was included in the name of this factor because the factor seems to involve pre-Navy, in service, and post-Navy considerations.

Table 26

Items with Highest Loadings on Interactive Skill Evolution Factor

Variable	Loading
How much alike are your Navy job and the kind of job you expect to have one year after you leave the service?	.61
How much use does your present duty assignment make of your civilian job skills?	.59
Did the Navy make some use of your civilian job skills?	.53
Are you in (or striking for) the rating you like best?	.48
Present duty assignment	.46
Working conditions on active duty	.44
In general, what do you think of the kind of job duties you have had in your rating?	.42

General Satisfaction (Table 27) emerged as an independent factor in the fourth questionnaire, whereas in the second questionnaire, it was subsumed in the factor called Work and Person Interaction. The General Satisfaction factor accounted for four per cent of the variance. The general satisfaction scale, as included in the study, measured the individual's morale and contentment. It dealt with life in general and the way in which the Category IV man perceives his lot. The item pertaining to the Category IV man's pay grade was also found to load on this factor. This item probably falls into this factor because of the correlation between achieved pay grade and the resultant general satisfaction.

Table 27

Items with Highest Loadings on General Satisfaction Factor

Variable	Loading
My present pay grade is	.49
General satisfaction	.42

The fourth factor, named Time in Rate and Rating, accounted for four per cent of the variance. Both of the variables which loaded above .40 on this factor were negatively loaded. Accordingly, the time continuum which underlies the variable loading on this factor should be integrated in the inverse sense (Table 28).

Table 28

Items with Highest Loadings on Time in Rate and Rate Factor

Variable	Loading
How long have you had your rating (BM, QM, etc.)?	-.76
Number of months in your present pay grade	-.60

The variables loading on the fifth and final dimension resulting from factorization of Questionnaire 4 are presented in Table 29 This factor, which accounted for two per cent of the variance, was composed of four variables possessing loadings greater than .40. The factor was named Watch Schedule to reflect the negative pole and the variables which were negatively loaded.

Table 29

Items with Highest Loadings on Watch Schedule Factor

Variable	Loading
Number of shore duty activities you were assigned to during your first enlistment	.42
What is your present shore duty watch schedule?	-.55
How many months of sea duty did you have during your first enlistment?	-.46
My normal watch schedule on my present sea duty assignment is	-.45

CHAPTER V

SUMMARY AND CONCLUSIONS

Four questionnaires were administered at different times in the career of Category IV Naval personnel who entered the service for a two year enlistment. The questionnaires, which were designed to tap motivations, perceptions, attitudes, and opinions toward Navy life, were administered on entry into the service, at the termination of recruit training, one year after entering the service, and after two years in the service.

The responses to the four questionnaires were subjected to factor analyses for the purpose of developing constructs which could be used to describe the Navy oriented perceptions and reactions of the sample.

One factor was common to the data for all three time periods. This factor was named Perception of Navy Life. Factors common to two time periods were: Work and Person Interaction (Questionnaires 1, 2), Perception of Physical Regimen of Recruit Training (Questionnaires 1, 2), and Supervisor Consideration (Questionnaires 2, 3). Factors unique to the data for each time period were:

Questionnaire 1

- Inducements to Enlist
- Preenlistment Employment Record
- Encouragement of Others to Enlist in the Navy
- Self Realization
- Educational Stimulation

Questionnaire 2

- Sick Call Treatment
- Satisfaction with Rate

Questionnaire 3

- Technical Schooling
- Affect of Recent Navy Changes
- Satisfaction with Supervisors
- Value Judgments Relative to Navy Life
- Facilities for Studying

Questionnaire 4

- Evaluation of Navy Life
- Interactive Skill Evaluation
- General Satisfaction
- Time in Rate and Rating
- Watch Schedule

The factors that emerged from the analysis of the first three questionnaires were utilized in a stepwise discriminant function analysis for the purpose of developing questions that could be used to predict the probability that these personnel will be recommended for reenlistment and the probability that they will reenlist. The resulting discriminant functions possessed reasonable predictive power in most cases.

Generally, the data suggested that the isolation of group variables which can be employed to describe the adjustment of the individual Category IV sailor is not highly productive. It was suggested that individual differences are so great and the number of variables is so large that a study of individuals, rather than groups, is indicated.

The study also served to provide data important for recruiting and helping the career development of the Category IV man. These data include, but are not limited to information relative to: background and home, factors influencing enlistment, effects of others on the enlistment decision, Navy career plans, attitudes towards the recruit testing and classification procedure, types of assignments received, attitudes toward supervision and the Navy on-the-job environment, perception of the effects of the Z-grams, and interpersonal relationships.

The following highlights may be of special interest:

1. Most of the sample lived with one or both parents while they were growing up and 19 per cent came from broken homes.

2. The fathers of five per cent had made careers in the military.

3. Most did not interrupt their education to join the Navy.

4. The chance for the education and training was the most frequently stated primary reason for joining the Navy.

5. The persons most influential in the decision to join the Navy were the father, mother, and Navy recruiter.

6. The enlistment of a small percentage was discouraged by teachers, coaches, guidance counselors, and the like.

7. About half shopped from service to service before deciding on the Navy.

8. A Navy career was planned by only a small portion.

9. Most indicated that they had been adequately advised of the importance of the tests administered for classification purposes, although a small proportion indicated a lack of satisfaction with the testing conditions. About a third expressed a lack of satisfaction with the classification interview.

10. Although education and training was a prime enlistment reason, most of the sample did not receive any school assignments (of more than a week duration) after recruit training.

11. After two years in the Navy, "working hours" appeared to be of greater concern to the men than when they first enlisted and fewer cared "a lot" about standards of conduct and appearance.

12. The sample did not perceive the Z-grams to exert a great effect on easing of regulations, leave and liberty, personal services, equal opportunities, rotation and retention, and family assistance.

13. Those who were hospitalized largely thought the hospital treatment to be "very good."

14. About a quarter of the sample said that they did not receive enough on-the-job help when they needed it.

15. Almost all said they got along "very well" or "fairly well" with their fellow workers in the Navy.

The adjustment of the Category IV man to the Navy was held to be quite complex and varying in response to the changing requirements placed on him by his Navy assignments and responsibilities. Understanding the nature of these complex interrelationships was held to be required if one is to understand fully the response of the Category IV man to Navy life. Moreover, an individual, rather than a group approach to the problem, may be indicated.

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