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Toward a Theory of Organizational Commitment

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Technical Report No. 8

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18. SUPPLEMENTARY NOTES

A slightly revised version of this paper will appear as a chapter in a forthcoming book by Mowday, Porter and Steers on "Employee-Organization Linkages: The Psychology of Commitment, Absenteeism, and Turnover"

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Research on employee commitment to organizations has most often been cross-sectional in design. Although we have identified a number of antecedents of commitment, the processes through which employees become committed to organizations are still not well understood. The purpose of this paper is to provide a conceptual framework of the commitment process. Organizational commitment is viewed as resulting from reciprocal relationships between behaviors and attitudes at work. The factors influencing the development of commitment are examined across three time

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20. Abstract (continued)

periods relevant to the career of employees in organizations: 1) pre-entry phase; 2) early employment period; and 3) middle and late career stages. Results from two previously unpublished longitudinal studies of the commitment process are presented and suggestions for future research are discussed.

A modified version of this paper will appear in the forthcoming book by Mowday, Porter, and Steers entitled Employee-Organization Linkages. New York: Academic Press, in press.

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TOWARD A THEORY OF ORGANIZATIONAL COMMITMENT

Richard T. Mowday and Richard M. Steers, University of Oregon
Lyman W. Porter, University of California, Irvine

The research studies reviewed by Steers et al (1981) suggest that a number of variables have been viewed as "antecedents" of employee commitment to organizations. In interpreting the results of these studies, however, it is important to recognize that previous research on the antecedents of organizational commitment has, almost without exception, been cross-sectional in design. In other words, investigators have collected questionnaire data from employees at one point in time and correlated commitment with a number of different measures. While these studies are useful for identifying the types of personal, job-related, and organizational factors that may be related to organizational commitment, they provide less insight into the causal nature of these relationships.

The identification of causal relationships in the study of commitment represents an important area of theoretical concern. Unlike job satisfaction which is viewed as a less stable attitude that may reflect contemporaneous job conditions, commitment is viewed as a more stable attachment to the organization that develops slowly over time. The commitment of employees to organizations is perhaps best characterized as a <u>process</u> that unfolds over time. This process may begin before the employee enters the organization and extend over successive years of employment. To develop a better understanding of employee commitment it is necessary to focus attention on the factors that may influence the development of commitment at different stages of an employee's career and the process through which employees become committed to organizations (cf., Buchanan, 1974).

The purpose of this paper is to examine the commitment process. While the discussion will draw upon existing research, it should be apparent that the lack of rigorous longitudinal studies limits discussion to a more speculative nature. The goal of this paper is to identify relevant variables and develop a conceptual model that can serve to guide future research on the commitment process. The discussion of the commitment process will be divided into three stages: 1) anticipation or pre-entry and job choice influences on commitment; 2) initiation or the development of commitment during the first few months of employment; and 3) entrenchment or the continuing development of commitment through mid- and late-career stages. The three stages in the development of organizational commitment are summarized in Exhibit 1. Following this discussion, data from two previously unpublished longitudinal studies will be presented. Both studies focused on the development of commitment during the early employment period and suggest several factors that may influence the commitment of new employees.

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DEVELOPMENT OF ORGANIZATIONAL COMMITMENT: A CONCEPTUAL FRAMEWORK

Before discussing specific factors that may influence employee commitment at different career stages, it is useful to discuss in more general terms the process through which commitment is developed. As suggested by Steers et al (1981), two major theoretical approaches have emerged from previous research on commitment. First, commitment has been viewed as an attitude or attachment to the organization that leads to particular job-related behaviors. The committed employee, for example, has been found to be absent less often and less likely to voluntarily leave the organization than less committed em-

ployees (Mowday et al, 1979). The focus of this line of research has been on the implications for behavior of commitment attitudes. Second, a line of research in organizations has emerged in recent years which focuses on the implications of certain types of behaviors for subsequent attitudes. A typical finding in this research is that employees who freely choose to behave in a certain way and who find their decision difficult to change become committed to the chosen behavior and develop attitudes consistent with their choice (Salancik, 1977). In summary, one approach has emphasized the influence of commitment attitudes on behaviors, while the other has emphasized the influence of committing behaviors on attitudes.

Although the commitment attitude-behavior and committing behavior-attitude approaches emerge from different theoretical orientations and have generated separate research traditions, understanding the commitment process is facilitated by viewing these two approaches as inherently interrelated (cf., Mowday & McDade, 1979; Staw, 1977). Rather than viewing the causal arrow between commitment attitudes and behaviors as pointing in one direction or the other, as many researchers have done, it is more useful to consider the two as reciprocally related over time, as shown in the simple diagram in Exbibit 2. The view taken in this paper is that it is equally reasonable to assume that: 1) commitment attitudes lead to committing behaviors that subsequently reinforce and strengthen attitudes; and 2) committing behaviors lead to commitment attitudes and subsequent committing behaviors. The important issue is <u>not</u> whether the commitment process begins with either attitudes or behaviors. Rather, what is important is to recognize that the development of commitment may involve the subtle interplay of attitudes and behaviors over time. In other words, the process through which commitment is developed may involve self-reinforcing cycles of attitudes and behaviors that evolve on the job

and which over time serve to strengthen employee commitment to the organization. The basic theoretical orientation underlying the discussion in this paper is that the process of commitment is characterized by reciprocal influence between attitudes and behaviors.

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While viewing the commitment process in terms of reciprocal influence makes sense from a theoretical standpoint, it raises the difficult question of where to begin a discussion of the process. Most writers have chosen to view the early employment period (first several months to one year on the job) as the career stage during which the commitment process begins (e.g., Bray, Campbell, & Grant, 1974; Buchanan, 1974). The early employment period has a major influence on the development of employee commitment, as will be discussed below. However, it is likely that the commitment process begins before employees formally start work in the organization. Pre-employment and job choice influences on commitment will be discussed in the next section. Since the decision to join an organization involves a definite behavior, the discussion will emphasize the linkage between committing behaviors and subsequent attitudes. The discussion will also focus, however, on pre-employment influences other than job choice on subsequent commitment.

ANTICIPATION: PRE-EMPLOYMENT AND JOB CHOICE INFLUENCES ON COMMITMENT

While recent research has extensively investigated the different goals, values, and expectations new employees bring to organizations (Wanous, 1980), fewer studies have questioned whether new employees enter organizations with different propensities to become committed. Several studies have found reliable differences in the level of commitment new employees report on their first

day at work. Moreover, one study even found that the level of commitment expressed by employees their first day in the organization predicted turnover up to several months on the job (Porter et al, 1976), although this finding was not replicated in another study (Mowday & McDade, 1980). While commitment levels among new employees have been found to vary even before any work in the organization has begun, it is unlikely this early commitment reflects a stable attachment. Rather, differences in commitment new employees bring to the job may reflect different propensities to become committed to the organization. This type of propensity may provide a foundation for commitment that can be either strengthened or weakened by subsequent job experiences. In addition, initial levels of commitment may influence how the new employee experiences his or her job during the first few months at work. New employees entering the organization with high levels of commitment, for example, may be more likely than uncommitted employees to selectively perceive positive features of the job and work environment.

The question to be addressed in this section is what types of pre-employment and job choice factors influence the level of commitment of new employees as they enter the organization. The several categories of factors that appear important are summarized in Exhibit 3.

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Personal Characteristics

A number of personal characteristics of existing employees have been found to be related to commitment (Steers, 1977). Since many of the findings among existing employees appear relevant to new employees as well, relationships between personal characteristics and the development of initial commitment among new employees will only be briefly discussed. In considering the development

of initial commitment, however, it is useful to highlight several of the more relevant personal characteristics.

New employees enter organizations with different goals and values which they seek to satisfy through employment. Initial levels of employee commitment are probably related to employee perceptions of congruence between the organization's values and their own and the extent to which valued goals are seen as attainable on the job. Unfortunately, little research exists among newly hired employees to support this assertion directly. Evidence of a more indirect nature is provided in a study by Mowday and McDade (1980). They found the need for achievement to be related to commitment expressed by new employees on their first day at work, although the relationship was not particularly strong ($r = .20$, $p < .05$). New employees with a high need for achievement in this sample probably expressed higher initial commitment because they viewed the organization as a place in which their need could be satisfied. Similar relationships might also be found for other needs such as affiliation and power, although additional research will be required to establish a direct relationship between initial commitment and the extent to which new employees view organizational membership as instrumental to need satisfaction.

In addition to direct influences on initial commitment, employee needs can also be viewed as interacting with early job experiences to influence commitment during the first several months at work. In other words, the needs employees bring to the job may interact with their experiences once at work to influence commitment. This highest level of commitment during the early employment period, for example, may be found among employees who brought a high need for achievement to the job and who subsequently perceive their work as challenging. The question of whether employee needs directly influence commitment or interact with job experiences to influence commitment will require further research before firm conclusions can be drawn.

New employees are also likely to enter organizations with differing work-related values, such as belief in the protestant work ethic and work as a central life interest. These values are likely to result from early socialization of the individual. Research evidence suggests that employees who have a strong belief in the value of work or who see work as central to their self-concept are also more likely to become committed (Dubin et al, 1975; Hall & Schneider, 1972; Rabinowitz & Hall, 1977). While such a general relationship is likely to hold, it is also important to recognize that new employees with a strong personal work ethic may become more attached to their jobs than the organization in which the job is performed. Such a pattern of attachments is often characteristic of professions where individuals identify more strongly with the profession than the organization in which they are employed. Accountants may be less committed to an accounting firm than the accounting profession, for example, and lawyers less committed to a corporation than the profession of law. The development of professional attachments that transcend organizations is often given as one explanation for the negative lationship observed between commitment and education.

The socialization of individuals, both in the family and through educational experiences, and the resulting values and beliefs appear to represent important influences on the propensity of employees to become committed to organizations. Research in this area remains limited, however. In general, much greater research attention has been given to the socialization of new employees by organizations than by non-organizational sources. Since new employees may enter organizations with strongly held beliefs and values that are difficult to change, non-organizational sources of socialization represent an important influence on commitment.

Employee Expectations

Recent research on the early employment period has most often focused on the impact of employee expectations on attitudes and turnover. Several studies have found that employees who enter organizations with more realistic expectations are less likely to voluntarily leave than employees with unrealistic expectations (Wanous, 1980). In addition, several studies have found a positive relationship between commitment and the extent to which employees who had been on the job for some time believed their expectations had been realized (Buchanan, 1974; Steers, 1977). The recall nature of the measures used in these latter studies, however, makes it more difficult to draw conclusions about the effect of met expectations on commitment.

In a more recent study, Mowday (1980) directly investigated the influence of met expectations on commitment for a sample of newly hired employees. He compared the expectations of new hires with job incumbent perceptions of supervisory behavior, reward practices, role characteristics, and job challenge in two hospitals. This study found no relationship between the accuracy of expectations new hires brought to the job and commitment after one month at work. Additional analyses on data from this same sample by Mowday and McDade (1980), however, did find that expectations of new hires were related to the level of commitment reported the first day at work. Initial commitment was found to be positively related to expectations about job challenge, rewards that are likely to result from high performance, and several dimensions of supervisory behavior. The causal nature of these relationships was impossible to determine from the data collected, although Mowday and McDade (1980) interpreted these results as suggesting that high expectations about the job lead to high levels of initial commitment.

Based on evidence from one study it is difficult to draw conclusions about the influence of expectations on commitment. No direct evidence exists that met expectations are related to commitment, however, and the evidence relating met expectations to other attitudes such as job satisfaction is mixed (cf., Wanous, 1980). Based on existing evidence, we can conclude tentatively that the level of expectations new hires bring to the job have a direct relationship to commitment very early (e.g., within the first week) at work but only a limited, if any, influence on commitment after several months on the job. Employees who enter organizations with high expectations may have a greater propensity to become committed, although continued commitment during the early employment period may be more sensitive to actual job experiences than initial expectations (or any comparison between the two).

Job Choice Factors

Research on job choice in organizations has traditionally focused on the factors causing employees to select one job over another. More recently, research has investigated the implications of job choice and the circumstances surrounding the choice process for subsequent attitudes toward the job. In an early study, Vroom and Deci (1971) found that graduate students from a business school systematically reevaluated job alternatives following their choice. The chosen job was rated as more attractive and more likely to lead to the attainment of goals the student valued highly after the choice had been made than before the decision. Moreover, unchosen job alternatives were evaluated more negatively following job choice than before. In interpreting these results, it is important to recognize that students had little or no additional information about the jobs following their choice than they had before a decision was made. Similar research findings have been reported by

Lawler, Kuleck, Rhode, and Sorensen (1975) in a study of accounting students. As predicted by dissonance theory (Festinger, 1957), these two studies suggest that the act of selecting a job may influence the new hires' attitudes toward the job, at least initially.

More recent research and theory have attempted to refine the general predictions made by dissonance theory. More specifically, several investigators have attempted to identify the circumstances surrounding the selection of a job that are likely to lead to a high commitment to the choice. Salancik (1977) has identified several important characteristics of behaviors that make them committing. First, the decision or behavior must be explicit. In other words, the act is unequivocal and observable to others. Second, the choice must be difficult to revoke or change. Third, the decision is public in the sense that it is widely known to others. Finally, the decision or behavior must have been freely engaged in. Freedom of choice is increased when the individual has several alternatives from which to choose and there is limited external pressure to choose one alternative over another. When job choices are characterized by these factors, Salancik (1977) predicts that individuals will become behaviorally committed to their decision. Moreover, individuals will develop more positive attitudes toward their chosen job in an effort to justify their decision. As suggested earlier, decisions characterized by high behavioral commitment should also lead to greater attitudinal commitment.

Two studies are available which have examined the predicted relationship between behavioral commitment in job choice and subsequent attitudinal commitment to the organization. Mowday and McDade (1979) found commitment for new hires the first day at work positively related to the amount and accuracy of information about the job, two factors which were thought to influence per-

ceived freedom of choice. Contrary to predictions, commitment was also positively related to several variables reflecting the perceived revocability of the choice (i.e., intended length of tenure, perceived ease of transfer to another job within the organization, and perceived ease of finding another job in a different organization). In other words, high initial commitment was more likely to be associated with revocability of the job choice than irrevocability.

In a second study, O'Reilly and Caldwell (1980b) studied job choices made by MBA students and their attitudes after six months at work. They found attitudinal commitment to the organization after six months was positively related to both perceived freedom and irrevocability at the time the job choice was made. No significant relationships were found between commitment and either explicitness or public knowledge of the job choice. In their study, behavioral commitment features associated with job choice accounted for 12% of the variance in organizational commitments after six months at work. It should be noted that O'Reilly and Caldwell's (1980b) study differed from the research of Mowday and McDade (1979) in that only six month commitment was measured. It is possible that if O'Reilly and Caldwell (1980) had measured first day commitment, however, even stronger relationships would have been found. Mowday and McDade (1979) reported that their behavioral commitment items accounted for 40% of the variance in first day commitment, although common methods may have inflated this percentage.

Another set of findings emerging from these two studies suggest that the amount of external justification individuals have for their job choice may influence subsequent commitment. O'Reilly and Caldwell (1980b) found high levels of commitment among students who reported taking a job that did not offer the highest salary and who also felt they made other sacrifices

to take the job. Similar but somewhat more complex results were reported by Mowday and McDade (1979). They found that the attractiveness of alternative job offers received by the individuals but foregone was negatively related to commitment the first day at work, although this relationship became positive when commitment was measured after one month. This finding suggests that passing-up attractive alternatives may have caused individuals to question their job choice the first day at work. After one month on the job, however, these same individuals appear to have engaged in post-decision justification of their job choice by bolstering attitudes, similar to the pattern of findings among the MBA students studied by O'Reilly and Caldwell (1980b). In general, it might be predicted that low extrinsic justification and sacrifices in job choice are associated with higher commitment after the choice is made. In a related finding, O'Reilly and Caldwell (1980a) reported that individuals who were intrinsically motivated in their job choice were more committed than those whose choice was extrinsically motivated.

The results of these studies suggest that the circumstances associated with the new hire's decision to join the organization may have important implications for his or her organizational commitment. The study by Mowday and McDade (1979) suggests individuals who make job choices that are behaviorally committing enter the organization with a greater propensity to become attitudinally committed, while O'Reilly and Caldwell's (1980b) findings suggest these effects may persist up to six months on the job. Both studies also suggest that insufficient justification and sacrifices made in the decision to join an organization may lead to greater commitment. These findings provide empirical support for the hypothesized relationship between committing behaviors and attitudinal commitment to the organization (cf., Staw, 1977).

In summary, the research in this section has examined several different factors that may cause new employees to enter organizations with a high level of commitment. The model of antecedents of first day commitment that emerges from the discussion is presented in Exhibit 3. Initial commitment to the organization appears to be influenced by personal characteristics, expectations, and the decision to join the organization. It is also suggested that interrelationships exist among the different sets of variables that may lead to initial commitment. Mowday and McDade (1980), for example, found that individuals who made behaviorally committing job choices also reported higher expectations about the job.

While the commitment of new employees their first day in the organization is considered important (cf., Porter et al, 1976), it should also be recognized that commitment at this stage probably does not represent a very stable attachment to the organization. Rather, the commitment level a new employee brings to the job may be interpreted in terms of the propensity to develop a longer-term commitment to the organization. First day commitment may be the initial step in a much longer process through which employees develop a stable attachment to the organization. Whether or not new employees who bring a high level of commitment to the organization continue to maintain high commitment, however, may depend to a large extent upon their initial job experiences. The influence of initial job experiences on continuing commitment to the organization will be discussed in the next section.

INITIATION: EARLY EMPLOYMENT INFLUENCES ON ORGANIZATIONAL COMMITMENT

The first several months that a new hire spends in the organization is thought to be a particularly crucial time in the development of lasting attitudes and expectations (cf., Hall, 1976). This time provides the new hire

with his or her first direct experience with the new organization, job, supervisor and co-workers. While prior to entry the new hire had only expectations about what the job might be like, the first several months provide first hand experience. Studies of the early employment period suggest the type of experiences provided new employees on their first job can influence success in the organization up to several years later (Bray et al., 1974; Berlew & Hall, 1966). Moreover, most new employees who eventually leave the organization will actually terminate during the first six months to one year on the job (Wanous, 1980). The experiences of new employees shortly after joining the organization therefore appear crucial to the development of lasting commitment.

Influences on organizational commitment during the early employment period are numerous, as suggested by the discussion of antecedents of commitment in the previous chapter. To simplify the discussion, these influences will be categorized as personal, organizational, or non-organizational. They are summarized in Exhibit 4.

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Personal Influences

As suggested earlier, the characteristics that individual employees bring to the organization represent potentially important influences on commitment. One characteristic that has already been considered is the level of commitment of new employees their first day at work. First day commitment was interpreted as a propensity to develop more stable attachment. Although research is limited, there is some evidence that employees who enter the organization with a high level of commitment tend to maintain commitment at a high level through the first several months of employment. Mowday and McDade

(1980), for example, found first day commitment related to commitment after one month on the job ($r = .19$, $p < .05$). The strength of the relationship between first day commitment and commitment at three months was about the same ($r = .21$), although this correlation was not significant due to a decrease in sample size. Crampon, Mowday, Porter, and Smith (1977) found rather stable means for commitment across the first nine months of employment for a sample of retail management trainees. In this sample, new hires that eventually stayed with the organization had a higher first day commitment than eventual leavers. Moreover, the level of commitment for stayers was relatively stable across the first 15 months of employment, while commitment for leavers increased during the first month and then decreased shortly before leaving (also see Porter et al, 1976).

The importance of first day commitment in the development of greater commitment during the early employment period may be understood in terms of behaviors new employees are likely to engage in. Individuals who enter the organization with high levels of commitment may be more likely to put forth extra effort, volunteer for tasks, and take on added responsibilities. To the extent the new employees freely choose to engage in behaviors beyond those expected, the behaviors themselves may be *committing* and thus reinforce the commitment cycle. The new employee who puts in extra hours learning the job or who completes a task ahead of schedule, for example, may justify these behaviors by even more positive attitudes in the future. Such a reinforcing commitment cycle may be particularly likely when few extrinsic inducements are provided for behaviors that exceed the organization's expectations.

The likelihood of developing a self-reinforcing cycle of commitment, however, is largely dependent upon the opportunity to engage in behaviors that are committing. In other words, the opportunities provided to new employees

are crucial in determining whether initially high levels of commitment are translated into more stable attachments. The nature of the job opportunities that are most likely to induce increasing commitment are discussed in the next section.

Organizational Influences

Steers et al. (1981) noted a number of job and work environment characteristics that have been found to be related to commitment were reviewed. Although most of these studies did not examine the development of commitment during the first few months of employment, it is likely that many of the characteristics related to commitment during later years on the job are relevant to commitment during the early employment period as well. Previous research on the antecedents of commitment, however, has often lacked theoretical focus. In other words, it is sometimes difficult to discern why a particular job or work environment factor should be related to commitment. The general theoretical ambiguity associated with most previous research on commitment is evident when it is considered that many, if not all, of the antecedents of commitment have also been investigated as determinants of job satisfaction. Before a theory of commitment can be developed that differentiates this construct from other job-related attitudes, it is necessary to identify a conceptual model which helps integrate and tie together previous research into a more coherent framework.

Salancik (1977) has proposed one framework that helps integrate previous research. In general, he proposed that "any characteristic of a person's job situation which reduces his felt responsibility will reduce his commitment" (Salancik, 1977, p. 17). The key determinants of commitment are therefore found in characteristics of the job and work environment that increase the

employee's felt responsibility. From a behavioral perspective, felt responsibility induces employees to become more behaviorally involved in the job. Greater behavioral involvement should, other factors held constant, lead to greater attitudinal commitment as employees develop attitudes consistent with their behavior. From an inducements-contributions perspective (March & Simon, 1958), however, it should also be noted that felt responsibility may increase employee contributions to the organization. From this perspective, whether high contributions lead to high commitment depends upon the level of inducements provided for employees. March and Simon (1958) suggest that high commitment is most likely to occur when the inducements offered employees match their contributions. In contrast, those working in the behavioral commitment tradition suggest that high commitment may be more likely to follow when contributions exceed inducements (e.g., the case of insufficient justification). As we shall see, the general prediction that felt responsibility increases employee commitment becomes a good deal more complex when the role of inducements and external job alternatives are considered. Research evidence suggests that employee commitment to the organization may be the result of complex interactions between job-related and external factors. This complex interaction will be discussed in a separate section dealing with non-organizational influences on commitment.

In this section several characteristics of the job and work environment that may serve to increase felt responsibility will be identified.

Job characteristics. It has commonly been found that job scope is positively related to organizational commitment (Buchanan, 1974; Marsh & Mannari, 1977; Stevens et al, 1978; Steers, 1977). When job scope is viewed as a summary construct composed of separate task dimensions such as variety, autonomy, challenge, significance, and feedback, it is clear why higher levels of commit-

ment are generally found among employees on higher scope jobs. Such task characteristics as autonomy, challenge, and significance may serve to increase the behavioral involvement of employees in their job and thus increase their felt responsibility. Another task characteristic that may be expected to foster commitment is task interdependence (Salancik, 1977). Felt responsibility generally increases among employees when tasks are interdependent (i.e., employees depend upon each other in the performance of their jobs). Morris and Steers (1980), for example, found that commitment was positively related to functional dependence among work roles.

Supervision. In general, high levels of employee commitment should be associated with supervision that is not overly tight or close (Salancik, 1977). Supervisors who allow their employees greater discretion over how the job is performed increase the employee's felt responsibility. Although this prediction may appear to conflict with the positive relationship that has been found between leader initiating structure and commitment (Brief et al, 1976; Morris & Sherman, 1980), this conflict may be more apparent than real. Leader initiating structure can involve clarifying job expectations for employees and setting clear task goals, both of which may increase the employee's felt responsibility on the job. In addition, it would be expected that felt responsibility and thus commitment would increase when supervisors allow employees to actively participate in decision making on the job (Rhodes & Steers, in press) and organizations are characterized by a high degree of decentralization (Morris & Steers, 1980).

Work group. Group cohesiveness is generally associated with a high degree of interaction and felt responsibility among members of the group (Cartwright, 1968). High levels of interaction among members of the group is likely to lead to greater social involvement in the organization. The

degree of social involvement of employees in organizations has been found to be positively related to commitment in several studies (Buchanan, 1974; Rotondi, 1975; Sheldon, 1971). Previous research has also found organizational commitment is positively related to positive group attitudes toward the organization and group norms about hard work. While general relationships between commitment and group attitudes and norms have been found, we would expect these relationships to be particularly strong in cohesive groups since such groups are better able to insure member compliance with group beliefs and norms.

Pay. Because pay provides an important inducement for employees to remain members of organizations, it might be predicted that level of pay would be positively related to commitment, particularly where employee contributions are high. Empirical support for such a prediction is weak. Some data suggest better paying positions are not necessarily associated with higher commitment in organizations. In addition, there is some research to suggest that perceived equity of pay may be a more important determinant of commitment than level of pay (Rhodes & Steers, in press). There are also theoretical reasons to doubt that level of pay will always be associated with high commitment. Salancik (1977) suggested that level of rewards influences the perceived instrumentality of work. Moreover, he suggested that when instrumental rewards for work are salient it reduces the employee's felt responsibility. This follows from the view that salient extrinsic rewards provide external justification for engaging in the task and lower the need for employees to provide internal justification for task involvement. More will be said about the role of extrinsic rewards in the section on non-organizational influences on commitment.

One interesting example of how pay systems may serve to enhance organizational commitment is provided by Eastern Air Lines ("The Spirited Turnaround," 1979). Faced with high current and long-term liabilities, Eastern asked its employees to voluntarily contribute 3.5% of their salaries to a fund that would insure the company netted 2% of its gross revenue. As described by Charles J. Simons, Eastern's executive vice-president and vice-chairman, the fund works as follows:

> Take a hypothetical example of a man earning $100 a month. We carry on the books that we paid him $100 but actually pay him only $96.50. If at the end of the year we make our 2%, we pay him 12 times the $3.50 that was in escrow; if we fall short, we have that cushion to bring our net up to the target amount.

In addition, Eastern employees were also given an incentive. They could share in one-third of the net profits above the 2%, up to 103.5% of their salaries. The fact that this deal was not entirely equitable from the employee's perspective was made explicitly clear (i.e., employees could share in 100% of any shortfall but only 33% of any profits). In spite of this, Eastern's 32,000 employees and leadership of the union accepted the plan.

What makes this example particularly interesting is that it has many of the elements of behavioral commitment discussed by Salancik (1977). For example, the plan was voluntarily accepted by Eastern's employees. Moreover, the inequitable nature of the arrangement was made clear to employees before they accepted. The potential negative consequences of the arrangement were made known in advance and employees may not have felt there was sufficient justification for entering into such an agreement. It would be predicted that the employees at Eastern should become behaviorally committed to their decision and ultimately become more attitudinally committed to the organization. This appears to be exactly what happened. The productivity of Eastern employees increased after the agreement and the company recorded record earnings.

While many factors in this example may account for the increased effectiveness of Eastern Airlines, the unique pay system implemented in this organization suggests one way in which employee commitment to the organization can be enhanced. In general, any reward system in which employees share in the success of the firm through profit sharing or stock options should serve to increase the felt responsibility of employees and thus their commitment to the organization. This effect may be particularly pronounced when, as in the case of Eastern, employees voluntarily agree to share in both the success of the firm (e.g., profits) and some of the failures (e.g., losses).

Organization characteristics. Several organization characteristics that have been found to be positively related to commitment have already been mentioned (e.g., functional dependence, decentralization). In addition, Rhodes and Steers (in press) found that employee ownership of organizations was positively related to commitment. This finding is consistent with Salancik's (1977) view that felt responsibility on the part of employees (which would undoubtedly be higher when employees hold stock or ownership shares in the organization) leads to greater commitment. In addition, several studies have found commitment is related to organization dependability or the extent to which organizations are viewed as looking after the best interest of employees (Buchanan, 1974; Steers, 1977a). This finding suggests a reciprocation norm in which employees develop greater feelings of responsibility when organizations are viewed as caring about employee well-being. The paternalistic management practices and job security found in Japanese organizations, for example, have often been cited as one factor leading to high levels of commitment among Japanese employees (cf., Marsh & Mannari, 1977).

The discussion of organizational influences on commitment during the early employment period would not be complete without mentioning socialization processes organizations establish for their new members. The socialization practices of organizations provide the stimulus for creation of employee attachment to the organization through many of the mechanisms discussed above. In some organizations, socialization of new members may be more or less random and unplanned. In other organizations, however, newcomers are introduced to the organization through a carefully planned series of steps and experiences designed to transmit important values and norms about behavior. Despite the importance of socialization practices in organizations, we currently have a poor understanding of how specific socialization practices influence employee commitment. In one interesting study, Kanter (1972) investigated commitment mechanisms used by communes and utopian communities. She found that such total organizations elicit high levels of commitment among their members by requiring explicit sacrifices to become a member, investments in terms of resources or time and energy, public renunciation of previous social relationships, and mortifying experiences designed to increase the dependence of the individual on the group. More recently, VanMaanen and Schein (1979) identified several dimensions along which the socialization practices of organizations may differ and how specific practices may influence employee responses. Although not addressing the issue of employee commitment specifically, they suggested that unquestioning acceptance by newcomers of their new role is more likely when certain socialization practices are followed:

> ...the conditions which stimulate a custodial orientation derive from processes which involve the recruit in a definite series of cumulative stages (sequential); without set timetables for

> matric· .tion from one stage to the next, thus implying that boundary passages will be denied the recruit unless certain criteria have been met (variable); involving role models who set the "correct" example for the recruit (serial); and processes which, through various means, involve the recruit's redefinition of self around certain recognized organizational values (divestiture).
> (p. 253)

The propositions set forth by VanMaanen and Schein (1979) suggest several interesting areas of inquiry concerning the development of commitment during the early employment period. Additional research will be required, however, before firm conclusions can be drawn about the influence of socialization practices on employee commitment.

Non-organizational factors

Although attitudinal commitment of employees is likely to be largely influenced by characteristics of the organization in which they are employed, commitment levels can also be influenced by characteristics of other organizations in which they might be employed. This follows from Thibaut and Kelley's (1959) early suggestion that satisfaction with a group is dependent upon both the individual's evaluation of the group (comparison level) and evaluation of alternative groups he or she might join (comparison level for alternatives). In general, the availability of attractive alternative job opportunities should result in less positive attitudes toward the job and organization (O'Reilly & Caldwell, 1980b; Pfeffer & Lawler, 1980). Research evidence suggests, however, that the availability of alternative jobs (i.e., revocability of job choice) may interact with both the circumstances surrounding job choice and the sufficiency of extrinsic rewards provided by the organization in influencing commitment.

O'Reilly and Caldwell (1980b) found that MBA students who had not taken the job offer with the highest salary (insufficient justification for job choice) reported significantly higher commitment after six months when no alternative job offers had been received since joining the organization than when alternative jobs were available. In contrast, students who had accepted the job offer with the highest salary (sufficient justification for job choice) reported similar levels of commitment when both alternative job offers had and had not been received. In interpreting this finding, it appears that new employees who had insufficient justification for their original job choice had a greater need to justify their decision to join the organization. This need was greatest when the decision was not easily revoked (no alternative job offers received), resulting in higher commitment to the organization. O'Reilly and Caldwell's (1980b) findings suggest that the highest levels of initial commitment may be found among new employees who had insufficient justification for their job choice and who subsequently find their decision cannot easily be changed.

Using data collected among university and college faculty by the Carnegie Council on Higher Education, Pfeffer and Lawler (1980) also found evidence of a complex interaction when the effects of alternative job offers on attitudes toward the organization were considered. In their study, sufficient justification for employment reflected the level of extrinsic rewards (pay) provided by the organization. They found that level of extrinsic rewards was positively related to attitudes only for faculty who had received alternative job offers. No relationship was found between extrinsic rewards and attitudes among faculty who had not received job offers from other institutions. This finding suggests that receiving job offers from other organizations may make the level of pay available in the present job salient to employees. Employees who do not re-

ceive offers of alternative employment, however, may be far less sensitive to the level of extrinsic rewards provided by the organization.

While it is difficult to integrate the results of these two studies since common variables were defined differently, both suggest that the availability of alternative job opportunities may not affect all employees in the same fashion. Rather, the availability of alternative employment appears to influence the employee's need to justify their original job choice and make salient extrinsic rewards provided by the organization. For organizations operating in competitive job markets (e.g., engineering), high levels of commitment are most likely to be maintained by providing employees with high levels of extrinsic rewards.

In summary, this discussion in this section has focused on the development of commitment during the first few months of employment in the organization. The discussion is summarized in Exhibit 4. Three broad sets of influences on commitment during the period can be identified. First, individuals are thought to enter organizations with different levels of propensity to become committed. The initial level of commitment reported by new employees their first day at work appears to be a function of personal characteristics, expectations about the job, and the circumstances associated with job choice. Second, the job-related experiences of new employees during the first several months of employment have a major influence on the development of commitment. The discussion of these experiences was organized around Salancik's (1977) view that factors which serve to increase the employee's felt responsibility to the organization lead to higher levels of commitment. Such factors were discussed in terms of job characteristics, supervision, work groups, pay, and characteristics of the organization. Finally, non-organizational influences on employee commitment were considered. In general, it was suggested that the

availability of alternative job opportunities would lead to less positive attitudes, although this influence may result from more complex interactions between job offers and job-related factors.

While the commitment process extends beyond the early employment period, the development of commitment during the first few months of employment appears particularly important to the continued attachment of employees. Most new employees who eventually leave the organization will actually terminate within the first six months to one year on the job (Wanous, 1980). The development of organizational commitment during the first several months decreases the likelihood of early termination. Moreover, the commitment levels of new employees appear to stabilize beyond the first month or so of employment. Mowday and McDade (1980) found commitment at one month highly related to commitment after three months of employment ($r = .83$). In addition, Crampon et al (1977) reported test-retest correlations between commitment at four and six months and between commitment at six and nine months of $r = .72$ and .62, respectively. Although levels of commitment developed during the early employment period appear to stabilize, it is also apparent that the development of organizational commitment is a process which continues through subsequent years of employment. Factors which influence the development of commitment beyond the early employment period will be considered in the next section.

ENTRENCHMENT: CONTINUING COMMITMENT TO ORGANIZATIONS

Previous research suggests that one of the strongest predictors of commitment is tenure in the organization. The longer an employee works in the organization, the more likely they are to report high levels of commitment (Angle & Perry, 1981; Brown, 1969; Hall et al, 1970; Hrebiniak, 1974; Lee, 1971; Morris & Sherman, 1980; Sheldon, 1971). A number of explanations can be offered

for why continued employment is a strong influence on the development of commitment. The discussion is summarized in Exhibit 5.

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Insert Exhibit 5 About Here
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First, length of service increases the likelihood that employees will receive more challenging job assignments, be given greater autonomy and discretion at work, and receive higher levels of extrinsic rewards. In general, higher tenure employees hold more desirable positions than lower tenure employees. The positive features of jobs that lead to commitment during the early employment period may also facilitate commitment for employees with longer service.

Second, investments made by the employee in the organization may also increase with length of service. Increasing investments in the form of time and energy may make it increasingly difficult for employees to voluntarily leave their job, although this tendency may differ across occupations (e.g., young accountants may often join auditing firms for five to ten years with the goal of gaining experience that will allow them to later move to corporate accounting positions).

Third, increasing length of service also brings increasing social involvement in the organization and community. For many individuals, work provides the basis upon which social relationships off-the-job are formed. Many people socialize with co-workers and may hesitate to jeopardize these relationships by moving to another job. In addition, both the employee and members of his or her family develop increasing social involvement in the community. As social relationships on the job and in the community grow stronger, the probability of leaving the organization, particularly to take a job in another city, may grow more remote.

Fourth, increasing length of tenure in an organization may serve to decrease the employee's job mobility. Some individuals develop specialized roles in organizations with job skills that would be difficult to transfer (Salancik, 1977). In addition, the availability of alternative jobs may decrease with age. Even with state and federal laws concerning age discrimination, many organizations may hesitate to hire older workers whose length of contribution to the organization will necessarily be brief.

Finally, increasing length of service may have a more subtle influence on the development of commitment. Tenure in an organization has associated opportunity costs, even though they may not be apparent to employees at early or mid-career stages. The individual who has sold insurance for one organization for 25 years, for example, may suddenly come to realize that his or her dream of becoming a teacher is no longer feasible. Alternatively, employees who have neglected their family to pursue actively a career may come to realize that the opportunity to develop close relationships with their children and watch them grow has passed. Most employees have goals or aspirations in life that will never be attained. Increasing investments in a job and organization for most people involve the sacrifice of other important goals. In order to justify this sacrifice, attitudes toward the organization may become more positive. In other words, increasing commitment with length of service may be one way individuals rationalize their decision to forego some important goals in the pursuit of others.

As Salancik (1977) has suggested, interpreting relationships between organizational commitment and tenure is difficult because so many factors may covary with length of service. In the brief discussion above, it was suggested that length of service may be associated with increasing investments and social involvements, decreased mobility, and sacrifices. Each of these factors, alone

or in combination, may serve to strengthen commitment to the organization. These relationships are summarized in Exhibit 5.

LONGITUDINAL STUDIES OF THE COMMITMENT PROCESS

As suggested at the beginning of this paper, the process of becoming committed to an organization may involve relationships between attitudes, perceptions, and behaviors that grow stronger over time. Individuals who make behaviorally committing job choices, for example, may enter organizations with higher initial commitment and subsequently engage in committing behaviors on the job. The commitment process may be characterized by increasing consistency between attitudes, perceptions, and behaviors as length of service in the organization increases. Although empirical evidence on reciprocal relationships between attitudes, perceptions, and behaviors is limited, two unpublished studies provide data which highlight this process. These studies will be discussed in this section.

Retail Management Trainees

Crampon et al (1977) conducted additional analyses on data collected from a sample originally reported by Porter et al (1976). Participants in the study were management trainees entering a large retailing organization. Most of the trainees were male and were entering their first full-time job after graduating from college. Each trainee was assigned to one of 12 training centers for the first 9 to 12 months of employment in the organization. The training centers were regular retail stores that had a training director responsible for supervising training. After completing training, trainees were assigned to a management position in one of the organization's stores.

Data were collected from trainees at regular intervals during their first 15 months of employment. Data collection began the first day the trainees

entered the organization and questionnaires were again distributed after 2 weeks and 2, 4, 6, 9, 12, and 15 months of employment. The relationships reported by Crampon et al (1977) of particular interest were between attitudinal commitment to the organization as measured by Porter's scale and rated job performance. The performance of each trainee was rated by a training director after 4, 6, and 9 months of employment. The repeated-measures nature of this study makes possible cross-lag correlations between commitment and performance at three points in time.

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Insert Exhibit 6 About Here
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The pattern of correlations emerging from the cross-lag analyses suggests reciprocal relationships between commitment and performance across the five month period. Organizational commitment measured at four months was more strongly related to job performance at six months ($r = .36$, $p < .05$) than the alternative causal relationship ($r = .00$). The difference between these correlations was significant. In contrast, job performance at six months was a better predictor of commitment at nine months ($r = .33$, $p < .05$) than commitment at six months predicted performance at nine months ($r = .15$), although the difference between correlations failed to reach significance. Moreover, the cross-lag correlations were generally larger than the concurrent relationships between commitment and performance at each of the three points in time.

Although the results of this study must be interpreted with caution due to small sample size ($N = 46$) and marginal difference in correlations at the later time period, the pattern of correlations suggests the following sequential relationships between commitment and performance: commitment → job performance → commitment. This pattern of results is consistent with the view that attitudinal commitment leads employees to engage in committing behaviors

on the job which, in turn, result in higher subsequent attitudinal commitment.

Hospital Employees

The second study which has longitudinally examined the development of organizational commitment during the early employment period was reported by Mowday and McDade (1980). They studied newly hired employees in two large state-run custodial hospitals. Participants in the study were primarily females hired for lower-level patient care positions. Due to the relatively routine nature of these jobs, training was primarily provided on-the-job. Newly hired employees reported for an orientation session their first morning at work and were then assigned to a ward in the hospital.

Questionnaire data were collected from this sample during the orientation session and again after 1 and 3 months of employment. This study focused on the expectations and initial commitment brought by new hires to the job and the influence of these variables on later commitment and job perceptions. The relationships to be considered here concern attitudinal commitment to the organization and expected and perceived job challenge. Job challenge during the early employment period is of particular interest since previous research has suggested it is an important determinant of later success in the organization (Bray et al, 1974). The longitudinal nature of this study allows cross-lag correlations to be calculated between commitment and job challenge measured at three points in time over a three month period. The correlations are presented in Exhibit 7.

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Insert Exhibit 7 About Here
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The results suggest that expected job challenge the first day at work was a better predictor of commitment after one month ($r = .19$, $p < .05$) than com-

mitment the first day predicted perceived job challenge at one month ($r = .02$). In contrast, commitment at one month was a better predictor of perceived job challenge at three months than the alternative causal relationship ($r = .67$ vs. $.54$). As with the previous study, these results must be interpreted with caution since the sample size was small ($n = 43$) and differences between correlations were not significant. In addition, concurrent correlations were generally large and commitment at one month was predicted equally well by expected job challenge and commitment the first day.

Keeping these study limitations in mind, the pattern of correlations suggests a sequential relationship in which expected job challenge → attitudinal commitment → perceived job challenge. Moreover, the strength of these relationships appeared to grow stronger over time. Considering relationships between commitment and other variables that were measured in addition to job challenge (but that did not always exhibit the same pattern of results), it was found that the median cross-lag correlation between the first day and one month measures was $r = .01$ while the median cross-lag correlation between the one and three month measures was $r = .46$. Mowday and McDade (1980) generally reported low relationships between measures taken on the first day and again at one month. Between one and three months, however, relatively strong relationships were found between all of the measures. They interpreted this finding as indicating that relationships between commitment and perceptions of the job had started to stabilize after the first month of employment, while the first month attitude-expectation/perception relationships were generally low and unstable. In this particular study the first month of employment appeared to be a particularly volatile period in the development of attitudes and commitment.

In summary, design limitations and the sometimes marginal findings associated with the two studies reviewed in this section indicate these results must be intepreted with caution. However, both studies do offer a suggestive view of the process through which commitment is developed during the early employment period. The first study suggested a pattern of sequential relationships in which commitment attitudes → behavior → commitment attitudes, while the second study suggested a sequence in which job expectations → commitment attitudes → job perceptions. Moreover, the second study suggested that commitment and perceptions had become much more consistent between the first and third months of employment. The sequential pattern of relationships found in these studies suggests commitment may develop through a self-reinforcing cycle similar to the process suggested in Exhibit 2. Commitment appears to influence other variables which, in turn, influence subsequent commitment. Whether future research finds that commitment → behavior or vice versa may depend more on the particular point in time that a study enters the process than any underlying causal relationships. When sufficient measurement periods are included in future research designs, it appears likely, based on these two studies, that the cyclical nature of the relationships proposed here will be found.

ORGANIZATIONAL COMMITMENT: A FUTURE RESEARCH AGENDA

This paper has attempted to place the discussion of commitment and its correlates within the context of a process which may develop across different career stages. Judging from the number of studies available in the literature, organizational commitment is a concept that has attracted considerable attention. Interest in organizational commitment is likely to increase in the future as our concern for quality of working life and the basic relationship

between employees and organizations grows. Additional work of both a theoretical and empirical nature will be required before a full understanding can be developed of the conditions that foster employee commitment and the processes through which organizational commitment grows. The success of future research in increasing our understanding of organizational commitment, however, is less likely to depend upon the amount of research interest generated in this area than the direction this research may take. Because the questions asked in future research on commitment will be crucial to our understanding of the concept, it is useful to summarize several areas of study that appear particularly important.

Agenda item #1. Despite a number of studies on commitment in organizations, our understanding of the commitment process remains largely speculative. As noted previously, most research on commitment has been cross-sectional in design. Causal relationships hypothesized in previous research on the antecedents of commitment have largely been limited to inferences based on theory or intuition (e.g., it is intuitively unlikely that high levels of commitment lead to lower educational attainment). Although some studies have reported multiple measures of commitment (e.g., VanMaanen, 1975), the two studies reviewed in the previous section are among the few that have examined relationships between commitment and other variables across time. What is needed if progress is to be made in our theoretical understanding of the commitment process are additional longitudinal studies which view commitment as a process that develops over time. While static correlational analyses have contributed to our understanding of the types of variables that may be related to commitment, the pay-off from additional studies of this type appears to be minimal. Researchers interested in commitment must show a greater willingness to undertake longitudinal investigations if our understanding of commitment is to increase.

Agenda item #2. In addition to the need for longitudinal investigations, there is also a need to expand the area of inquiry into antecedents of commitment. Studies which have correlated commitment with behaviors, for example, have most often viewed behavior as a consequence rather than antecedent of commitment. A number of studies are available which have examined the influence of commitment on such behaviors as turnover, absenteeism, and job performance (Mowday et al, 1979). It would be useful if future research also conceptualizes specific behaviors as a cause of commitment. Several studies on the circumstances surrounding job choice have shown that the behavior of selecting among alternative jobs can influence subsequent commitment, in one study up to six months after employment in the organization (O'Reilly & Caldwell, 1980b). The influence of additional behaviors on commitment also need to be investigated. For example, it might be predicted that new employees who volunteer to work on weekends or take extra job assignments would become more committed to the organization, particularly in the absence of extrinsic inducements to engage in such behavior. Research which focuses on job-related behaviors leading to commitment will help integrate the behavioral and attitudinal approaches to the study of commitment that have emerged in previous theory.

Agenda item #3. Another potentially important area for future inquiry can be found in more complex predictions between variables that are thought to influence commitment. The need for achievement, for example, has been found to have a direct influence on commitment in several studies (e.g., Steers, 1977). It is probable, however, that employees who bring a high need for achievement to the job situation will only become committed if the job provides the opportunity to satisfy this need. In other words, employee needs such as achievement may interact with characteristics of the job to

influence commitment. The highest levels of commitment, for example, may be found among high need achievers who are placed on jobs that are challenging, provide some autonomy in how the work is performed, and provide frequent and concrete feedback about task performance. Previous research has generally failed to consider more complex interactions between variables in relationship to commitment, although such interactions appear to be important.

Agenda item #4. While most of the longitudinal studies of commitment have focused on the early employment period, there is a need to consider the development of commitment at mid- and late-career stages as well. Buchanan (1974) suggested that influences on commitment may differ across employees at different career stages. With the exception of his exploratory investigation, few researchers have pursued this possibility. Research has continued to focus on the early employment period, perhaps because the first few months in the organization have been found to be particularly important and attitudes undergo rapid changes. However, the importance of the early employment period should not cause us to neglect the continuing development of commitment as length of service in the organization increases.

Agenda items #5. Another question of some importance concerns multiple commitments employees in organizations may hold. Separate areas of research inquiry have examined commitments to different referents such as the job, organization, career, and non-work factors. However, few studies have simultaneously examined the impact of multiple commitments on employees. Dubin, Champoux and Porter (1975) found that employees who were committed to the organization were also more likely to identify work as a central life interest. In a recent study, Weiner and Vardi (1980) reported positive relationships between commitment to the job, organization, and career among

a sample of employees in diverse occupations. However, there is some suggestion in the literature that commitment to one area of an individual's life may prevent commitment to other areas (e.g., Gouldner, 1958). The employee who is highly committed to family and community activities, for example, may be less likely to develop strong commitments to the job or organization. The influence of multiple commitments and the conflicts they may create for employees represent an important area for future research.

Summary

Employee commitment to organizations is a topic that has generated considerable research interest in the past and is likely to be given increasing attention in the future. The literature reviewed in this paper suggests that a great deal is already known about individual and job-related factors associated with employee commitment. In contrast to the largely bivariate correlational tradition of most research on commitment, this paper attempted to examine commitment as a process that develops slowly over time. The commitment process was viewed as something which may begin before employees enter organizations and extend across the career of the individual in the organization. While some research is available that has examined the development of commitment during the early employment period, relatively few studies have systematically incorporated a process approach to the investigation commitment. The discussion in this paper suggests that different factors may influence employee commitment at various career stages. Moreover, the development of commitment may be a cyclical process in which attitudes and behaviors relevant to commitment continuously reinforce each other. Additional research will be needed before a comprehensive understanding of the commitment process can be developed. One goal of this paper is to urge

researchers to move away from studies conducted at one point in time and toward research which examines relationships between commitment and other variables longitudinally.

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Pre-Entry Stage	Early Employment Period Stage	Middle and Late Career Stages
Anticipation	*Initiation*	*Entrenchment*

Exhibit 1. Stages in the development of organizational commitment.

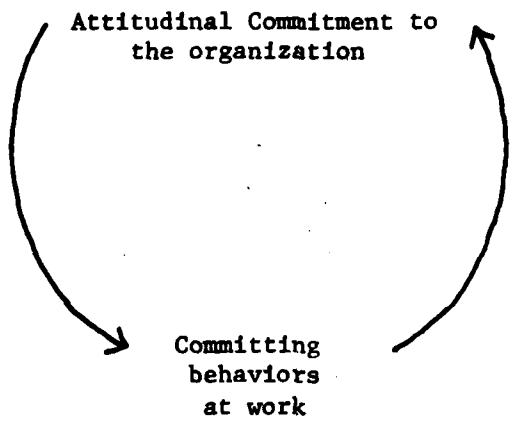


Exhibit 2 Reciprocal influences between attitudinal and behavioral commitment.

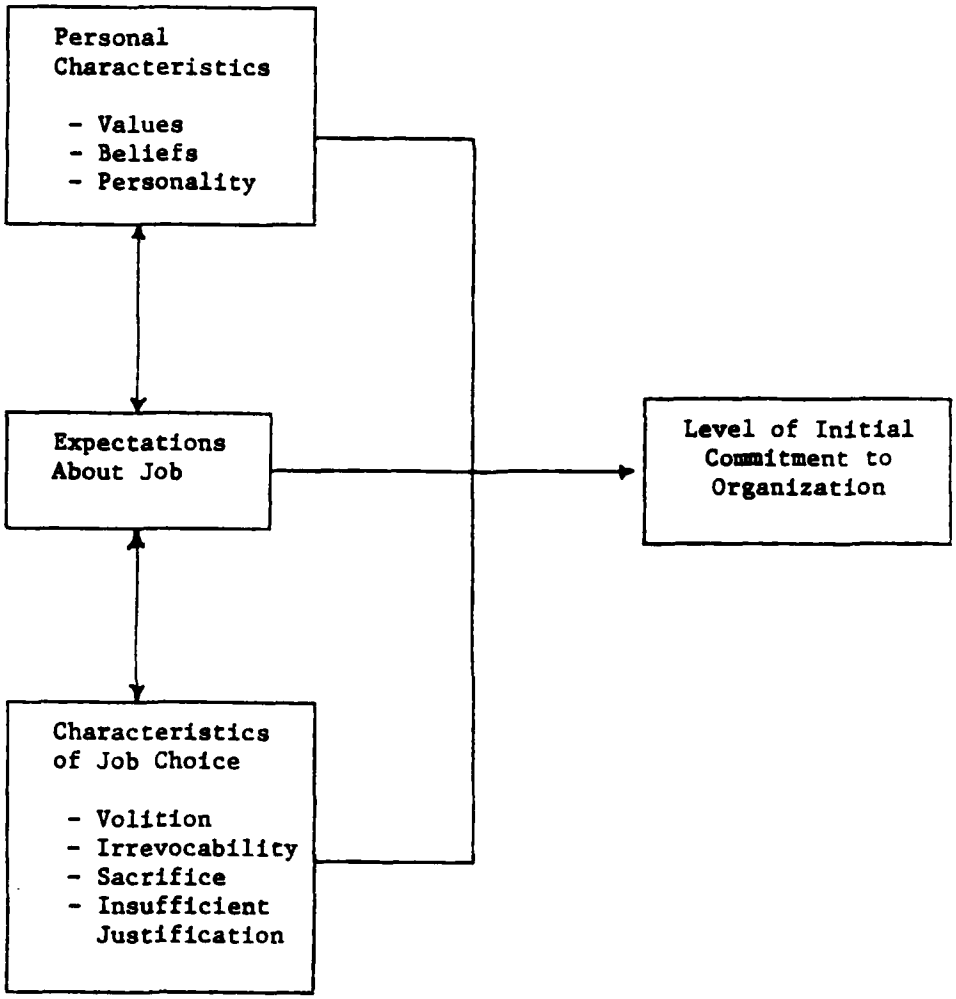


Exhibit 3. Major determinants of initial commitment to the organization.

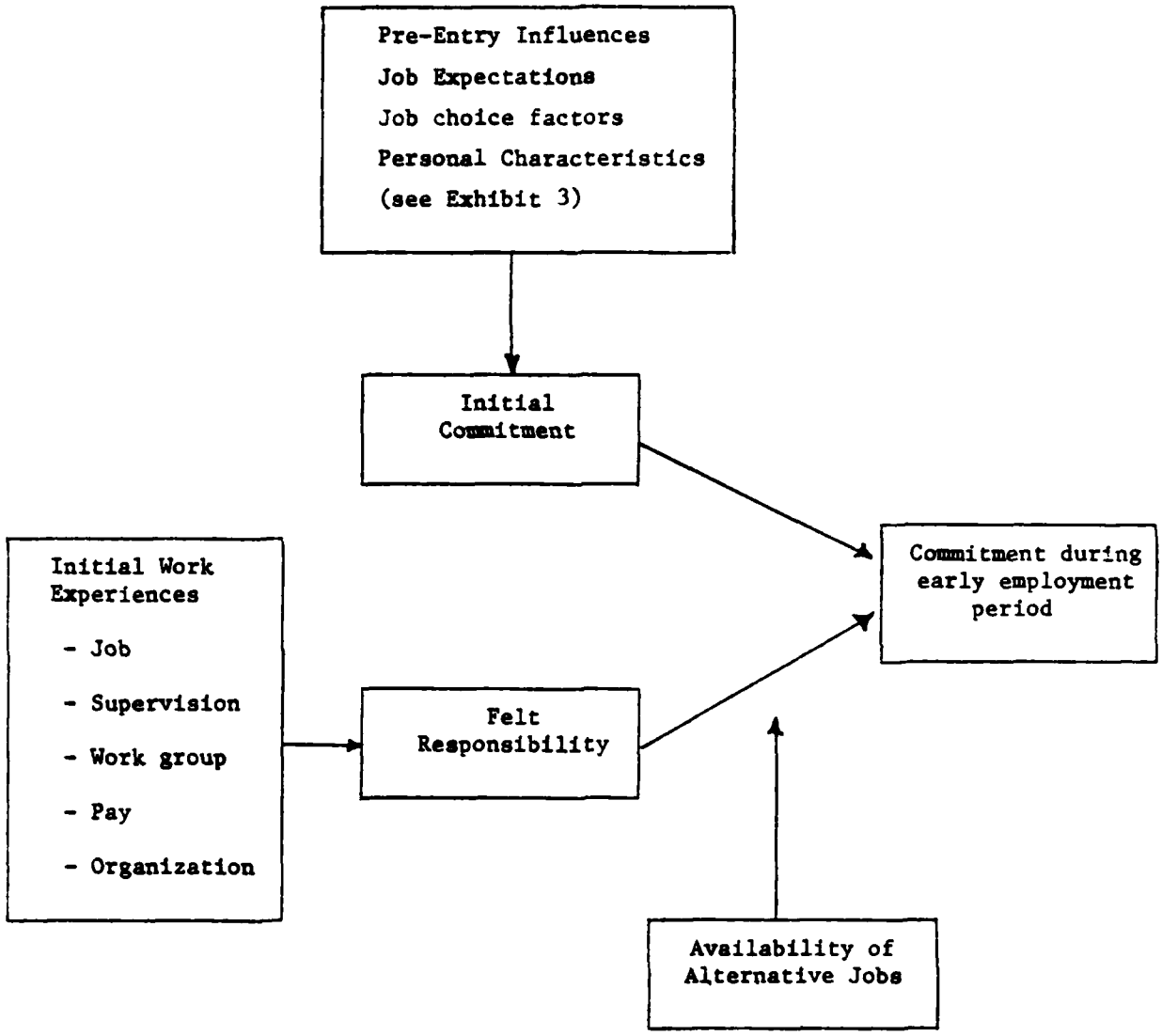


Exhibit 4. Major determinants of commitment during the early employment period.

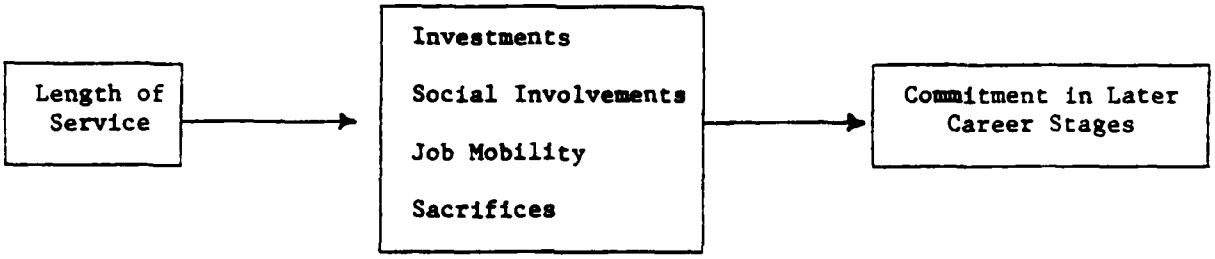
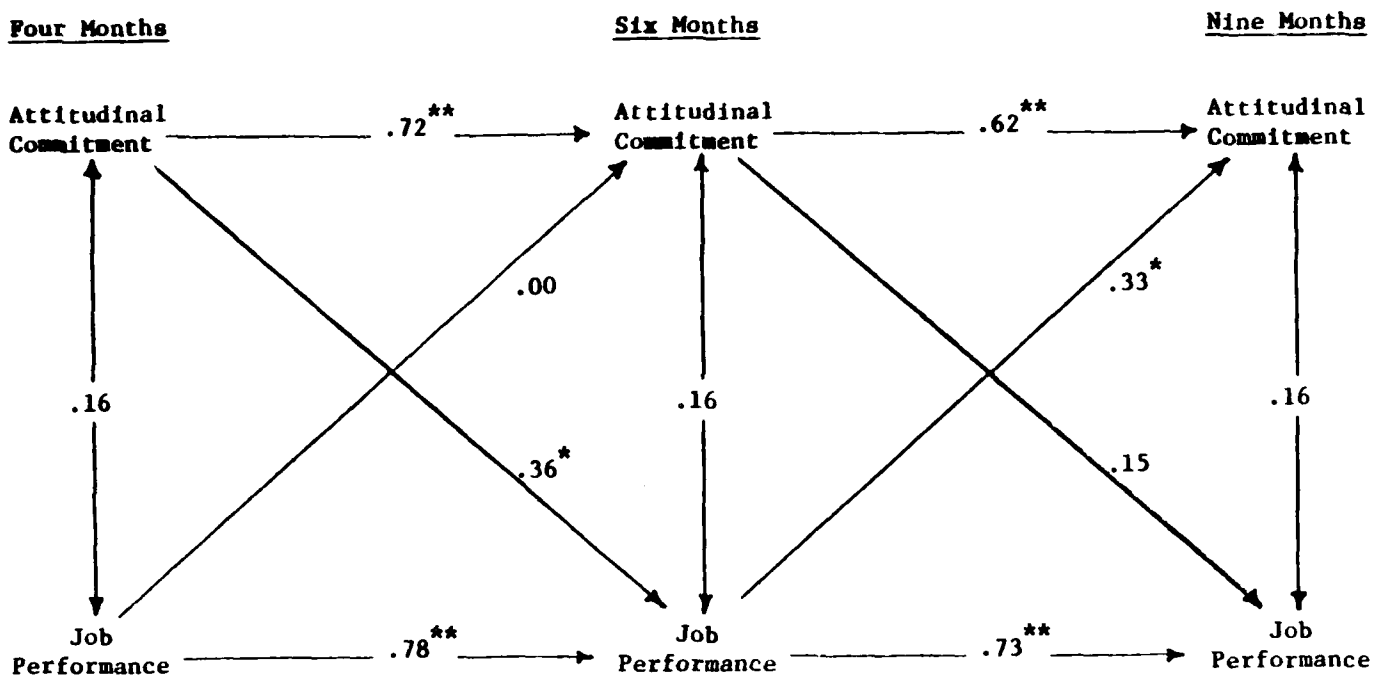


Exhibit 5. Major influences on the continuing development of organizational commitment during later career stages.

Exhibit 6.

Relationships Between Attitudinal Commitment

and Job Performance During the Early Employment Period



Source: Crampon, Mowday, Porter, and Smith (1978)

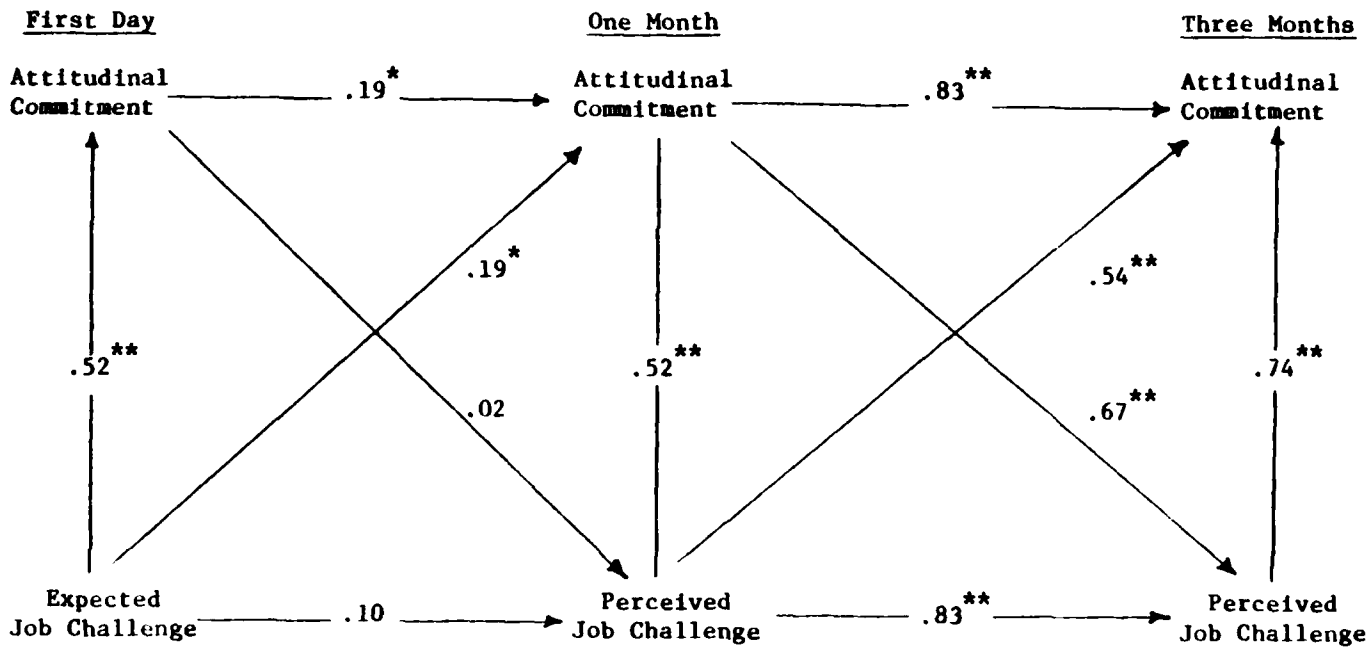
* $p < .05$

** $p < .01$

Exhibit 7.

Relationships Between Attitudinal Commitment

And Job Challenge During the Early Employment Period



Source: Mowday and McDade (1980)

* $p < .05$

** $p < .01$

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Defense Technical Information Center (12 copies)
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LIST 2
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1030 E. Green Street
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Psychologist
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Department of the Navy
1803 Arlington Annex
Washington, DC 20350

Deputy Chief of Naval Operations
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Plans and Policy Branch (Op-150)
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Chief of Naval Operations
Assistant, Personnel Logistics
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The Pentagon, 5D772
Washington, DC 20350

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LIST 4
NAVMAT & NPRDC

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MAT 0722
800 N. Quincy Street
Arlington, VA 22217

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Jefferson Plaza, Bldg #2, Rm 150
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Arlington, VA 20360

Naval Material Command
NAVMAT-00K
Washington, DC 20360

Naval Material Command
NAVMAT-00KB
Washington, DC 20360

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

NPRDC

Commanding Officer (5 Copies)
Naval Personnel R&D Center
San Diego, CA 92152

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

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LIST 5
BUMED

Commanding Officer
Naval Health Research Center
San Diego, CA 92152

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San Diego, CA 92134

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Naval Submarine Base
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Groton, CT 06349

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Bureau of Medicine and Surgery
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Department of the Navy
Washington, DC 20372

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

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

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

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LIST 6
NAVAL ACADEMY AND NAVAL POSTGRADUATE SCHOOL

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ATTN: Dr. Richard S. Elster
Department of Administrative Sciences
Monterey, CA 93940

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

Superintendent
Naval Postgraduate School
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Monterey, CA 93940

Naval Postgraduate School
ATTN: Dr. James Arima
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Annapolis, MD 21402

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Monterey, CA 93940

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Naval Academy, U.S.
Annapolis, MD 21402

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LIST 7
HRM

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Human Resource Management Detachment
Naval Air Station
Alameda, CA 94591

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

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

Commanding Officer
Human Resource Management Center
Pearl Harbor, HI 96860

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

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

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

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

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1300 Wilson Boulevard
Arlington, VA 22209

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

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U.S. Atlantic Fleet
Norfolk, VA 23511

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Naval Air Station Whidbey Island
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Officer in Charge
Human Resource Management Detachment
COMNAVFORJAPAN
FPO Seattle 98762

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NAVY MISCELLANEOUS

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

Naval Training Analysis
and Evaluation Group
Orlando, FL 32813

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

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Test and Evaluation
Naval Air Station
Pensacola, FL 32508

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

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

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

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LIST 9
USMC

Headquarters, U.S. Marine Corps
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Washington, DC 20380

Headquarters, U.S. Marine Corps
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Quantico, VA 22134

Commanding Officer
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Quantico, VA 22134

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

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LIST 10
DARPA

Defense Advanced Research
Projects Agency
Director, Cybernetics
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1400 Wilson Blvd, Rm 625
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International Public Policy
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EOLC/SMO
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National Institute of Mental Health
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Rockville, MD 20852

National Institute of Mental Health
Minority Group Mental Health Programs
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5600 Fishers Lane
Rockville, MD 20852

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Office of Planning and Evaluation
Research Management Division
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Personnel R&D Center
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Washington, DC 20593

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LIST 11 CONT'D

OTHER FEDERAL GOVERNMENT

Social and Developmental Psychology
Program
National Science Foundation
Washington, DC 20550

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LIST 12
ARMY

Headquarters, FORSCOM
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Ft. McPherson, GA 30330

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Technical Director
Army Research Institute
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LIST 14
MISCELLANEOUS

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Office of the Air Attache (S3B)
1601 Massachusetts Avenue, N.W.
Washington, DC 20036

British Embassy
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3100 Massachusetts Avenue, N.W.
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