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Officer Career Development: A Review of the Civilian and Military Research Literature on Turnover and Retention

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**Officer Career Development:
A Review of the Civilian and Military Research
Literature on Turnover and Retention**

Gerry L. Wilcove
Regina L. Burch
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13. ABSTRACT (Maximum 200 words) Reviews were conducted of both the civilian and military research literatures on turnover in preparation for a predictive study involving aviation warfare officers and actual retention behavior. In the present report, results from the two literature reviews are presented and compared. An annotated bibliography, which has been computerized, is also presented, and is available on disk upon request. Both the literature reviews and the subsequent retention study were part of a 9-year research program that examined a wide range of career development and career management issues for three unrestricted line officer communities: aviation warfare officers, surface warfare officers, and general unrestricted line officers.				
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FOREWORD

This effort was conducted within program element 0602233N (Mission Support Technology), project RM33M20 (Manpower and Personnel Technology), task RM33M20.06 (Career and Occupational Design). The purpose of the work unit was to develop explanatory models of unrestricted line (URL) officer career decisions. Models of this type could then be used to assess the impact of existing and proposed URL career policies and practices upon officers' career decisions and activities.

This report was completed under the sponsorship of the Office of Chief of Naval Research (ONT-222). It reviews and compares the results of the military and civilian research literatures on retention/turnover. The present report was done to identify those variables that should be included in a study of the factors influencing aviator retention. A microcomputer-based decision aid incorporating the abstracts of the literature review was provided to the Chief of Naval Operations (OP-136D) to help him respond to specific questions about retention. Following the literature review, the Navy Personnel Research and Development Center conducted research on aviator retention. Results of that effort can be obtained from the points of contact on officer career research, Dr. Robert F. Morrison, who originated and directed the research program (AUTOVON 553-9256 or Commercial (619) 553-9256) and Dr. Gerry L. Wilcove (AUTOVON 553-9120 or Commercial (619) 553-9120).

JULES I. BORACK
Director, Personnel Systems Department

SUMMARY

Problem

Since fiscal year (FY) 1982, the retention of pilots until the completion of their eleventh year of service has often been too low for the Navy to adequately fill its department head billets. For example, the Navy estimated in FY90 that there was a 34 percent chance that jet pilots in their sixth year of service would remain in the Navy until the completion of their eleventh year. The Navy's goal was 42 percent. In addition to pilots, the Navy has experienced retention problems at times for naval flight officers (NFOs) within certain aviation subcommunities.

Objective

The goal of the present effort was to help the Navy increase the retention of quality aviation warfare officers. This effort, a review of the civilian and military research literature on retention and turnover, was a prelude to a study designed to predict which aviators would remain in the Navy and which would leave. The purpose of the literature review was to identify factors that would be expected to predict turnover behavior, and then to use these factors in the planned research.

Procedure

The Navy Personnel Research and Development Center (NAVPERSRANDCEN) maintained a research program from 1981 to 1989 that: (1) examined a wide range of officer career development and management issues, and (2) produced databases comprised of questionnaire and personnel record data collected at two points in time (FY82 and FY86/87). The project focused on three unrestricted line officer communities, one of which was aviation warfare officers. The same individuals, where possible, were included in both data collection efforts, and many of the same questionnaire items were employed to detect changes over time. One of the main goals of the project was to assist the Navy in its attempt to retain quality unrestricted line officers for full 20-year careers. Thus, one of the planned efforts was to use questionnaire data in an attempt to predict whether or not aviators remained in the Navy or left. In advance of that effort, a literature review was conducted to obtain the most up-to-date information on which variables could be expected to predict retention behavior. The literature review is summarized in the present report, and the results of the predictive study are contained in an article submitted for publication in a professional journal.

Findings

1. The use of background factors to predict turnover has not been very successful in either the civilian or military realm, even though studies have examined variables such as age, marital status, family size, and educational level.
2. Measures of personality traits, as well as interest inventories, have been shown to be promising predictors of turnover in both the civilian and military sectors.
3. The most consistent relationship emerging from both the civilian and military literatures was that the probability of turnover decreases as job challenge and autonomy increase.

4. The civilian literature indicated that lower turnover rates were associated with a considerate supervisory style and satisfaction with one's co-workers. Military studies only focused on these two areas as part of broad spectrum efforts, and thus definitive conclusions await future research.

5. Civilian studies, although few in number, suggested that higher levels of turnover were associated with higher levels of family and personal-life stress. Extensive work in the military implicated spousal support as a key variable in the service member's decision to remain in the military. Varied and sometimes conflicting results were obtained on the influence of family separation on retention decisions.

6. Civilian research on organizational characteristics and practices concentrated on realistic job previews. Results suggested that individuals who had been briefed on both the positive and negative aspects of an organization tended not to attrite. Research in the military generally suggested that lower levels of turnover were associated with favorable perceptions of organizational characteristics (e.g., an emphasis on human resources and a responsive assignment system).

7. Civilian and military studies consistently found that lower levels of turnover were associated with higher levels of pay and perceived promotional opportunity.

8. Results in the civilian sphere suggested that high turnover rates were related to the availability of attractive jobs and low unemployment rates. Military research revealed that military-civilian pay differential was an important consideration in turnover decisions for naval aviators, along with the availability of civilian jobs, job benefits, and the person's perception of their own marketability.

9. Both civilian and military studies found that low turnover rates were associated with high levels of job satisfaction, organizational commitment, and met expectations.

10. Both the civilian and military literatures indicated a strong relationship between intention to leave and actual turnover behavior.

Conclusions

The research literature suggested that various factors help predict turnover. It was thus concluded that these factors should be considered in any attempt to predict the turnover/continuance of aviation warfare officers. The factors identified by the literature included: personality characteristics; interest inventory scores; job challenge; supervisory style (considerate versus authoritarian); spousal support; organizational characteristics and practices; pay and promotional opportunities; availability of attractive civilian jobs; measures of job satisfaction, organizational commitment, and met expectations; and the intention to stay or leave an organization. These factors should be considered by individuals studying the retention/turnover issue. Most of them were included in the aviation warfare officer study, which has been submitted for publication in a professional journal.

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INTRODUCTION

Problem

Since fiscal year (FY) 1982, the retention of pilots until the completion of their eleventh year of service has often been too low for the Navy to adequately fill its department head billets. For example, the Navy estimated in FY90 that there was a 34 percent chance that jet pilots in their sixth year of service would remain in the Navy until the completion of their eleventh year.¹ The Navy's goal was 42 percent. In addition to pilots, the Navy has experienced retention problems at times for naval flight officers (NFOs) within certain aviation subcommunities.

Objective

The goal of the present effort was to help the Navy increase the retention of quality aviation warfare officers. This effort, a review of the civilian and military research literature on retention and turnover, was a prelude to a study designed to predict which aviators would remain in the Navy and which would leave. The purpose of the literature review was to identify factors that would be expected to predict turnover behavior, and then to incorporate these factors in the planned research.

Background

The Navy Personnel Research and Development Center (NAVPERSRANDCEN) maintained a research program from 1981 to 1989 that was devoted to a wide range of officer career development and career management issues. This program focused on surface warfare officers, aviation warfare officers, and general unrestricted line officers. Morrison and Cook (1985) describe the conceptual and methodological foundations of the research program.

Data were collected at two points in time for the research program: FY82 and FY86/87. Approximately 300 interviews were conducted at both times on retention issues and a variety of career development and management topics. In addition, questionnaire data were collected from over 9,000 individuals in FY82 and 12,000 individuals in FY86/87. Of the 12,000 individuals, close to 5,500 constituted the "longitudinal" sample; that is, they had completed questionnaires at both points in time, and since the questionnaires contained many of the same items, the resulting database contains "repeated-measures" data.

One of the main goals of the research was to assist the Navy in its attempt to retain quality unrestricted line officers for full 20-year careers. The aviation community was of special interest to the researchers because of the retention problems it was experiencing. Thus, one of the project's planned efforts was to use questionnaire data in an attempt to predict which aviators remained in the Navy and which ones left. The longitudinal database contained close to 500 questionnaire variables related to retention and a variety of career development and management issues. The most up-to-date information was needed on which of these variables could best predict retention behavior. Some of this information was provided by the interviews that had been conducted. Possible predictors were also suggested by an earlier predictive study with aviators (pilots and

¹Personal communication with CAPT B. J. O'Connell (PERS-21D2), Aviation Community Manager, on 11 September 1991.

NFOs combined) (Bruce & Burch, 1989). It was also decided to conduct a literature review because of important advances in the understanding and prediction of turnover/retention. The results of that effort are published in the present report, while the results of the predictive study are presented in a document submitted for consideration as a journal article (Murphy & Morrison, in process). (Pilots and NFOs were examined separately and together.)

Approach

A computer search was made of the Psychological Abstracts to identify the civilian and military studies on turnover and retention. These studies were then reviewed, evaluated, and summarized.

Organization of the Report

The findings of the literature search are briefly summarized in the report and are organized by classes of factors that had been examined as possible predictors of turnover (e.g., background factors, personal characteristics, and organizational practices).

Four appendices are included. Appendix A presents the unabridged literature review written by Wilcove and Burch. Two reference lists are provided, one for the civilian studies that were reviewed, and one for the military studies. Appendix B presents a limited portion, for illustrative purposes, of an annotated bibliography that was constructed by Conroy and Bruce. This bibliography, which has been computerized, contains many of the studies included in the literature review. An asterisk has been placed in the reference lists next to studies abstracted in the annotated bibliography. Appendix C, prepared by Bruce, describes the steps that should be followed to load and access the studies on a Zenith 248 using the REFEREE Bibliographic Database Manager (Raymond, 1987). Diskettes are available of the studies stored in the REFEREE system. Appendix D, prepared by Conroy, presents an alphabetized list of the identifiers needed to access studies.

FINDINGS²

Background Factors

The use of background factors to predict turnover has not been very successful. Of the five factors examined in the literature (age, marital status, family size, race, and educational level), only age was shown to relate to turnover, such that the older the individual the less likely they were to leave the organization. Regarding educational level, civilian studies tended to show that lower (higher) levels of education were associated with a lower (higher) probability of turnover. Military studies with enlisted personnel showed just the opposite. The longer the tenure of an individual in a civilian organization, the less likely there were to leave. While it was presumed that this dynamic also applied to military settings, the particular function relating turnover and tenure had not been examined to any great extent. While gender had been examined in the civilian literature, this

²A negative (positive) relationship between turnover and another variable means that higher (lower) levels of turnover are associated with lower (higher) levels of the variable under consideration. For example, a negative relationship between turnover and intelligence means that higher levels of turnover are associated with lower levels of intelligence.

variable was not relevant, for the most part, to officer warfare communities, which are composed primarily of males.

Personal Characteristics

Measures of personality traits, as well as interest inventories, were shown to be promising predictors of turnover in both the civilian and military realms. The civilian literature was extensive regarding personality traits, while the military literature was more limited. A variety of personality predictors were shown to correlate with turnover in the civilian realm, including need for achievement, self-assurance, and coping abilities. Some traits were more important than others, depending on occupational group. In the military, conformity and internal "locus of control" (the person views themselves as controlling their own behavior rather than its being the product of chance or circumstances) were identified as promising correlates of turnover. Regarding interest inventories, it was found, as expected, that turnover tended to be less if a person's job was congruent with their interests. Interest inventories were used as selection tools in some cases and simply as measurement tools for people already placed in jobs in other instances. Contradictory results were found in both the civilian and military spheres regarding the predictive value of aptitude and intelligence.

Job/Career Characteristics

The most consistent relationship emerging from both the civilian and military literatures was that the probability of turnover is inversely associated with job challenge (autonomy and responsibility): the greater the challenge, the less turnover in an organization. The civilian literature tended to support expected relationships for work unit size and task repetition; in short, the larger the work unit and the more task repetitiveness, the higher the turnover rate. In the civilian realm, higher turnover tended to be associated with unclear role definitions. In the military realm, early studies were split in their conclusions regarding the contribution of job factors to turnover, while later studies emphasized their importance, especially the contribution of challenge and autonomy.

Social Environmental Factors--At Work

The civilian literature corroborated a relationship between turnover and both supervisory style and satisfaction with co-workers, although the form of the relationship (linear or curvilinear) had not been conclusively determined. Concerning supervisory style, a considerate style was shown to be related to lower turnover than were task-oriented and authoritarian styles. Various elements of supervisor-subordinate relationships were examined (communication, feedback, opportunity to voice dissatisfaction, etc.), with expected results; for example, lower turnover was related to quality and consistency of communication and feedback, and the opportunity to voice dissatisfactions. The military research had not focused on these types of variables, except as part of omnibus studies, making it difficult to draw conclusions.

Social Environmental Factors--Nonwork (Family)

This group of factors was shown in both the civilian and military literatures to be related to turnover. The civilian literature was limited, however, and had done only preliminary work

regarding family life variables and personal life stress. In contrast, military personnel research was fairly extensive and had focused on spousal support, family life, personal freedom, and separation from family. Spousal support and personal freedom variables yielded the highest correlations (i.e., low turnover was related to spousal support and the belief that the service member's and the family's personal freedom were not appreciably curtailed by military service). The conclusions of military personnel researchers varied markedly regarding the impact of family separation on turnover, some researchers viewing this variable as relatively unimportant and others viewing it as a key variable for understanding turnover.

Organizational Characteristics and Practices

Civilian research in this area was limited, although military personnel research was quite extensive. Civilian research concentrated primarily on realistic job previews, and results generally supported the notion that individuals who have been briefed on both the positive and negative aspects of an organization tend not to attrite. There was reason to believe that some individuals, having received a preview, "selected themselves out"; and thus, did not become a member of an organization. Research done in the military tended to support a negative relationship between organizational characteristics and turnover (the more favorable the perceptions of the service members, the lower the turnover rate). A variety of factors were examined (e.g., emphasis on human resources, the assignment process, and policies regarding living conditions) and they were found to apply to both enlisted and officer personnel, the latter including the surface warfare and aviation warfare communities.

Job Performance and Evaluations

The issue raised in the civilian and military literatures was whether good performers were the ones leaving for greener pastures. Many civilian researchers concluded that no clear-cut answer was available. They suspected that the inconsistent results reflected time of data collection (i.e., whether data were collected before or after individuals had made their turnover decisions). In the military, studies were scarce, although available data suggested that good performers decided to stay rather than leave.

Economic Environment--Internal

Civilian studies consistently found a negative relationship between pay and promotion and turnover, such that the higher the pay and the greater the probability of promotion, the lower the probability of turnover. Other civilian studies examining incentive programs and the financial success of organizations found results in the expected direction, but too few studies had been conducted to draw definitive conclusions. Military personnel researchers identified pay and promotion as the primary factors affecting turnover decisions, although a few studies suggested that nonpecuniary factors such as job and organizational characteristics were more important.

Economic Environment--External

Initial results in the civilian sphere suggested that turnover was related to the availability of attractive jobs outside one's current organization and low unemployment rates. However, researchers were still attempting to: (1) identify the actual chain of events involved (e.g., some

studies suggested that external economics affected turnover intention which then affected behavior) and (2) clarify dependent variables (e.g., whether results pertained to individual turnover decisions or decisions aggregated across individuals). Military personnel researchers suggested that military-civilian pay differential was not important in the turnover decision except for naval aviators, but that perceived job alternatives, benefits, and a person's perception of their own marketability were important considerations.

Affective Responses

Both civilian and military researchers consistently found negative relationships (some of them strong) between "affective" responses and intended and actual turnover. Affective responses were defined in the literature as a strong liking or disliking for something (an issue, program, behavior, etc.) based on positive or negative evaluations. Three affective measures, in particular, were found to be effective predictors: job satisfaction, organizational commitment, and met expectations. It was presumed with respect to the last that expectations reflected an opinion on what "should be" and that met expectations gave rise to strong positive emotional reactions, and unmet expectations, strong negative reactions. Some research suggested that organizational commitment was a better predictor than job satisfaction, although in both cases, it was assumed that they directly affected turnover behavior. However, other research suggested that all affective response-turnover relationships were indirect (i.e., affective responses influenced the intention to stay or leave, which, in turn, influenced actual turnover behavior).

Behavioral Intentions

Both the civilian and military literatures indicated a strong relationship between intention to stay or leave and actual turnover behavior. Most researchers seemed to agree that this relationship was the primary one, with other variables, such as economics, being indirectly related to turnover through the intention to stay or leave.

Withdrawal Behaviors

Civilian research suggested that withdrawal behaviors such as absenteeism, declining performance, and turnover all reflected the same underlying psychological process and that the individual often showed a progression from one behavior to the next. Military studies examining these kinds of issues were lacking.

CONCLUSIONS

The research literature suggested that various factors help predict turnover. It was thus concluded that these factors should be considered in any attempt to predict the turnover/continuance of aviation warfare officers. The factors identified by the literature included: personality characteristics; interest inventory scores; job challenge; supervisory style (considerate versus authoritarian); spousal support; organizational characteristics and practices; pay and promotion opportunities; availability of attractive civilian jobs; measures of job satisfaction, organizational commitment, and met expectations; and the intention to stay or leave an organization. These factors should be considered by individuals studying the retention/turnover issue. Most of them were included in the aviation warfare officer study. That study has been submitted for publication to a professional journal.

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APPENDIX A
UNABRIDGED LITERATURE REVIEW

Gerry L. Wilcove
Regina L. Burch

UNABRIDGED LITERATURE REVIEW¹

Background Factors

The use of background factors to predict turnover has not been very successful. Of the five factors examined in the literature (age, marital status, family size, race, and educational level), only age has been shown, generally speaking, to relate to turnover, such that the older the individual the less likely they are to leave the organization. Regarding educational level, civilian studies tended to show that lower (higher) levels of education are associated with a lower (higher) probability of turnover. Military studies with enlisted personnel showed just the opposite. The longer the tenure of an individual in a civilian organization, the less likely they are to leave. While it is presumed this dynamic also applies to military settings, the particular function relating turnover and tenure has not been examined to any great extent. While gender has been examined in the civilian literature, this variable is not relevant, for the most part, to officer warfare communities, which are composed primarily of males.

Age

Civilian. Most studies support a well established negative relationship between increased age and turnover (e.g., Bluedorn, 1982; Robinson, 1972; Waters, Roach, & Waters, 1976). A review of turnover studies (Cotton & Tuttle, 1986) identified 27 studies which supported the negative age-turnover relationship. Similarly Porter and Steers (1973) identified nine studies, with young employees having the highest turnover rate. A few studies have been cited which found a positive relation or no relation between the two variables (e.g., Bassett 1967; Downs, 1967; Hellriegel & White 1973; Shott, Albright, & Glennon, 1963). Age has also been found to correlate with other withdrawal behaviors. For example, among a sample of industrial workers, De La Mare and Sergeant (1961) found age to be positively related to absenteeism. Likewise, Cooper and Payne (1965) obtained the same results among a sample of construction workers.

Military. Kissler (1980, p. 6) concluded that age is negatively related to first-term attrition (i.e., the younger the individual, the more likely it is that they will leave the service) (Goodstadt & Glickman, 1975; Guthrie, Lakota, & Matlock, 1978; Hand, Griffeth, & Mobley 1977; Mobley, Hand, & Logan, 1977; Sands, 1978). Vernez and Zellman (1987, p. 22) generally found the same results in the literature; for example, when Allen (1981) held years of service constant, age and career intention were significantly and negatively related for both enlisted personnel and officers. However, Vernez and Zellman (1987) also noted other studies (Lockman, 1977a, b) reporting a curvilinear relationship, such that Navy sailors younger than 18 and older than 19 were more likely to attrite during the first-term than 18- and 19-year olds.

¹ A negative (positive) relationship between turnover and another variable means that higher turnover is associated with a lower (higher) level of the factor under discussion.

Marital Status and Family Size

Civilian. The results of studies looking at the relationship between marital status and turnover have been mixed. Some studies looking at married versus non-married employees have found that individuals who are married are less likely to turnover than those who are not married (Arnold & Feldman, 1982; Federico, Federico, & Lundquist 1976; Mangione, 1973). In contrast, a review by Cotton and Tuttle (1986) of 14 studies found that marital status was unrelated to turnover. In six additional studies, married individuals were found to be less likely to turn over than unmarried individuals. Among a group of clerical workers, Waters, Roach, and Waters (1976) determined that turnover was unrelated to marital status. Porter and Steers (1973) offer an explanation for these apparently mixed results. They point to the covariation of factors such as marital status, gender, and number of dependents. They suggest that these variables require further decomposition to determine the relationship among them.

Similar to the marital status-turnover relationship, the research on family size and withdrawal behaviors has been inconsistent. Many studies have concluded that there is a negative correlation between number of dependents and turnover (Cotton & Tuttle, 1986; Federico, Federico, & Lundquist 1976; Marsh & Mannari, 1977). Knowles (1964) found this to be the case among a group of male factory workers, but studies conducted by Naylor and Vincent (1959) and Stone and Athlestan (1969) discovered that absenteeism and turnover, respectively, were positively associated with increases in number of dependents among female workers. As stated earlier, the possibility of gender moderating the family size-turnover relationship needs further investigation.

Military. Boesel and Johnson (1984, p. 59) reported mixed results on marital status and family size. Most studies seemed to confirm that married individuals (as compared to single individuals) and married individuals with children (as compared to no children) seem more prone to attrite (Lockman, 1977; Sands, 1977, 1978; Guthrie, Lakota, & Matlock, 1978; Mobley, Hand, Baker, & Meglino, 1978; Landau & Farkas, 1978) (i.e., results contradict six of the civilian studies). Even in the military literature, there are too many exceptions to draw firm conclusions. For example, Boesel *et al.* (1984) indicated that Buddin (1981) found just the opposite relationship and Greenberg, Murphy, and McConeghy (1977) found insignificant relationships for Marines.

Stolzenberg and Winkler (1983, p. 57) reviewed many of the same studies and felt more comfortable generalizing from the results ("we think the preponderance of evidence is that marriage and children tend to increase the probability of voluntary termination from military service").

Vernex and Zellman (1987, p. 25) disagreed (i.e., they believed that inconsistent results are obtained when researchers examine the relationship between marital status and first-term reenlistment. Regarding the presence of children, Vernex and Zellman believed this variable is uniformly related to an increased likelihood of individuals leaving before the end of their first-term (Sinaiko, Chatelier, Cook, Hosek, & Sicilia, 1981; Buddin, 1981; Oganessoff, 1982).

Our position on the military literature is there are too many studies that do not confirm the relationship between marital status and career continuance to reach a clear conclusion. Further, it is speculated that other variables interact with marital status (e.g., occupational specialty, marital

satisfaction, length of service, etc.) in ways that make general conclusions unrealistic. Similarly, based on research results, no firm conclusions can be drawn with respect to family size.

Race

Civilian. The relationship between race and organizational withdrawal has received little research attention, although one study provides some insight into the relationship between these two variables. Among a sample of blue collar workers, Wanous, Stumpf, and Bedrosian (1979) found no relationship between race and turnover, regardless of whether it was voluntary or involuntary.

Military. Results on race (done primarily with enlisted personnel) are mixed. For example, Boesel and Johnson (1984, p. 30) discovered studies reporting that non-whites extend their first-term or reenlist more often than whites (Chow & Plich, 1980; Fletcher & Giesler, 1981). However, another study (Goldberg & Warner, 1982) found the opposite result, and still another study (Hiller, 1982) found no relationship with race for second-term reenlistments.

After reviewing the literature, Stolzenberg and Winkler (1983) concluded (pp. 56-57):

Studies of race effects do not reveal unambiguously if race is merely correlated with factors which have true effects on termination from service (e.g., high school completion, AFQT or . . . ASVAB scores) or if there is something about Blacks' military experiences, or their attitudes toward these experiences, that makes them more or less willing than otherwise comparable whites to continue their military service.

Education

Civilian. In most studies reviewed, educational level was positively related to turnover (Cotton & Tuttle, 1986) (i.e., the more education an individual had acquired, the greater the probability of their leaving an organization). In contrast, several studies have reported that there is no relationship between these two variables among samples of clerical workers, bus drivers, certified public accountants, and production workers (Brown & Ghiselli, 1947; Hellriegel & White, 1973; Mangione, 1973; Mowday, Porter, & Stone, 1978; Parasuraman, 1982). Using a sample of female clerical workers, Kirchner and Dunnette (1957) found the relationship between education and turnover to be curvilinear. In a review of the literature, Mobley, Griffeth, Hand, and Meglino (1979) determined that there is weak support for a positive relationship between education and turnover. They state that the variance in educational level, in the studies reviewed, was so small that it made accurate analysis of this relationship impossible. They suggest the use of conceptual models and multivariate analyses as a way of investigating the education-turnover linkage.

Military. Stolzenberg and Winkler (1983, p. 58) stated for enlisted personnel that "the evidence seems heavily in favor of a conclusion that years of schooling and the probability of attrition are inversely related." That is, their conclusion was opposite from the conclusion of many civilian studies. Boesel and Johnson (1984, p. 57), Kissler (1980, p. 6), and Hand *et al.* (1977, p. 93) reached a similar conclusion, based on the same studies that Stolzenberg and Winkler (1983) reviewed on aptitude, as did Hand *et al.* (1977) who reviewed Lockman (1976), Plag, Goffman, and Phelan (1970), Guinn (1977), and Mathews (1977). Interestingly, Vernez and Zellman (1987,

p. 21) discovered a study for officers (Lund, 1978) that contrasted with enlisted results (i.e., only 10% of junior Army officers with a college degree planned to remain in the service, compared with 55% of those without a college degree). We tend to discount these results for two reasons: (1) the number of officers without a college degree is quite small and (2) those without a college degree would not have much of a future in the Army and thus be encouraged to leave.

Tenure

Civilian. Tenure has been found to be consistently and negatively related to turnover (Cotton & Tuttle, 1986; Federico, Federico, & Lundquist, 1976; Fleishman & Berniger, 1960; Knowles, 1964; Mangione, 1973; Mobley, Horner, & Hollingsworth, 1978; Robinson, 1972; Schott, Albright, & Glennon, 1963; Taylor & Weiss, 1972; Waters, Roach, & Waters, 1976; Werbel & Gould, 1984). Only one study reviewed found tenure and turnover to be unrelated (Michaels & Spector, 1982). The relationship between tenure and other withdrawal behaviors, such as absenteeism, appears to be less clear cut. Hill and Trist (1955) found tenure to be unrelated to absenteeism among a sample of factory workers, and negatively related among a sample of male blue-collar workers. Baumgartel and Sobol (1959) found a positive relationship between these two variables for a sample of female blue-collar, and male and female white-collar workers. In summary, it appears that tenure is a fairly reliable predictor of turnover, but less so for other withdrawal behaviors, such as absenteeism. The possibility that tenure moderates the absenteeism-turnover relationship has also been investigated. Ferris and Rowland (1987) found that low-tenured individuals who were absent frequently were less likely to leave the organization, but high-tenured individuals who were absent frequently were more likely to leave.

Military. No studies were found examining the relationship between tenure and turnover.

Personal Characteristics

Measures of personality traits, as well as interest inventories, have been shown to be promising predictors of turnover in both the civilian and military realms. The civilian literature is extensive regarding personality traits, while the military literature is more limited. While a variety of personality predictors have been shown to correlate with turnover in the civilian realm, significant results tend to vary by occupational group. Regarding interest inventories, it was found, as expected, that turnover tends to be less if a person's job is congruent with their interests. Interest inventories have been used as selection tools in some cases and simply as measurement tools for people already placed in jobs in other instances. Contradictory results have been found in both the civilian and military spheres regarding the predictive value of aptitude and intelligence.

Personality

Civilian. Personality traits and needs of individuals, including need for achievement, coping abilities, and locus of control have all received considerable attention in the turnover literature (Bernardin, 1977; Cotton & Tuttle, 1986; Schuh, 1967b). Hines (1973) investigated differences in

need for achievement (nAch) between entrepreneurs and non-entrepreneurs. Results showed that entrepreneurs had higher nAch scores and lower turnover rates than other occupational groups. Also, individuals in the non-entrepreneur group who were high in nAch had a higher turnover rate than their non-entrepreneur peers. Several studies lend support to the positive relationship between need for achievement and turnover (Farris, 1971). Meyer and Cuomo (1962) investigated not only need for achievement, but several other personality characteristics. They found that individuals who left the organization tended to be high in need for achievement, aggression, independence, self-confidence, and sociability. Individuals who stayed with the organization were higher in emotional stability, maturity, and sincerity. They had stronger job identification and were moderate in need for achievement. Other personality traits that have demonstrated a positive relationship with turnover are manifest anxiety, authoritarianism, and neuroticism (Cleland & Peck, 1959; Hakkinen & Toivainen, 1960; MacKinney & Wolins, 1960). Manifest anxiety has also shown a strong, positive relationship with absenteeism (Sinha, 1963). However, the positive relationship between anxiety and turnover has not been supported across all samples (Parasuraman, 1982).

Bernardin (1977) investigated the relationship between personality traits and withdrawal behaviors using Cattell's 16 Personality Factor (16 PF) Questionnaire. The results indicated that conscientiousness and anxiety were the strongest predictors of both absenteeism and turnover. Individuals who terminated tend to score low in conscientiousness, and high on anxiety. Barton and Cattell (1972) also investigated the personality trait-turnover relationship using the 16 PF. It was found that among a group of graduating seniors, those individuals who terminated employment 5 years later scored higher on imagination, self-assurance, and frustration, and scored lower on self-discipline, than individuals who stayed on the job. A group of female flight attendants completed the 16 PF. Among this sample, extraversion, anxiety, criteria (tough mindedness), and independence were uncorrelated with turnover.

Using the Personality Research Form, Mowday, Porter and Stone (1978) found that among a group of clerical workers, those who scored high on autonomy and low on need for harm avoidance were more likely to turn over. Spector and Michaels (1986) found that there is a strong positive relationship between external locus of control and intention to quit. Individuals with an external locus of control (LOC) were more likely to intend to quit than individuals scoring low on this dimension. Blau (1987) also looked at LOC and its relationship to turnover. This study revealed that LOC moderates the relationships between pay and promotional satisfaction to both withdrawal cognitions and turnover. Locus of control also moderated the relationship between withdrawal cognitions and turnover. There were stronger negative relationships for internals than externals between satisfaction items and withdrawal cognitions and turnover, as well as a stronger positive relationship for internals than externals between withdrawal cognitions and turnover.

In summary, it appears that many personality variables are fairly good predictors of turnover, although the literature indicates that certain traits are better predictors depending on the occupational group in which they are applied.

Military. Ramsey (1974), La Rocca *et al.* (1977) and Rakoff *et al.* (1987) all identified research illustrating the possible role of a person's values in turnover decisions and behavior. Ramsey (1974, p. 8), for example, summarized Gordon and Medland (1964) who found that officers who desired to remain in the service tended to score higher on conformity and benevolence and lower on independence. Enlisted men scored higher on benevolence and lower on independence and

support. La Rocca *et al.* (1977) cited Bachman (1974) and Stoloff (1971), while Rakoff *et al.* (1987, p. 11) pointed out a study (Faris, 1984) indicating that belief in the importance of the military mission is related to reenlistment decisions. In general, not much research has been done that examines values and their relationship to career motivation and action. Based on the research that has been done, however, values seem promising as predictors.

Like values, not much not much research has been conducted on personality traits, but preliminary results are encouraging. According to Ramsey (1974, p. 8), a study by Kotual and Anderson (1963) represents one of the best examples of the potential value of personality research. These individuals found that a composite personality measure (of characteristics necessary for adjustment to the military) was significantly related, both statistically and practically, to reenlistment intention after 1 year in the service. Vernez and Zellman (1987, p. 23) indicated that a personality characteristic, locus of control (Rotter, 1966), has been examined in relation to attrition (Szoc, 1982). It was found that *internal* locus of control (the person views himself as controlling his own behavior rather than being controlled by chance or external circumstances) is related to first-term attrition.

Stolzenberg and Winkler (1983) viewed mental health and adjustment as key personality variables in the prediction of attrition behavior because of the results of studies such as Wilcove, Thomas, and Blankenship (1979); Hoiberg, Hysham, and Berry (1977); Erwin and Herring (1977); Frank and Erwin (1978); Atwater, Skrobiszewski, and Alf (1976); Greenberg, Murphy, and McConeghy (1977); Cooper (1979); Yellen (1975); and Lau (1979). Many of these studies focused on the proclivity of the individual to engage in antisocial or illegal behavior, or are maladjusted, and found they are more likely to leave the service, either voluntarily or involuntarily.

Aptitudes and Intelligence

Civilian. Numerous aptitudes and abilities have been investigated in order to determine their relationship with organizational withdrawal (e.g., Rosse (1987)). Summaries of these studies have pointed to results similar to those of intelligence measures. Measures of clerical aptitude used to predict clerical worker attrition have indicated no relationship between these two variables (Kriedt & Gadel, 1953; MacKinney & Wolins, 1959). Using the same sample, MacKinney and Wolins (1959) did find a negative relationship between the King Factored Aptitude Test and clerical worker turnover. The use of arithmetic and language tests to predict cashier turnover produced a curvilinear relationship (Viteles, 1924), as did a Ortho-rater test to predict turnover among male lens inspectors (Kephart, 1948). Shott *et al.* (1963) found a negative relationship between card punch aptitude and officer worker attrition, as did Kelleher *et al.* (1968) when the predictability of a mixed test battery in determining nursing aide turnover was investigated. Hines (1973) administered the Lynn Achievement Motivation test to 315 accountants, engineers, and managers and the results indicated a positive relationship between this measure and turnover. In a study conducted by Ekpo-Ufot (1976), there was a negative relationship between measures of self-perceived ability among automobile assemblers and turnover in this group. Jackofsky and Peters (1983b) present a process model involving task-relevant ability and its relation to turnover. They suggest that ability is related to turnover through individuals' perceptions of ease of movement and desirability of movement.

The results of studies investigating the relationship between intelligence and turnover appear somewhat mixed. Various studies have been conducted, utilizing various intelligence measures and diverse samples, but no clear cut pattern seems to emerge. In a review by Muchinsky and Tuttle (1979), studies claiming that there is no relationship, a negative relationship, a positive relationship, and a curvilinear relationship were all identified (Brown & Ghiselli, 1947; Kriedt & Gadel, 1953; Mackinney & Wolins, 1959; Robbins & King, 1961; Scholl & Bellows, 1952; Schuh, 1967a); Shott, Albright, & Glennon, 1963; Snow, 1927).

Military. Reviewers of the enlisted literature have drawn various, often conflicting, conclusions. La Rocco *et al.* (1977) and Stolzenberg and Winkler (1983) in their reviews concluded that studies showed that the higher the aptitude of enlisted personnel, the less likely they were to leave the Navy--during either the first-term or later. Aptitude was typically measured by the Armed Services Vocational Aptitude Battery (ASVAB) or the Armed Forces Qualifications Test (AFQT). On the other hand, Boesel and Johnson (1984) described studies with a variety of results (i.e., no relation, positive relation, or negative relation).

The aptitude studies reviewed by each of the authors were as follows. La Rocco *et al.* (1977, p. 25) cited Quigley and Wilburn (1969) and Singer and Morton (1964), while Stolzenberg and Winkler (1983, p. 59) discussed Mobley *et al.* (1978), Lockman (1977a,b), Sands (1977, 1978), Guthrie, Lakota, and Matlock (1978), Buddin (1981), Fletcher and Giesler (1981), and Landau and Farkas (1978). Boesel and Johnson (1984, p. 28) described Goldberg and Warner (1982) and Chow and Polich (1980), both of which suggested that higher aptitude scores are associated with lower likelihood that personnel will reenlist when their first enlistment has been completed. Boesel and Johnson (1984) also mentioned Fletcher and Giesler (1981), which reported zero, negative, and positive relationships for first-term reenlistment, depending on occupational category. The picture, according to Boesel and Johnson (1984), is equally muddled after the first-term (Hiller, 1982; Fletcher & Giesler, 1981; Golderberg & Warner, 1982).

Regarding officers, Ramsey (1974) reviewed a study by Githens, Neumann, and Abrahams (1966), which found no relation between "service tenure" of Naval Reserve Officer Training Corps (NROTC) officers and scores on the Naval College Aptitude Test. The same result was found by Githens, Abrahams, and Neumann (1968) when using the Officer Classification Battery.

Interest Inventories

Civilian. Numerous studies using interest inventories to predict subsequent turnover of employees have been conducted. The most frequently used of these is the Strong Vocational Interest Blank. Studies using this measure have found it to be useful in predicting attrition among life insurance salesmen, male production foremen, and engineers (Boyd, 1961; Ferguson, 1958; Mackinney & Wolins, 1960). However, Stone and Athelstan (1969) found no relationship between answers given on this inventory and the turnover of both occupational therapists and physical therapists. The Kuder Preference Record has proved helpful in predicting turnover among metal parts applicants and junior foresters (Mayeske, 1964; Tiffin & Phelan, 1953). In each of these studies, turnover was inversely related to preference ratings for activities that were congruent with the individuals' current jobs.

Military. Research suggests that interest measurement may be a fruitful area for investigation. For example, Ramsey (1974, p. 6) draws our attention to studies done at the Navy Personnel Research and Development Center. He mentioned that the Strong Vocational Interest Blank has been validated against officer "tenure," NROTC disenrollment, and Naval Academy disenrollment (Neumann & Abrahams, 1972; Abrahams & Neumann, 1971; Abrahams & Neumann, 1973). The Navy Vocational Interest Inventory has also been shown to predict reenlistment of enlisted personnel when they had been properly placed in a vocational area based on test results (Lau, Lacey, & Abrahams, 1969).

Job/Career Characteristics

The most consistent relationship emerging from both the civilian and military literatures is that the probability of turnover is inversely associated with job challenge (autonomy and responsibility): The greater the challenge, the less turnover in an organization. The rest of the civilian literature also tends to support expected relationships for work unit size, task repetition, and autonomy and challenge; in short, the larger the work unit, the more task repetitiveness, and the lower the degree of challenge and autonomy, the higher the turnover rate. In the civilian realm, higher turnover tends to be associated with unclear role definitions. In the military realm, early studies are split in their conclusions regarding the contribution of job factors to turnover, while later studies emphasize their importance, especially the constructive contribution of challenge and autonomy.

Civilian

Work Unit Size. Studies indicated that there is a positive relationship between work unit size and turnover for blue collar workers. This relationship has not been demonstrated utilizing white collar workers. Indik and Seashore (1961); Kerr, Koppelman, and Sullivan (1951); Mandell (1956); and Oldham (1987) all found a significant, positive relationship between work unit size and turnover. Porter and Steers (1973) suggested that this is due to the fact that increases in work group size lead to lower group cohesion, higher task specialization, and poorer communications. A study by Argyle, Gardner, and Cioffi (1958) did not support the positive relationship between these two variables. The impact of work unit size on absenteeism has also been investigated. Again, the positive relationship between these two variables has been documented among blue collar workers only (Acton Society Trust, 1953; Baumgartel & Sobol, 1959; Hewitt & Parfitt, 1953; Indik & Seashore, 1961; Kerr, Koppelman, & Sullivan, 1951; Metzner & Mann, 1953; Revans, 1958). One study found a curvilinear relationship between work unit size and absenteeism, with lower absence rates found among middle-sized groups (Argyle *et al.*, 1958). A sample of white collar workers was utilized in only one study reviewed, and no relationship between unit size and absenteeism was found (Metzner & Mann, 1953). Porter and Steers (1973) discuss the lack of conclusive results supporting the relationship between work unit size and withdrawal among white collar workers. They state that increases in unit size may produce dissatisfaction with the availability of intrinsic rewards. Dissatisfaction might then lead to withdrawal. White collar

workers, unlike blue collar individuals, have more autonomy on the job so they are better able to search for and discover alternative ways of obtaining intrinsic rewards.

Task Repetitiveness. Task repetitiveness has demonstrated a positive relationship with turnover among samples of nurses and assembly line, factory, and retail store workers (Bartel, 1982; Guest, 1955; Lefkowitz & Katz, 1969; Marsh & Manari, 1977; Price & Mueller, 1981; Taylor & Weiss, 1969a, 1969b; Wild, 1970). Only one study reviewed showed no relationship between these two variables (Kilbridge, 1961). However, this study did reveal a positive relationship between repetitiveness and absenteeism. Kilbridge (1961) suggests that maybe the withdrawal process is too complex for task repetitiveness to play a major role in its explanation. Instead, the results of Kilbridge's study indicate that task repetitiveness may be instrumental in predicting milder forms of withdrawal, like absenteeism. It appears there is a relationship between task repetitiveness and withdrawal, but too few studies have been conducted to consider these results conclusive.

Role Clarity. Three separate studies have indicated that there is a negative relationship between role clarity and turnover (Lyons, 1968; Lyons, 1971; Telly, French, & Scott, 1971). Lyons (1972) found that among a group of nurses this relationship held only for those individuals who were high in need for clarity. For those low in need for clarity, role clarity was unrelated to turnover. Although all of the studies reviewed point to a negative association between clarity and turnover, the number of studies conducted is rather small, which makes it difficult to reach reliable conclusions.

Job Autonomy and Responsibility. The relationship between autonomy and turnover appears to be consistently negative. Studies have shown that individuals who feel they have control over their work are less likely to turn over (Guest, 1955; Walker & Guest, 1952). This has also been demonstrated by Ross and Zander (1957), using a sample of female skilled workers. Results showed that individuals who left the organization indicated that their autonomy needs had not been met. Leavers indicated this lack of met expectations more often than individuals who stayed. Two studies of clerical workers found that those individuals who perceived greater responsibility and autonomy were more likely to stay (Waters & Roach, 1971; Waters & Roach, 1973). This same relationship has been demonstrated among retail store employees (Taylor & Weiss, 1972). The relationship between autonomy and absenteeism has also been investigated. Turner and Lawrence (1965) found a strong, positive relationship between job responsibility and job attendance. Results obtained by Hackman and Lawler (1971) offer additional support for the relationship between job autonomy and absenteeism.

Using items drawn from the Job Diagnostic Survey, Oldham (1986) found that individuals who felt disadvantaged in terms of job complexity had poorer performance and higher absenteeism and turnover than individuals who felt equitable or advantaged on this dimension.

Job Type. Thompson and Terpening (1983) discovered that job type modifies the relationship between various factors involved in the intention-to-leave process. This study made a distinction between primary and secondary job types. Primary job types are characterized by high individual growth and advancement potential, high skill levels, and greater expectations of job autonomy and responsibility. Secondary job types are characterized by just the opposite. In these jobs there is low potential for individual growth and advancement, poor wage rates, low skill levels, and low

expectations of autonomy and responsibility. The findings provided support for the importance of job satisfaction and community participation in the intent to leave-turnover relationship for individuals in both primary and secondary job types. However, external career opportunities were more important for individuals in the primary group than for the secondary group when determining intent-to-leave. The groups also differed when rating the importance of various job content factors. The results of this study suggest that knowing the type of job an individual holds can provide information as to which factors are important to individuals in determining their intent to leave.

Military

Reviewers have come to a variety of conclusions regarding the importance of job factors in the prediction of turnover variables. There tends to be a pattern in which those reviewing early studies are split in their opinion of the importance of such predictors and those reviewing later studies emphasize their importance.

Hand *et al.* (1977) concluded that "the military literature has shown that minimal evidence exists that job content is strongly related to withdrawal behavior (and intentions)" (p. 57). This conclusion was based on the size of the strength-of-association statistics reported in the studies. Hand *et al.* had reviewed Mobley *et al.* (1977); Stoloff (1971); Haber, Ireland, and Solomon (1974); and Lindsay and Cousey (1969) as studies that found a significant relationship between job content and turnover (intentions or behavior). In contrast, Hand *et al.* (1977) listed Grace, Holter, and Soderquist (1976); Mobley *et al.* (1977); and Nelson and Berry (1968) as studies in which relationships were insignificant for job content variables. In addition, they described Carlisle (1975) who found that intention to reenlist for Marines was related to intrinsic job conditions, such as the work itself, sense of accomplishment, and recognition, but not to extrinsic conditions such as working conditions, supervisors, and peers.

In another early review, Ramsey (1974) concluded that "research findings have not illustrated a clear cut relationship between job factors and retention" (p. 19). He drew this conclusion from Cantrell, Bryce, and Lewis (1967) and Nealy (1972). In the Cantrell study, only one of several job factors (quality of supervision) predicted a turnover criterion. Nealy found that the value of job factors as predictors varied as a function of ship type and speculated that particular characteristics of ships (group cohesiveness, ship's mission, etc.) might interact with job factors.

In a third early review, La Rocco *et al.* (1977) presented a variety of studies implicating job factors as important correlates of reenlistment variables. These studies implicated factors such as satisfaction with peers, supervisors, work group cohesiveness, lower level influence, group process, leadership consideration, and nature of work. The studies they presented were Bowers (1973, 1975); Bruni, Jones, and James (1975); Cantrell *et al.* (1967); Drexler and Bowers (1973); Stehle & Grace (1971); Stoloff, Lockman, Allbritton, and McKinley (1972); and Wilcove (1973).

In a fourth early review, Sterling and Allen (1983, p. 2) noted that job characteristics were shown to be related to organizational commitment, which in turn was related to career intentions (Steers, 1977; Koch & Steers, 1978; Farrell & Rusbult, 1981). They also focused on the Bonette and Norstine Study (1979), where job content was identified as the most important issue for first-termers when considering the continuance decision.

In a fifth early review, Vernez and Zellman (1987, p. 58) reanalyzed data from the 1979 DoD Survey of Personnel and found that job-related reasons (e.g., unable to practice job skills, boredom with job, decline in personnel quality) were rated either first or second in importance if they had seriously considered leaving the service. This result held for both officers and enlisted personnel across the four services.

Reviewers concentrating on later studies were consistently impressed by the importance of job factors, especially job challenge and utilization of skills. For example, Bruce and Burch (1988) called attention to Martinsen and Hansen (1988) who discovered that utilization of talents and meaningful flying were important considerations for aviators. Bruce and Burch also keynoted Hayden (1985) who reported that challenging work and work schedules are important considerations for Army enlisted personnel regarding the continuance decision. Bruce and Burch themselves confirmed among naval pilots that job challenge was a better predictor of turnover behavior than were organizational commitment or career satisfaction.

Wood (1988, p.23), in his summary of the literature, referred to Dalton (1988) who characterized Air Force pilots who were intending on staying in the service as most motivated by job challenge and a feeling of accomplishment. All pilots were demotivated by nonflying duties and erratic and overly lengthy work schedules.

Wood also quoted Admiral Cressey (1988, pp. 20-21), who was Director of Aviation Manpower and Training, as pinpointing forced reductions in flying hours as a major culprit in the exodus of naval aviators to the civilian airlines.

In terms of the upcoming NAVPERSRANDCEN study, the authors believe that job factors may indeed be a very important set of variables that need to be examined longitudinally as causative factors of continuance among naval aviators.

Social Environmental Factors--at Work

Generally speaking, the civilian literature corroborates a relationship between turnover and both supervisory style and satisfaction with co-workers, although the form of the relationship (linear or curvilinear) has not been conclusively determined. Concerning supervisory style, a considerate style has been shown to be related to lower turnover than are task-oriented and authoritarian styles. Various elements of supervisor-subordinate relationships have been examined (communication, feedback, opportunity to voice dissatisfaction, etc.) with expected results; for example, lower turnover is related to quality and consistency of communication and feedback and the opportunity to voice dissatisfactions. The military research has not focused on these types of variables, except as part of omnibus studies, making it difficult to draw conclusions.

Civilian

Supervisory Style. A review of the research on supervisory style by Muchinsky and Tuttle (1979) indicates that turnover in organizations is positively related to task-oriented and

authoritarian leader styles and negatively related to leaders' consideration and human-relations ability (Ley, 1966; Lundquist, 1958; Ronan, Latham, & Kinne, 1973; Saleh *et al.*, 1965; Sheridan, & Vredenburg, 1978). A study conducted by Fleishman and Harris (1962) supported these findings, showing that individuals who rated their superiors low in consideration were more likely to turn over. The relationship was determined to be curvilinear, though. Consideration seemed to be important up to a critical level, but beyond that point consideration had no impact on turnover. A study of factory workers by Skinner (1969) provided additional support for a curvilinear relationship between these two variables.

Aside from studies looking at leadership style, many studies have looked more specifically at the leader-member exchange. Telly *et al.* (1971) found that among a group of hourly production workers, turnover was highest among individuals who rated the inequity with which they were treated by superiors as greater. Several studies have also pointed to the importance of performance feedback and communication concerning job goals. Ross and Zander (1957) found that individuals who left an organization, unlike those who remained, were more likely to say that their recognition and feedback needs were not being met. Additional support for these findings was obtained on a sample of engineers at General Electric Company (General Electric Company, 1964a). Comparisons were made between engineers who stayed with the organization and those who left. It was found that engineers who left indicated greater dissatisfaction with amount of performance feedback received from supervisor, and more disagreements with supervisor over job goals.

Walsh, Ashford, and Hill (1985) looked specifically at obstruction of feedback sources and the impact on turnover intent. This study revealed that there is a significant relationship between feedback obstruction and turnover intentions, and that this effect is greatest for self- and supervisory-feedback obstruction. Similar findings were obtained by Ferris (1985) and Graen (1976). In both these studies, there was a strong negative relationship between quality of supervisor-subordinate interactions and turnover. However, an attempt by Vecchio (1985) to replicate the findings of Graen (1976) revealed no significant relationships between leader-member exchanges and turnover. Spencer (1986) found a strong positive association between employee opportunity to voice dissatisfaction and retention among a sample of nurses. A study by Bassett (1967) investigated the impact of managerial experience on turnover. Results showed that turnover was greatest among those individuals whose managers had less than 5 years of managerial experience.

Co-worker Relationships. Peer group interactions and the influence of these interactions on turnover has been investigated. Gidron (1984) found that among samples of stayers and leavers drawn from community center volunteers, knowing an individual's relationship with the other volunteers was a significant variable in discriminating these two groups. Evan (1963) found that turnover was lowest among management trainees who were assigned to departments of two or more individuals instead of to departments by themselves or with one other person. Looking at scientists and engineers, Farris (1971) found negative relationships between employees' perceived inclusion in the organization and turnover, as well as between turnover and perceived group cohesiveness. Based on this research, it appears that social support and social interaction with co-workers are important variables in understanding the turnover process.

Job Stress. Bhagat, McQuaid, Lindholm, and Segovis (1985) found that measures of job stress could be used to predict various organizational outcomes and withdrawal behaviors. This study

makes a distinction between positive job stress (e.g., a promotion) and negative job stress (e.g., work overload). The findings indicate that negative job stress is a stronger predictor of various organizational outcomes, including satisfaction with work, organizational commitment, job alienation, turnover intentions, and absenteeism than is positive job stress.

Military

It was impossible to cull out this category from results that were given for Job Characteristics.

Social Environmental Factors--Nonwork (Family)

This group of factors was shown in both the civilian and military literatures to be related to turnover. The civilian literature is limited, however, and has done only preliminary work regarding family life variables and personal life stress. In contrast, military personnel research has been fairly extensive and has focused on spousal support, family life, personal freedom, and separation from family. Spousal support and personal freedom variables have yielded the highest correlations (i.e., low turnover is related to spousal support and the belief that the service member's and the family's personal freedom are not materially curtailed by military service). The conclusions of military personnel researchers vary markedly regarding the impact of family separation on turnover, with some researchers viewing this variable as relatively unimportant and other researchers viewing it as a key variable for understanding turnover.

Civilian

Family Life. Among samples of male and female ex-members of the Royal Canadian Mounted Police, some of the main reasons for resignation included the effects of the job on personal and family life, and difficulty in arranging shifts compatible with those of a spouse (Linden, 1985). Thus far, few studies exist which examine the relation between nonwork factors and turnover. However, more recent models of the turnover process have emphasized the inclusion of these variables when conducting future tests of the models (Mobley, et. al, 1979; Steers & Mowday, 1982).

Personal Life Stress. Bhagat, McQuaid, Lindholm, and Segovis (1985) found that measures of personal life stress could be used to predict various organizational outcomes and withdrawal behaviors. Again, Bhagat, *et al.* (1985) made a distinction between positive personal life stress (e.g., disruptive pleasure for the individual), and negative personal life stress (e.g., events producing excessive constraints or demands on the individual). The results showed that negative personal life stress was associated with work dissatisfaction, a lack of organizational commitment, job strains, job alienation, and absenteeism. Positive personal life stress was associated with an intention to remain in the organization.

Military

Family Separation. Conclusions of reviewers regarding family separation varied from viewing this factor as critical in the turnover decision, to not as important as previously thought, to not being an important factor at all. For example, Ramsey (1974, p. 18) stated: "One of the more significant problems of military life involves family separation due to overseas deployment of personnel." Ramsey, in reaching this conclusion, had reviewed May (1963) who found that separation from the family was given by Navy enlisted personnel as second only to pay as a cause of turnover. He also reviewed Muldrow (1970) who reported that family separation was one of the top four factors cited by enlisted personnel for not making the Navy a career.

Vernez and Zellman (1987, p. 33) examined a study by Szoc (1982) whose findings also strongly suggested that separation from family was a key factor in turnover. For example, he found that 17 percent of enlisted personnel separated when they felt they were gone on deployments "hardly any," and 30 percent when they felt they were gone "around 75 percent of the time." When queried, enlisted personnel ranked family separation second in importance when considering the stay-or-leave decision; officers, first. Whether enlisted or officer, spouse's opinion was the most important consideration in the separation decision and family separation was one of the main factors correlated with spouse opinion. Interestingly, the perception of time away from family, and not actual time, was the key variable. In fact, stayers had been away on deployments slightly more time than had leavers.

Boesel and Johnson (1984, pp. 20-25) took a middle-of-the-road position (i.e., that family separation and other "location" and "relocation" variables have "some effect" on reenlistment decisions, but not nearly as much as economic factors). They reviewed varied results. For example, evidence for the importance of family separation was marshalled (1) from the Army's (1981) survey results, where "being separated from spouse" ranked third as a contributor to retention decisions, and (2) from an ongoing Navy survey where "dislike family separation" ranked first or second from 1981 to 1984. Boesel and Johnson discounted the Navy's results somewhat because only leavers were surveyed. In addition, they stated that multivariate studies (e.g., Hiller, 1982) report a weaker relationship between family separation and reenlistment than is typical in univariate studies. Finally, Boesel and Johnson advanced the conclusion of Chow and Polich (1980) as the most extreme:

It appears that ... working in a rotation-imbalanced specialty, family separations, (and) stationing outside the United States ... have very little detrimental effect on reenlistment rates.

Bruce (1986) analyzed surveys from over 3,000 pilots and also concluded that family separation had been accorded too much emphasis in attempts to explain pilot turnover. He contended that spousal support, the challenge of the assignment, and satisfaction with billet were much more critical than family separation. While family separation was related to spousal support, it was only one of several correlates that focused on family issues (e.g., health care benefits, commissary services, job locator assistance, etc.). In addition, Bruce argued that "retention leadership" (the effective influence of the squadron commanding officer (CO) on continuance decisions) is often lacking in squadrons.

Our position in the present report is that the final chapter has not been written on family separation as a possible cause of turnover, and thus it is imperative that this variable be included in any conceptual model and tested empirically.

Spousal Support. In addition to family separation, the literature also addresses other social-environmental issues. For example, all the reviewers conclude that spousal support is consistently found in the literature as an important correlate or cause of the continuance decision. Specifically, Striffler (p. 31) referred to Grace, Steiner, and Holoter (1976) and Mohr, Holzbach, and Morrison (1981) as studies showing that the wife's support or lack of support for her husband's career is a strong correlate of his final continuance decision.

Rakoff *et al.* (1987, p. 8) concluded that ... "numerous studies find spouse support and orientations toward military service to be important factors affecting military personnel" (Bowen, 1985; Orthner & Bowen, 1982; Orthner & Pittman, 1984; Szoc, 1982; Stoloff, Lockman, Allbritton, & McKinley, 1972; Lund, 1978; Grace & Steiner, 1978; Hunter, 1982). Rakoff *et al.* (1987) saw two limitations in many of these studies, however: (1) the focus in these studies was on statistical significance and not strength of association, and (2) intention to remain in the military, rather than actual behavior, served as the dependent variable in the vast majority of cases.

Bruce (1986) found that the Navy pilot's perception of spousal support had both a direct and indirect effect (the latter through career intention) on actual reenlistment behavior. His focus on actual behavior thus rectified one of the criticisms of Rakoff *et al.* (1987) and added increased weight to the importance of the spousal-support variable.

Family Life. The research consistently implicated family life experiences in the military as an important set of variables in the continuance decision. For example, Vernez and Zellman (1987) cited Farkas and Durning (1982), Jones and Bulter (1980), Grace *et al.* (1976), and Szoc (1982) as studies indicating that family pressures resulting from military life are correlated with the wife's attitude toward her husband's career and her support for it.

Striffler (1982, p. 27) highlighted the results of Derr (1980), which found that family issues were given by naval junior officers as the primary reasons for their resigning their commissions. In other studies reviewed by Striffler (1982), McCubbin, Dahl, and Hunter (1976) evaluated family-related research in the military from 1940 to 1975 and, in one of their major conclusions, stated that "the two social institutions, the military and the family, compete for the same resource, the serviceman." Further, Derr (1979) noted that ... "many junior officers (in the Navy) found their seniors unsympathetic ... to family oriented values." Estabrooks (1981), according to Striffler, found that family values had replaced work values among naval officers.

Personal Freedom. This social-environmental factor has not been investigated very often in the literature. In those instances where it has been, however, it has been shown to be a powerful explanatory variable. For example, Bowers and Bachman (1974) found it to be the most important variable in an enlisted man's satisfaction with the Navy and a key variable in their reenlistment decisions. In addition, Wilcove (1973) found correlations of .61 and .42, respectively, between the item "the Navy interferes with my personal life" and satisfaction with the Navy and career motivation (N = 630). Rakoff *et al.* (1987, p. 12), in presenting the results of the 1985 DoD Survey,

mentioned that personal freedom was among the top two sources of dissatisfaction for enlisted personnel who had been in the Navy for 1 to 6 years.

Organizational Characteristics and Practices

Civilian research in this area has been limited, although military personnel research is quite extensive. Civilian research has primarily concentrated on job previews, and results have generally supported the notion that individuals who have been briefed on both the positive and negative aspects of an organization tend not to attrite. There is reason to believe that some individuals, having received a preview, select themselves out of becoming a member of an organization. Research done in the military tends to support a negative relationship between organizational characteristics and turnover (the more favorable the perceptions of the service members, the lower the turnover rate). A variety of factors have been examined (e.g., emphasis on human resources, the assignment process, policies regarding living conditions), and they have been found to apply to both enlisted and officer personnel, the latter of whom include the surface warfare and aviation warfare officers.

Civilian

Organizational Size. Only one study was identified which looked at the size of an organization and its impact on turnover. Ingham (1970) investigated eight British firms of varying sizes. Results showed that the size of the organization was highly correlated with absenteeism, but only weakly correlated with turnover. Ingham (1970) offered an explanation for these findings. He suggested that individuals initially choose to join either a small or large firm based on their own preferences. For example, individuals who join large firms are more interested in the economic environment and less concerned with noneconomic rewards. The exact opposite would be true for individuals who join small firms. Since the needs of both these types of individuals would be met, there should be no difference in turnover based on whether they are in a small or large organization. According to Ingham (1970), the situation is different for absenteeism. Ingham states that absenteeism is a function of the degree of employee identification with the organization. Because large firms are so impersonal and bureaucratic, employees' identification with the company is reduced and absenteeism would increase. There is no empirical evidence to support these statements, but they are possible explanations of the data given by Ingham (1970).

Job Previews. Efforts to provide prospective employees with "on the job experience," or realistic descriptions of various positions has received much research attention. A meta-analysis on job preview experiments, conducted by Premack and Wanous (1985), revealed that providing realistic job previews to individuals lowers initial job expectations and increases self-selection, organizational commitment, job satisfaction, performance, and retention. Colarelli (1984) found that job previews decreased turnover, but had no impact on job outcomes, self-selection, or commitment to choice. Dean and Wanous (1984) found that providing a specific job preview as opposed to a general preview or no preview, lowered initial job expectations but had no influence on initial attitudes toward the organization, job performance, or overall job survival rates. Weitz (1956) mailed half the applicants for the position of life insurance salesman a job preview, which

outlined the responsibilities and duties of the job. The second half of the applicant pool did not receive the booklet. Results showed that those individuals receiving the preview booklet were less likely to turnover. Similar results were obtained by Youngberg (1963), using a sample of insurance salesmen, and by Suszko and Breugh (1986), using a sample of individuals applying for an inventory taker job. Additional support for the effectiveness of job previews has been obtained from studies providing military cadets with booklets and information on military training camp (Ilgen & Seely, 1974; Macedonia, 1969). Turnover was lower among those cadets who received the booklet. A study conducted by Miceli (1985) did not support these findings. The findings indicated that task satisfaction and performance were positively related to job previews, but no significant relationship between turnover and job previews was found. A meta-analysis conducted by McEvoy and Cascio (1985) investigated both job enrichment and realistic job previews as ways of reducing turnover. This analysis revealed that job enrichment was twice as effective as realistic job previews at reducing turnover.

Increased training and the use of job previews among samples of sewing machine operators resulted in decreased turnover from the organization (Farr, O'Leary, & Bartlett, 1973; Lefkowitz, 1970), but the use of a work sample tests given to black and white sewing machine operators produced decreases in turnover for white individuals only. Wanous (1973) administered job preview films to prospective telephone operators. Half the applicants saw the traditional preview film, while the other half saw an experimental film, which identified the positive and negative aspects of the job. Turnover was not actually measured, but a measure of behavioral intent was obtained. It was found that those individuals who saw the experimental film had fewer thoughts of quitting the job than employees watching the traditional film. It is suggested that job previews are helpful because individuals are provided with information concerning what is expected of them. Therefore, if the expectations are not in line with their goals then they can select themselves out of the applicant pool. On the other hand, those individuals who continue to pursue the position will know what their responsibilities are and probably won't experience feelings related to unmet expectations after accepting the position.

Military

As with job characteristics, Hand *et al.* (1977) concluded that there was little evidence relating organizational characteristics to turnover variables (intentions and behavior). This conclusion was forthcoming because of what the authors believe were faulty research designs or a modicum amount of criterion variance accounted for.

The rest of the reviewers uniformly agreed that perceptions of organizational characteristics and practices are important correlates (and, in some cases, causes) of turnover variables. Most, however, were selective in the characteristics they identified, La Rocco *et al.* (1977) being an exception--they identified a number of organizational characteristics and practices from the literature that seemed to be associated with turnover variables, such as the perceived emphasis on human resources, personal autonomy, living conditions, decision making practices, communication flow, time spent in homeport, organizational image, recruiting techniques, career counseling practices, educational and training opportunities, sea-shore rotation practices, and policies regarding length of sea time. La Rocco *et al.*'s (1977) review centered on many of the same studies cited above under job characteristics (e.g., Bowers, 1973, 1975; Drexler & Bowers, 1973; Stoloff *et al.* 1972). It also included Broedling (1970); Holter, Bloomgren, Dow, Provenzano,

Stehle, and Grace (1971); Lockman and O'Neill (1973); Lockman, Stoloff, and Allbritton (1972); Stephan (1971); and Stoloff (1971).

Ramsey (1974) summarized a study by Braunstein (1970) in which naval enlisted personnel rated "opportunity for more training" as the single most important factor in continuing to make the Navy a career. First-termers also selected, as equal in importance, opportunity for travel and off-duty education. Ramsey also noted Deputy (1964) who showed that housing policies were an important factor in the career decisions of military personnel. Deputy (1966) reported that nearly half of the personnel were critical of government bachelor housing. Shipboard living conditions were also criticized in the Deputy study and found by Broedling (1970) to be a detriment to reenlistment. Ramsey viewed Wilcove's (1971) results as a third line of evidence showing that living and housing conditions are important considerations when military personnel evaluate organizational policies.

The last study presented by Ramsey (1974) was Githens (1966), who found that prediction of retention hinges on the discrepancy for naval officers between areas of importance to them and their subjective expectation of satisfaction. He found, for example, that such discrepancies were important when considering the intelligence of the policies promulgated by the organization and the extent to which an officer could succeed on their ability alone (vs. political factors).

Several studies identified officer perceptions of assignment policies and practices as important predictors of turnover behavior in the military. For example, Striffler (1982, p. 25) named Estabrooks (1981); Holzbach, Morrison, and Mohr (1980); Holzbach (1979); Derr (1980); and Arima. The common thread among these studies was that the officer's satisfaction with the assignment process and the attractiveness of the billet received are both correlated with turnover variables. Regarding the assignment process, informal notification of the service's billet decision is the primary component that correlates with retention, while location is the primary issue involved in billet attractiveness.

Other studies have also focused on the assignment process. For example, Arima (1981) reported that officer perceptions of the assignment process are related to their desire to continue in the Navy. Stolzenberg and Winkler (1983, p. 50), however, were unimpressed with the size of the reported relationship. Rakoff *et al.* (1987, p. 9) presented the findings of Szoc (1982) in which "promises of duty assignment" was an important consideration for individuals planning to remain in the service.

Wilcove (1988) analyzed written comments from 500 surface warfare officers and 500 aviation warfare officers regarding the factors influencing their decision to stay in the Navy or leave. The top problem or obstacle, according to aviators, was the assignment process, while surface officers placed this problem second. In the same study, surface personnel identified quality of management as the top problem, and promotional policies, procedures, and opportunities as the third most pressing problem. Behind assignment process, aviators identified (in order) career path, promotion policies, and quality of management as the primary drawbacks when considering their continuance decision.

The rest of the literature on organizational characteristics does not collectively focus on a particular area; instead, each study seems to have its own area of interest. For example, Rakoff *et*

al. (1987) emphasized that the 1985 DoD Survey implicated job training as a powerful influence on continuance decisions (i.e., it was among the top four or five sources of dissatisfaction for individuals who had been in the service for 1 to 3 years, 4 to 6 years, and 7 to 10 years). Bruce (1989) cited the Gregory and Rosenbach (1985) Study, which highlighted the apparent impact that the Air Force's personnel management policies had on individuals. Wood (1988) quoted Admiral Cressey who believed that the manner in which peacetime deployments are handled is a key factor in continuance decisions of naval aviator officers.

Wood also mentioned Dalton (1988) who underscored the dissatisfaction that Air Force leavers have with the promotion system. Golightly (1988) is a fighter pilot and believed, based on his experience, that two factors contribute to the exodus of Navy pilots: (1) the illusion of responsibility, and (2) the illusion of excellence. The first factor concerned his belief that junior pilots expect to be given responsibility commensurate with being a branch or department head upon completing advanced training as pilots. Instead, they find that these responsibilities are given to those above them in the chain, because they, as junior officers, have received little formal managerial or leadership training. Illusion of excellence referred to the junior officer's expectation that he will be required to learn tactics theory, supported in that effort by his superiors, and held accountable for such knowledge operationally. Instead, according to Golightly, they find that administrative demands are the top priority in the Navy.

In summary, despite Hand *et al.* (1977) rejection of the importance of organizational factors, we believe that they are of sufficient merit to include in any attempted explanation of aviation turnover.

Job Performance and Evaluations

The issue raised in the civilian and military literatures is whether good performers are the ones leaving for greener pastures. Many civilian researchers have concluded that no clear-cut answer is available at the present time. They suspect that the inconsistent results found thus far reflect when the data were collected (i.e., before or after individuals have made their turnover decisions). In the military, studies are scarce, although available data suggest that good performers decide to stay rather than leave.

Civilian

The studies looking at performance and turnover came about mainly due to the assumption that all turnover is bad for an organization because the best performers will leave. Investigators challenged this idea by conducting studies that looked at differences in performance level between those who left and those who stayed in the organization (Abelson & Baysinger, 1984; Dalton & Todor, 1982; Jackofsky, 1984). The real issue is whether organizations are losing a large number of good performers as opposed to poor performers (Hollenbeck & Williams, 1986). Numerous studies have investigated the relationship between performance and turnover and the relationships have been inconsistent. Some studies have identified a positive relationship between these variables, with good performers leaving the organization (Martin, Price, & Mueller, 1981). Other

studies have found a negative relationship (Cope, Grossnickle, Covington, & Durham, *et al.* 1987; Jackofsky, & Slocum, 1987; Keller, 1984; Lowery & Jacobsen, 1984; Sheridan, 1985). Jackofsky, Ferris, and Breckenridge (1986) found a curvilinear relationship between these two variables with the highest and lowest performers having the greatest turnover rates.

Many have stated that no clear cut answer is available at the present time (Dreher, 1982; Mobley, 1982; Stumpf & Dawley, 1981). Kanfer, Crosby, and Brandt (1988) found a relationship between performance and turnover but this relationship depended upon job tenure. Poor performance by leavers was found for individual's with 6-12 months tenure, but no differences in performance were found for individuals with 2-5 months tenure or over 12 months tenure. This study also revealed that leavers with more than 6 months but less than 12 months job tenure were absent more than individuals who stayed with the organization.

A meta-analysis, conducted by McEvoy and Cascio (1987), revealed that good performers are less likely to leave an organization than are poor performers. This study also determined that type of turnover, time span of measurement, and level of unemployment moderated the performance-turnover relationship. Voluntary, involuntary, and total turnover all had a negative relationship with performance, but involuntary turnover had the highest negative relationship. The second moderator concerns when in time the performance measure is collected. The meta-analysis offered support for the hypothesis that performance is only weakly related to turnover if performance is measured before individuals decide to leave the organization. If the performance measure is collected after the decision has been made, then the negative relationship between these variables is strengthened.

Modest support was also found for level of unemployment as a moderator of this relationship, *although the direction of this relationship was not as predicted*. It was expected that when jobs were plentiful, the negative relationship between performance and turnover would be even stronger. It was assumed that for good performers the job market is unimportant, because they would be able to find a job at anytime. For poor performers, though, a favorable job market with lots of opportunities is needed. Just the opposite results were obtained. Either good performers leave the organization more often when conditions are favorable, or poor performers leave more often when conditions are unfavorable.

Military

Little research has been done in the military on the relationship between the quality of an individual's performance and their continuance decision and behavior. Szoc (1982) found that enlisted personnel who decided to stay were of a higher quality in terms of performance than those who had left. While Szoc's analysis was post hoc, Bruce (1989) found that promotability was predictive of actual continuance behavior. La Rocco *et al.* (1977) found similar results, although actual correlations were not as large as in the Bruce study. In brief, no definitive conclusions can be drawn regarding performance because of the paucity of studies, although existing results suggest that it would be unwise to ignore this variable entirely in the aviator model.

Civilian studies consistently find a negative relationship between pay and promotion and turnover, such that the higher the pay and the greater the perceived probability of promotion, the lower the probability of turnover. Other civilian studies examining incentive programs and the financial success of organizations find results in the expected direction, but too few studies have been conducted to draw definitive conclusions. Military personnel researchers identify pay and promotion as the primary factors affecting turnover decisions, although a few studies suggest that nonpecuniary factors such as job and organizational characteristics are more important.

Civilian

Pay and Promotion. Numerous studies report a negative relationship between either pay or promotion and turnover (Conference Board, 1972; Friedlander & Walton, 1964; Hulin, 1968; Knowles, 1964; Patchen, 1960; Ronan, 1967; Saleh, Lee, & Prien, 1965). Aside from this, much of the research on pay and promotion has looked at not only the idea that these variables affect withdrawal, but how they affect it. Patchen (1960) conducted a study based on expectancy/valence theory (Porter & Lawler, 1968; Vroom, 1964). This study looked at the relationship between perceived equity of compensation and organizational withdrawal. Using a sample of oil refinery workers, the results showed that the amount or rapidity of pay and promotion was less important in predicting absenteeism than the perceived fairness of these actions. However, in predicting turnover among hourly production workers, Telly, French, and Scott (1971) found perceived inequity of both pay and promotion was not significantly related to turnover. Also, Knowles (1964) found that for a sample of factory workers, whether or not they obtained their "expected wage" was more important than the actual amount of the wage in determining who would resign. Overall, Price (1977) claims that the data support a fairly well established negative relationship between pay and turnover. However, he claims that the strength of the relationship between promotion and turnover is low, although it has been consistently negative.

Incentive Programs. Two studies have been conducted that look at company incentive programs and their influence on reducing absenteeism. Lawler and Hackman (1969) had three autonomous work groups develop and implement their own incentive program to reward good attendance. Company supervisors then imposed this same system on other work groups within the company. Two work groups served as controls and participated in no incentive program. A significant decrease in absenteeism was found in those groups that planned the incentive program, but a 1-year follow-up showed that the program had been eliminated in two of the three original participative groups (Schefflen, Lawler, & Hackman, 1971). Attendance was lower in these two groups then before program implementation; whereas, attendance in the third group remained high. It was suggested that the removal of a plan by the company, which received mutual support from the workers, served to destroy the positive effects on attendance that were acquired. These studies point to the importance of employee participation in development of these programs in order to ensure commitment.

Organizational Performance. Only one study reviewed investigated the relation between performance of the organization and turnover. Wagner, Pfeffer, and O'Reilly (1984) found that turnover among managers in Fortune 500 companies was negatively related to the firm's financial performance. Performance was measured by obtaining the difference between the firm's return on investment and the industry median return on investment. Results showed that the worse the firm's performance, the higher the proportion of managers who left.

Military

Two issues are addressed in the literature: (1) are economic factors, such as pay, bonuses, and benefits important considerations when military personnel consider staying or leaving? and (2) If they are important, are economic considerations more or less important than nonpecuniary factors. Regarding the first, almost all researchers subscribed to Boesel and Johnson's (1984) conclusion that (p. 12):

Not surprisingly, there is almost universal agreement among researchers that compensation is a major, if not the major, factor in reenlistment decisions... The question is not whether pecuniary incentives affect retention, but how much they affect it.

The only dissenters were Hand *et al.* (1977). Their opinion was that (1) pay and other economic variables accounted for relatively little criterion variance, (2) many of the studies suffered from faulty research designs, and (3) researchers did not take into consideration the performance quality of individuals in their designs. The studies they reviewed were Enns (1975), Haber and Stewart (1975), Kleinman and Shughart (1974), Massell (1976), McCall and Wallace (1969), Nelson (1970), Quigley and Wilburn (1969), Carlisle (1975), Fisher and Morton (1967), Holter, Bloomgren, Dow, Provenzano, Stehle, and Grace (1973), Army Office of Personnel Operations (1969), Schneider (1973), Stoloff, Lockman, Allbritton, and McKinley (1972), Frey, Goodstadt, Korman, Romanczak, and Glickman (1974), and Plag (1969).

The Hand *et al.* (1977) conclusion notwithstanding, the position taken in the present report is that these authors "threw out the baby with the bath water" (i.e., yes, there were features of the studies that could have been improved, but that is true of most studies). The fact that the results were found across samples, at varying times, and were consistent suggests that pay and other economic variables are due additional consideration. The rest of the research literature seemed to support this conclusion. For example, Kissler (1980), citing Enns (1977), Guthrie, Lakota, and Matlock (1978), Haber and Stewart (1975), and Kohen (1977), viewed first-term enlisted personnel as less likely to attrite the more favorable their perceptions of pay and the opportunity for advancement. Further, La Rocco *et al.* (1977, p. 25) evaluated some of the same studies as Hand *et al.* (1977) and underscored the importance of pay and incentives to reenlistment intentions and behavior (Quigley & Wilburn, 1969; Lockman *et al.* 1972; Stoloff 1971; Stoloff *et al.* 1972; Wilcove, 1973).

Stolzenberg and Winkler (1983) cited military personnel research showing that pecuniary factors influence a person's decision to stay or leave. They also believed that studies showed that nonpecuniary factors equal or exceed the influence of pecuniary factors. As we shall see later, some reviewers came to the opposite conclusion regarding relative rank. While Stolzenberg and Winkler (1983) recognized the value of pay, they also felt that attrition could be lowered by educating

personnel on the real economic value of their military pay and benefits, by paying lump sum bonuses more often than other forms, and by allowing more freedom of choice on the type of remuneration. These recommendations were reached on the basis of studies such as the *Report of the President's Commission on Military Compensation* (1978), *Wall Street Journal* (1982), Perry (1977), Ens (1975, 1977), Air Force Human Resources Laboratory (1974), Fletcher and Giesler (1981), Kleinman and Zuhosky (1980), Gotz and McCall (1979, 1980a, 1980b), Chipman and Mumm (1979), Warner and his associates (1978, 1979a, 1979b, 1979c, 1979d), Chow and Polich (1980), Burright, Grissmer, and Doering (1982), Hiller (1982), Cohen and Reedy (1979), and Grace (1978).

Ramsey (1974) tended to concentrate on the Braunstein studies of the early 1970s, which dealt with a variety of incentives. Braunstein (1970, 1972) and Braunstein and Muldrow (1972) revealed from survey results that first-term Navy enlisted personnel did not rate highly any economic incentives when considering reenlistment. However, in the study with Muldrow, noncareer motivated personnel (enlisted and officer) indicated that their continuance behavior would be enhanced if pay, allowances, and retirement benefits were made equal to civil service and industry. Braunstein's (1970) survey results also showed that the Variable Reenlistment Bonus was the most influential of all incentives, both monetary and nonmonetary. Further, 54 percent of the reenlistees in the Braunstein study claimed that Proficiency Pay influenced their decisions to remain in the Navy. As expected, both Braunstein and Frey, Goodstadt, Korman, Romanczuk, and Glickman (1974) found that retirement benefits were strong motivators of continuance intentions and behavior for senior enlisted and officer personnel.

Sterling and Allen (1983) disagreed with Stolzenberg and Winkler (1983) and agreed with Boesel and Johnson (1984) on the importance of economic variables relative to other types of incentives and satisfactions. That is, they inferred from the literature (Owen, 1969; Woelfel, 1976; Goldman & Worstine, 1977) that job and organizational characteristics are more important to continuance than are economic variables. Boesel and Johnson (1984, p. 27), on the other hand, contended that pecuniary variables (pay, allowances, and bonuses) carry more weight than do nonpecuniary variables (job characteristics and the assignment process). Boesel and Johnson's (1984) contribution was to interpret the literature in terms of elasticity calculations; for example, an elasticity of 2.5 means that if there were a 10 percent increase in pay, it is then predicted that reenlistment rates would increase 25 percent. Boesel and Johnson's review of elasticity studies included Warner (1981), Chow and Polich (1980), Warner and Simon (1979), Goldberg and Warner (1982), Enns (1977), and Hiller (1982). As an example, Chow and Polich estimated a reenlistment pay elasticity of 3.9 for first-term reenlistment, which means that an increase of 10 percent in base pay would result in an increase of 39 percent in reenlistment rates (from .225 to .312).

Our conclusion is that studies have not included internal economic and noneconomic variables in the same design often enough to draw firm conclusions. Thus, when reviewers evaluate existing studies, they may come to different conclusions based on their own biases. Our bias is that economic variables are more important than noneconomic variables for lower-level personnel who are undecided about their career plans or are leaning towards leaving the service. Conversely, first-term individuals who have reenlisted are expected to be more concerned with nonpecuniary variables than with pecuniary variables.

Economic Environment--External

Preliminary results in the civilian sphere suggest that turnover is related to the availability of attractive jobs outside one's current organization and low unemployment rates. However, researchers are still attempting to: (1) identify the actual chain of events involved (e.g., some studies suggest that external economics affect retention intention, which then affects behavior) and (2) clarify dependent variables (e.g., whether results pertain to individual turnover decisions or decisions aggregated across individuals). Military personnel research has suggested that military-civilian pay differential is not important in the turnover decision except for naval aviators, but that perceived job alternatives, benefits, and a person's perception of their own marketability are important considerations.

Civilian

Perceived Alternatives. Most studies looking at the economic environment and its contribution to explaining turnover have focused mainly on the internal environment. As discussed above, this includes pay, promotions, and incentives. Other research has looked at the external environment, but this has been geared mostly toward determining the influence of availability of jobs, vacancy levels, and turnover rates on withdrawal. Very few studies have looked at individuals' perceptions or evaluations of available jobs. Dansereau *et al.* (1974) found that individuals' expectancies of finding alternative employment moderates the attitude-turnover relationship. Mobley, Horner, and Hollingsworth (1978) found that perceived alternatives did not influence turnover directly; but rather, it was positively related to intent to turn over, which, in turn, is significantly and positively related to actual turnover. Stumpf and Hartman (1984) also found perceived opportunities of obtaining alternative employment as a primary antecedent of turnover behavior.

Larson and Fukami (1985) investigated the relationship between perceived ease of movement and various withdrawal behaviors. Their findings showed that perceived ease of movement was significantly related to excused absenteeism among a sample of nurses and a sample of blue-collar workers, but was not related to unexcused absenteeism for either sample. There was a significant positive relationship between perceived ease of movement and lateness for the sample of blue-collar workers.

Unemployment Rate. Past research indicates that there is a significant negative relationship between unemployment rates and turnover (Cotton & Tuttle, 1986; Woodward, 1975-1976). Studies by Blau and Kahn (1981) and Farber (1980) have failed to support these findings. However, these two studies looked at individual turnover decisions as opposed to aggregate measures of labor movements within an industry. It was suggested that unemployment rate is a better predictor of aggregate behavior instead of individual behavior (Cotton & Tuttle, 1986). A study by Carsten and Spector (1987) found that unemployment rate moderated the relationship between job satisfaction and turnover, as well as the relationship between intention to quit and turn over. The relationship between these two variables and turnover is low during times of high unemployment and limited employment opportunity, but is high during times of low unemployment and expanded

opportunity. Hulin, Roznowski, and Hachiya (1985) found that job opportunities influence job satisfaction directly, as well as turnover directly.

Union Presence. Union presence has also been found to influence turnover behavior. Freeman (1980) found a strong negative relation between these two variables. The results of this study indicate that unionism provides a "voice" alternative for dissatisfied employees so that exiting the organization isn't always necessary. The author argues that the grievance system provided by union presence plays an important role in reducing turnover, which, in turn, reduces costs and raises productivity. A review of the turnover literature by Cotton and Tuttle (1986) also supports the strong negative relation between these variables.

Military

Boesel and Johnson (1984, p. 18) examined studies with two sets of variables: civilian-military pay differential and civilian unemployment rates (Army Department of Personnel Management Development, 1973; Faris, 1984; Szoc, 1982; Cohen & Reedy, 1979; Chow & Polich, 1980; Hiller, 1982). First, these studies indicated that pay differential was not an important correlate of reenlistment decisions and behavior. Second, some of these same studies and others (e.g., Baldwin & Daula, 1985b) found that civilian unemployment rates were important. For example, Szoc found that some individuals who had intended to leave the service subsequently remained, and it appeared that high civilian unemployment rates, and high interest rates, were the deciding factors.

Vernez and Zellman (1987, p. 36) cited studies (Meola & Koechel, 1983; Flores, 1984) detecting that perceived job alternatives and the individual's perceptions of his own marketability are correlated with reenlistment intentions and behavior. Rakoff *et al.* (1987, p. 9), like Boesel and Johnson (1984), drew on Szoc, but in this case, to point out that he found that civilian job opportunities and civilian job benefits were key factors for those who were intending to leave the service.

Woods (pp. 17-24) reviewed literature specific to military aviation research, with results that sometimes contradicted the more general research presented above on the impact of pay differential. For example, he found that naval retention was directly related to this variable and that the relationship was greatest following the completion of the minimum service requirement. On another issue, Kleinman and Zuhoski (1980) examined the relationship between airline hiring initiatives and loss of naval pilots for FYs 1963 through 1978. They found a direct relationship, such that: (1) naval pilot retention increased when airline hirings decreased, and (2) when airline hirings increased by 12,000, naval retention rates decreased by 8 to 10 percent compared to when there was little or no change in airline hiring rates. For every three naval pilots hired by civilian airlines, the Navy lost five pilots. And, in contrast to the above studies on pay differential, Kleinman and Zuhoski found that naval retention was directly related to this variable and that the relationship was greatest following the completion of the minimum service requirement.

Cressey (1988)(Director, Aviation Manpower and Training) wrote that the airlines hirings had been over 5,000 per year since 1985 and were expected to stay at this level to the year 2007. In addition, by the turn of the century, according to the *Future Aviation Professionals of America* (FAPA), more than 2,000 airline pilots will be eligible to retire. That estimate exceeds the number

of military pilots who would be completing their first obligation, meaning that the airlines would be able to hire all military pilots who were interested (Dalton, 1987).

Kriegal (1986) compared the earning potential of the airline pilot with the naval pilot. He concluded, based on his calculations, that over the lifetime of a pilot's career, an individual would earn more by remaining in the Navy until retirement at 20 years and then transferring to the airlines than by working as an airline pilot over the entire length of his career.

Affective Responses

Both civilian and military researchers have found consistent, and, in some cases, strong negative relationships between "affective" responses and intended and actual turnover. Affective responses are defined in the literature as a strong liking or disliking for an object, person, or group based on positive or negative evaluations. Three affective measures, in particular, have been found to be effective predictors: job satisfaction, organizational commitment, and met expectations. It is presumed with respect to the last that expectations reflect an opinion on what "should be" and that met expectations give rise to strong positive emotional reactions, and unmet expectations, strong negative reactions. Some research has suggested that organizational commitment is a better predictor than job satisfaction, although in either case, it is assumed that they directly (as opposed to indirectly) affect turnover behavior. Other research has suggested that all affective response-turnover relationships are indirect (i.e., affective responses affect the intention to remain in or leave the organization, which, in turn, affects actual turnover behavior)

Civilian

Job Satisfaction. The majority of studies looking at the relationship between job satisfaction and intent to leave or actual turnover have reported a strong, negative relationship between these variables (Cotton & Tuttle, 1986; Dougherty, Bluedorn, & Keon, 1985; Hulin, 1966; Hulin, 1968; Lee & Mowday, 1987; Mikes & Hulin, 1968; Mobley, Griffeth, Hand *et al.*, 1977; Meglino 1979; Mobley, Horner, & Hollingsworth 1978; Muchinsky, & Tuttle 1979; Newman 1974; Porter & Steers 1973; Schuh 1967; Taylor & Weiss, 1969a, 1969b; Waters & Roach, 1971, 1973; Waters, Roach, & Waters 1976; Weitz & Nuckols, 1955; Wild, 1970). Futrell and Parasuraman (1984) and Orpen (1986) found a significant negative relationship between job satisfaction and turnover, but only for poor performers. The relationship between job satisfaction and absenteeism has also been investigated. There appears to be a weak, negative relationship between these two variables (Talachchi, 1960; Waters & Roach, 1971; Vroom, 1964).

Some studies have also looked at satisfaction with specific facets of the job, including the work itself, pay, promotion, and co-workers. The majority of these studies have employed the Job Descriptive Index (Smith, Kendall, & Hulin, 1969), which measures various characteristics or aspects of the job. Most studies have found a negative relationship between satisfaction with pay and turnover and/or turnover intentions (Cotton & Tuttle, 1986; Hellriegel & White, 1973; Koch & Rhodes, 1981; Leigh, Lucas, & Woodman, 1988; Mangione, 1973; Muchinsky & Tuttle, 1979;

Porter & Steers, 1973), although some studies have found no relationship (Waters, Roach, & Waters, 1976) or a weak relationship between these two variables (Mobley, Griffeth, Hand *et al.*, 1977; Meglino, 1979). Motowidlo (1983) looked at the effects of pay satisfaction, pay expectation (the perceived probability of receiving more satisfying pay in another job), age, tenure, nonpay satisfaction, and amount of pay received on intentions to quit. Pay satisfaction explained variance in intentions to quit beyond that explained by these other factors. In addition, intentions to quit and pay satisfaction were the only factors having a significant relationship with actual turnover.

Zaccaro and Stone (1988) found that job facet satisfaction mediated the relationship between job characteristics and intent to leave. Support for a negative relationship between satisfaction with supervision and turnover has been found (Cotton & Tuttle, 1986; Hellriegel & White, 1973; Hulin, 1968; Ilgen & Dugoni, 1977; Mobley, Griffeth, Hand *et al.*, 1977; Meglino, 1979; Muchinsky & Tuttle, 1979; Porter & Steers, 1973), as well as between satisfaction with co-workers and turnover (Cotton & Tuttle, 1986; Mobley, Griffeth, Hand *et al.*, 1977; Meglino, 1979; Muchinsky & Tuttle, 1979; Porter & Steers, 1973). Taylor and Weiss, (1969a, 1969b) and Waters, Roach, and Waters (1976) found no relationship between satisfaction with supervision and turnover. Waters, Roach, and Waters (1976) also found no relationship between satisfaction with co-workers and turnover. Overall, there appears to be a weak, negative relationship between turnover and satisfaction with supervisors and co-workers.

A review of the studies looking at the relationship between satisfaction with promotion and turnover indicates that there is a weak, negative relationship between these two variables (Cotton & Tuttle, 1986; Hulin, 1968; Kraut, 1975; Mobley, Griffeth, Hand *et al.*, 1977; Meglino, 1979; Porter & Steers, 1973), although no relationship between these variables was found among a sample of female clerical workers (Waters, Roach, & Waters (1976). Several studies have supported a strong, negative relationship between turnover and satisfaction with the work itself (Cotton & Tuttle, 1986; Mobley, Griffeth, Hand *et al.*, 1977; Meglino, 1979; Muchinsky, & Tuttle, 1979; Waters, Roach, & Waters, 1976) Using The Job Descriptive Index, Mobley, Horner, and Hollingsworth (1978) found a negative relationship between satisfaction with the work itself and turnover among a sample of hospital employees. Additional variables, such as satisfaction with peer-group interactions (Evan, 1963; Farris, 1971) and need satisfaction (Ross & Zander, 1957) have also been negatively related to turnover.

Organizational Commitment. Although job satisfaction has demonstrated a strong relationship with turnover, researchers have investigated the possibility that other affective responses may prove to be better predictors of turnover. Organizational commitment, which is considered a more global attitude toward the organization, has received much research attention. Several studies have supported a strong negative relationship between organizational commitment with both intent to leave and actual turnover (Cotton & Tuttle, 1986; Dougherty, Bluedorn, & Keon, 1985; Porter, Crampon, & Smith, 1976; Porter, Steers, Mowday, & Boulian, 1974; Sheridan & Abelson, 1983; Steers 1977). Pierce and Dunham (1987) found strong relationships between organizational commitment and intent to leave, and between intent to leave and actual turnover. The relationship with organizational commitment was negative; whereas, the association between intent to leave and turnover was positive.

Porter, Crampon, and Smith (1976), Porter, Steers, Mowday, and Boulian (1974), and Steers (1977) all found that organizational commitment was more strongly related to turnover than was

job satisfaction. Studies by Marsh and Mannari (1977) and Mowday, Steers, and Porter (1979) report only weak or moderate correlations between organizational commitment and turnover. Chelte and Tausky (1986) found that the relationship between organizational commitment and turnover intent varied depending on employee rank. Several other studies have found that organizational commitment influences turnover indirectly via its influence on intentions to quit (Bluedorn, 1982; Michaels & Spector, 1982; Mowday, Koberg, & McArthur, 1984). Mirvis and Lawler (1977) found that one aspect of organizational commitment, organizational involvement, had a significant negative relationship with turnover.

Met Expectations. Several researchers have found that individuals join an organization with certain expectations, and that if these expectations are not met, they will be more likely to leave the organization (Cotton & Tuttle, 1986; Dunnette, Arney, & Banas, 1973; Katzell, 1968; Linden, 1985; Porter & Steers, 1973; Ross & Zander, 1957). In each of these studies, the individuals did not differ in expectations when hired, but stayers and leavers were significantly different when met expectations were measured after withdrawal. The concept of met expectations is closely related to the organizational practice of "realistic job previews" discussed earlier. Job previews are supposed to provide the individual with realistic expectations about the position they are taking. The greater the concordance between expectations and actual experience, the less likely it is that the individual will leave. The concordance between these two aspects is considered the degree of met expectations.

Other studies have used techniques to experimentally induce differences among groups in degree of realistic expectations. These studies have found that those individuals who had more realistic expectations initially were more likely to remain (Macedonia, 1969; Weitz, 1956; Youngberg, 1963). Ilgen and Dugoni (1977) found no relationship between met expectations and satisfaction or turnover.

Military

Studies frequently confirmed the relationship between affective responses and turnover variables. Most reviewers reported negative relationships between overall satisfaction of various kinds and turnover variables (i.e., the more satisfied an individual, the less likely they were to want to leave, or actually leave, the service). The reviewers and some of the studies they examined were as follows:

1. Kissler (1980, p. 6):

Greenberg *et al.* (1977); Hand *et al.* (1977); Hulin (1977); Mobley, Griffith, *et al.* (1977); and Mobley, Hand, *et al.* (1978).

2. Stolzenberg and Winkler (1983):

Fletcher and Giesler (1981) and Greenberg *et al.* (1977).

3. Boesel and Johnson (1984, p. 25):

Perry (1977).

4. Vernez and Zellman (1987, p. 35):

Kohen (1984); Lakhani, Hyder, *et al* (1985), Allen (1981), and Szoc (1982).

5. Rakoff *et al.* (1987, p. 8):

Royle and Robertson (1980), Farkas and Durning (1982), and Szoc (1982).

6. Bruce and Burch (1989):

Martinsen and Hansen (1985), Watson and Appel (1986), and Bruce (1989).

In contrast to others, Hand *et al.* (1977) were generally unimpressed when reviewing the relationships between satisfaction and turnover variables reported in the research literature (Bruni *et al.* 1975; LaRocco *et al.* 1975; Stoloff, 1971; Bowers, 1973; Carlisle, 1975; Drexler, 1975; Stoloff *et al.* 1972).

In addition to satisfaction, organizational commitment has been shown to correlate significantly with turnover variables (see Sterling and Allen (1983) in the "Job Characteristics" section).

In their reviews, Ramsey (1974), Kissler (1980), and Stolzenberg and Winkler (1983) found that enlisted personnel were reported as attriting less often and reenlisting more often when their preconceptions or expectations regarding military service were confirmed by their actual experiences. Put another way, personnel were more likely to remain in the service if their positive expectations proved to be realistic. This finding was reported whether or not expectations were brought to the military situation as a result of an individual's personal background or as information received from the recruiter. It was also found that personnel better tolerate negative conditions if they have been apprised honestly of them before embarking on a military career.

Some of the studies cited by Ramsey (1974, p. 19) were Glickman (1961, 1973), Weitz (1956), and Wanous (1972). Kissler (1980), who focused on first-term attrition, identified (p. 7) Greenberg, Murphy, & McConeghy (1977); Mobley, Hand *et al.* (1977); Baker, & Meglino (1978); and, Wiskoff (1977). Stolzenberg and Winkler (1983, p. 51) referred to findings by Landau and Farkas (1978), the Advanced Research Resources Organization (1979), Lau (1979), Goodstadt, Yedlin, and Romanczuk (1978), Goodstadt and Yedlin (1979), and Guinn (1975).

Behavioral Intentions

Both the civilian and military literatures indicate a strong relation between intention to quit and actual turnover behavior. Most researchers seem to agree that this relationship is the primary one, with other variables, such as economics, being indirectly related to turnover through the retention intention.

Civilian

Fishbein and Ajzen (1975) were first to introduce the idea that an individual's intention to perform a certain behavior is the best single predictor of actual behavior. Subsequent to this, much research has been conducted that investigates the cognitive antecedents of turnover, namely

intention to quit (Hom, Katerberg, & Hulin, 1979; Kraut, 1975; Mobley, Griffeth, Hand *et al.*, 1977; Meglino, 1979; Price & Mueller, 1981). Many studies surfaced that supported the notion that affective responses, such as job satisfaction, did not influence turnover directly but rather indirectly through intentions (e.g., Dalessio, Silverman, & Schuck, 1986). Most of the research has proceeded in this direction.

A review of the literature by Steel and Ovalle (1984) shows that many researchers have incorporated turnover intent as an integral part of models predicting turnover (e.g. Birkenbach, 1983; Bluedorn, 1982; Mobley, 1977; Mobley, Griffeth, Hand *et al.*, 1977; Meglino, 1979; Mobley *et al.*, 1978; Price, 1977; Steers & Mowday, 1981). These studies differ in some respects, but they all postulate that affective responses lead to intentions which subsequently lead to turnover.

In their meta-analysis, Steel and Ovalle compared the strength of the relationship between behavioral intentions and turnover with the strength of the relationships between several affective responses and turnover. The results showed that intention to turnover had a much stronger association with turnover than did either overall job satisfaction, work satisfaction, or organizational commitment. It was concluded that intentions are stronger antecedents of turnover than are affective responses. The possibility that there are factors which moderate the intent-turnover linkage was also investigated. It was found that the time interval between collection of the individuals' behavioral intentions and the collection of the actual criteria, moderated the intent-turnover linkage. The shorter the interval, the stronger the relationship. Whether the samples were blue or white collar workers or military or civilian personnel had no significant moderation effects on the relationship between intention to quit and turnover.

Military

Intention to leave was consistently found in the military literature to correlate significantly with actual behavior. The reviewers cited the following studies: Kissler, 1980, p. 6; Alley & Gould, 1975; Hand *et al.* 1978; Hoene, 1986, p. 10; Mobley, 1982; Hulin, Miller, & Katerberg, 1979; Steel & Ovalle, 1984; Mobley *et al.* 1979; Smith, 1988, p. 4; Hom & Hulin, 1981; Motowidlo & Lawton, 1984; Bruce, 1989, p. 4; Cook & Morrison, 1985; Sheposh, White, Magnusson, & Harvey, 1980; Wood, 1988, p. 22; Cook, 1979.

Withdrawal Behaviors

Civilian research suggests that withdrawal behaviors such as absenteeism, declining behavior, and turnover all reflect the same underlying psychological process and that the individual often shows a progression from one behavior to the next. Military studies examining these kinds of issues are lacking.

Civilian

Wolpin and Burke (1985) looked at the absenteeism-turnover relationship. They concluded that the relationship between these two factors varies greatly depending on the time period, people, situations, and measures that are collected. Sheridan (1985) investigated a cusp-catastrophe model

of turnover, which views "the behavioral outcomes of withdrawal as discontinuous changes in employee behavior rather than as continuous linear responses to socio-psychological withdrawal." This study looked at three different types of withdrawal: (1) declining performance disregard, (2) absenteeism, and (3) turnover. The results supported the contention that declining job performance, absenteeism, and turnover could all be viewed as different outcomes of the same withdrawal phenomenon. The author suggests that future studies would do well to incorporate catastrophe models, as opposed to linear models, which view behaviors as progressive outcomes along a continuum.

Farrell and Petersen (1984) looked at the withdrawal process in terms of a progression of events. This study revealed that both decreases in level of commitment and increases in absenteeism were significant factors in predicting turnover. Commitment level was a slightly better predictor than absenteeism.

Jackofsky and Peters (1983) tested the March and Simon participation hypothesis using two dependent measures: job turnover and organizational turnover. The study revealed that the participation hypothesis involving ease of movement and desirability of movement was better supported when job turnover was the dependent measure instead of organizational turnover.

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APPENDIX B

EXAMPLES FROM ANNOTATED BIBLIOGRAPHY

**Aileen M. Conroy
Reginald A. Bruce**

EXAMPLES FROM ANNOTATED BIBLIOGRAPHY

Problem

While there has been a plethora of research in the areas of employee retention and turnover, there are few detailed compilations of research findings. This situation has resulted in researchers continually having to repeat the literature search and review process.

Purpose

The purpose of this effort was to provide researchers, policy makers, and others interested in human resources management with a readily accessible listing of references on retention and turnover research. The bibliography focuses on both civilian and military research.

Approach

References for the bibliography were identified through: (1) the authors' knowledge regarding retention research, (2) computerized literature searches using the Lockheed DIALOG retrieval system, (3) the Manpower and Training Research Information System (MATRIS), and (4) contacts with other research organizations regarding their work in this arena.

Results

A few examples from the annotated bibliography are presented in this appendix. The entire bibliography is contained on diskettes, which also contain the references grouped by: (1) intent, (2) satisfaction, (3) commitment, (4) leadership, (5) performance, (6) compensation, (7) biodemographics, and (8) family issues. The diskettes are available upon request.

Catalog No.: 2500006
 Last Update: 89/07/17 09:39
 Year: 1984
 Authors: Abelson, M. A., & Baysinger, B. D.
 Title: Optimal and dysfunctional turnover: Toward an organizational level model
 Publ. Details: *Academy of Management Review*, 9(2), 331-341
 Identifiers: dysfunctional turnover, personal characteristics, organizational climate, extra organizational factors, cost analysis
 Comments: Dysfunctional turnover is defined here as the level that produces a divergence between the organization's optimal balance of costs associated with turnover and the costs associated with retaining employees. Under this approach, the optimal level of aggregate turnover for most organizations will be (1) greater than zero and (2) variable across organizations contingent on particular factors influencing retention costs and quit propensities. The model presented posits that individual, organizational, and environmental attributes influence individual quit propensities of employees and, hence, expected turnover rates for the organization.

Catalog No.: 4400006
 Last Update: 89/06/29 11:13
 Year: 1979
 Authors: Advanced Research Resources Organization
 Title: Voluntary separation for attrition management
 Publ. Details: (ARRO-3022-FR) Washington, DC: Advanced Research Resources Organization
 Identifiers: military, enlisted, Navy, voluntary turnover
 Comments: An innovative program of attrition management through an early voluntary release option has been instituted on a trial basis for Navy enlisted personnel. An evaluation of the effectiveness of this program is required in order to assess whether or not attrition rates and attitude toward the Navy is affected. A comprehensive structured interview was conducted with 234 enlisted personnel who previously had been in the Voluntary Release Program or in a matched control group not having the option to leave. Comparisons between groups were made in terms of propensity toward attrition and perceptions of Navy life. The propensity toward attrition was much lower for the voluntary release group than for the control group. The voluntary release group also showed more favorable attitudes toward the Navy than did the control group. The Voluntary Release Pilot Program exerted a beneficial impact upon its participants in the middle and later stages of their first enlistment and merits further study as a means of effective attrition management.

Catalog No.: 4300001
 Last Update: 89/07/13 08:44
 Year: 1983
 Authors: Air Command and Staff College
 Title: Retention of USAF OB/GYN
 Publ. Details: (AD-A194 893) Alexandria, VA: Defense Logistics Agency
 Identifiers: medical personnel, Air Force, military, physicians, OB/GYN
 Comments: Recent reports show that the manning shortfalls, of several USAF hospitals, are now establishing very costly local contracts for OB/GYN services. The report examines the factors that have caused the OB/GYN retention problem. It then uses these factors, along with other elements of the health care process, to recommend solutions to the retention problem. These solutions will be superior to the current practices of setting up expensive local contracts for OB/GYN services.

Catalog No.: 4400001
Last Update: 89/07/18 14:07
Year: 1975
Authors: Alley, W. E., & Gould, R. B.
Title: Feasibility of estimating personnel turnover from survey data: A longitudinal study
Publ. Details: (AFHRL-TR-75054). Brooks Air Force Base, Texas: Air Force Human Resources Laboratory
Identifiers: military, Air Force, enlisted, gender, male, intent, aptitude, employee attitude, tenure, career decisions, years of service
Comments: The problems associated with excessive personnel turnover are costly in terms of the time and money necessary to train replacements and occasionally in the loss of organizational effectiveness. In the Air Force, turnover in first-term enlisted personnel is typically between 75 and 80 percent and, while the overall occupational structure is designed to operate within these constraints, periodic shortages occur in certain career specialties while in others, overages are more commonplace. Responses from more than 50,000 Air Force enlisted personnel surveyed as part of Occupational Research Program (Christal, 1974) were selected for analysis. Data used were from surveys conducted during the period from September 1955 to November 1971. Respondents, who ranged in age from 17 to 25 years, were predominantly male and were serving in their first 4-year enlistment term at the time of the survey. In the questionnaire, respondents were asked to indicate whether or not they intended to reenlist at the end of their current obligated service commitment. They were also rated on their present job in terms of the interest and perceived utilization training and talent associated with it. Frequency and percentage distributions characterizing item responses and career decisions of the sample are given. Relationships between career intent/job attitude responses and actual reenlistment decisions were studied using multiple linear regression techniques. Job attitudes were found to be substantially related to career decisions but did not provide unique contributions to predictions of career decisions when used in conjunction with career intent statements. A model-seeking exercise identified a second-degree polynomial model with career intent and time-in-service interaction vectors as the most appropriate prediction.

APPENDIX C

REFEREE BIBLIOGRAPHIC DATABASE MANAGER

REFEREE BIBLIOGRAPHIC DATABASE MANAGER

Use on a Zenith 248 Personal Computer

The format for the following instructions is as follows:

- Any actions you must take will be numbered in the order you must perform them.
- All commands you must enter will be shown in **bold type**.
- The computer's responses and any explanations will be typed in regular print.

To install REFEREE database (See enclosure 1 at the end of this appendix.)

1. Turn on the computer

C:\>

2. Insert diskette labeled "Batch File" (blue label) into "A" drive.

3. Type **A:**

strike **enter**

Your prompt will change to the "A" prompt

A:\>

4. Type **Install**

strike **enter**

- This will invoke the batch file, which will create a new directory named "Referee."
- From this point on, the computer will prompt you through the installation process.
- It will instruct you to insert (in numerical order) volume numbers 1-5 of the green labeled Referee/Retention floppies.
- When the installation process is complete, the following message will appear:

Insert disk with batch file and press any key when ready.

5. Reinsert "Batch file" diskette

strike **enter**

- The following DOS prompt will appear:

C:\REFEREE>

6. Type **referee**

strike **enter**

- The referee banner will flash by and the database screen will appear.

Enter name of main database: RETENTN

If you do not completely remove the retention database and the referee directory from your computer before turning it off, returning to the database is a simple process.

1. Turn on the computer.

C:\> (remain at the C:\> prompt)

2. Type **cd referee**

strike **enter**

This will put you into the referee directory, your prompt will change to

C:\REFEREE>

3. Type **referee**

strike **enter**

The database screen SHOULD appear.

ENTER RETENTN IN HIGHLIGHTED AREA.

To completely eradicate the Retention database and the Referee directly from your computer, follow these instructions.

Enter the Referee program using either the installation process or the process outlined for reinvoking the software.

1. Select **F7 UTILITIES** from the main menu.

Select **F2 REMOVE** from the utilities menu.

The computer will beep at you and flash a warning and prompt you to press y (for yes) if you wish to delete the retention database.

2. strike **Y**

Referee will respond that the database has been removed--strike any key.

3. strike **esc** (twice)

The computer will return you to the DOS prompt

C:\REFEREE>

4. Type **cd**

strike **enter**

Your prompt will change to

C:\>

5. Type **rd referee**

strike **enter**

It's gone! If you'd like to check, you can type **cd referee** and the computer should respond with a message telling you the directory is invalid.

EPA/600/8-87/052a
October 1987

REFEREE

Bibliographic Database Manager

by

Slate Raymond
Northrop Services, Inc — Environmental Sciences

Contract No. 68-02-4198

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U S ENVIRONMENTAL PROTECTION AGENCY
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nclosure 1

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APPENDIX D

IDENTIFIERS NEEDED FOR COMPUTERIZED ANNOTATED BIBLIOGRAPHY

Aileen M. Conroy

IDENTIFIERS NEEDED FOR COMPUTERIZED ANNOTATED BIBLIOGRAPHY

ability

absenteeism

ACB-61 (Army Classification Battery)

accountants

active duty

administrative personnel

affect

affective orientation

affective/cognitive

AFQT (Armed Forces Qualification Test)

age

Air Force (USAF)

alternative employment

American/Japanese turnover rates

anonymous questionnaires

anonymous/signed questionnaires

anxiety

aptitude

Armed Forces Qualification Test (AFQT)

Armed Services Vocational Aptitude Battery (ASVAB)

Army

Army Classification Battery (ACB-61)

assembly workers

ASVAB (Armed Services Vocational Aptitude Battery)

attitude/behavior
attitudes
attitudes/attributions
attributes
attributions
attributions/attitudes
authoritarianism
autonomy
bank tellers
banking personnel
battalion commander
behavior
behavior/attitude
behavior/economic model
behavior/intent
behavioral intentions model
benefits
biodemographics
blue collar workers
bonuses
burnout (use stress)
business personnel
cadets
career advancement (use promotions)
career aspirations

career counseling (use counseling)
career decisions
career development
career facilitation
career history
career intentions (use intent)
career level
career mobility (use mobility)
career opportunities
career path
career planning (use career decisions)
career satisfaction (use satisfaction)
Cattel's Sixteen Personality Factor Questionnaire
central life interest
children (use dependents)
civil service personnel
civilian
civilian job market
clerical personnel
co-worker relations
cognition
cognitive orientation
cognitive/affective
commitment
command tour

command tour length
commercial airline personnel
commercial airlines
communication
communication networks
communication systems (use communication networks)
comparative referents
compensation
compliance
content/process model
contractors
cost analysis
counseling
co-worker relations
creativity
credit union personnel
dependents/number of and ages of
desertion
dieticians
direct questionnaires
direct/indirect questionnaires
draft
dual career (households)
duty assignment
economic factors

economic model
economic/behavior model
education
educational level (use education)
efficiency (use performance)
ego-defensive biases
egocentric biases
employee attitudes
employee attributes
employee characteristics (use personal characteristics)
employee expectations (use expectations)
employee participation (use employee voice)
employee voice
employment applications
employment history--civilian (x-ref: service history)
End of Recruit Training Questionnaire
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enlistment
enlisted
entrepreneurs
equity theory
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experience level
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extrinsic factors
extrinsic motivation
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family responsibilities (use family)
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female
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identification
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innovation
insurance agents
insurance personnel
intent
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intent to look for a new job (use intent)
intent to quit (use intent)
intent to transfer (use intent)
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intrinsic factors
intrinsic motivations
investment
involuntary turnover

Involvement Questionnaire

Japanese/American turnover rates

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job characteristics

job classification

job commitment (use commitment)

job complexity

job content (use job characteristics)

job enrichment (use job characteristics)

job facets (use job characteristics)

job market

job opportunities (use alternative employment or labor market)

job preference

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job scope

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job skills

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job stress (use stress)

job tension (use stress)

job title

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leadership characteristics "Structure"
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Occupational Attitude Inventory (OAI)

Occupational Commitment Questionnaire (OCQ)

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OCQ (Occupational Commitment Questionnaire)

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