SOME GENERAL CONSIDERATIONS ABOUT FACTORS AFFECTING JOB STABILITY AND PERSONNEL RETENTION

H. PETER DACHLER
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Research Report No. 20
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**Title:** Some General Considerations About Factors Affecting Job Stability and Personnel Retention

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**Abstract:**
The literature on employee turnover has concentrated on making predictions based on the evaluation people make of different facets of their work environment. However, little is known about the psychological processes which underly job stability and personnel retention. A series of empirical and theoretical papers are reviewed in this report which attempt...
to define some of these psychological processes.

A basic premise guiding this line of research is that the retention of employees is based on their appraisal of the total context in which their work role exists, including their families and careers. A major focus of the summarized research then, concerns the perceptual and cognitive processes that define how people appraise their work context and the relationship between those appraisals and turnover.

Also included is a list of all publications accomplished under this Contract.
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SOME GENERAL CONSIDERATIONS ABOUT FACTORS
AFFECTING JOB STABILITY AND PERSONNEL RETENTION

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The traditional research approach to the study of job stability and personnel retention is to seek the determinants of these behaviors primarily within the context of isolated organizational, job or individual difference variables. This approach to the problems of stability and retention is based on two assumptions, both of which were called into question in the research to be summarized in this report.

First, traditional research approaches view the problems of personnel stability and retention primarily as threats to the efficiency and economic survival of existing organizations. Although employee turnover may represent a threat, this conceptual focus tends to limit research to questions about ways by which turnover can be directly controlled or eliminated by the organization. In the short run, the most effective way of dealing with turnover as a problem in need of immediate solution is to search for those variables which accurately and reliably predict turnover. The more variance in employee turnover that can be reliably accounted for, the more effectively organizations can increase job stability and personnel retention by manipulating or controlling the predictors of turnover. A review of the existing research literature on turnover (Porter & Steers, 1973; Schuh, 1967), however, reveals that, in general, only a relatively small amount of turnover variance can be accounted for by the commonly used
predictors, and that the reliability of turnover predictions is rather disappointing. One important lesson to be learned from these data is that both the conceptual and methodological emphasis in turnover research has been on temporal and spatial correlations between observed events, which has ignored the explanations of these correlations by focusing solely upon the actions of the observed events instead of the attributes which are responsible for their actions (Locke, 1972; Hammer & Dachler, 1975). The research to be summarized in this paper, therefore, makes an attempt to outline sources of psychological attributes that may explain the empirical predictions of employee turnover.

A second basic assumption that has hampered the understanding of job stability and personnel retention is a view of these phenomena as primarily an employee problem. The majority of research in this area has sought to predict turnover from job related individual characteristics of employees, or individual evaluations of isolated aspects of the immediate organizational or job environment. This view ignores the fact that human behavior takes its meaning from the total context in which it occurs. The explanations of whether people remain with or leave an organization have to be sought not only within the narrow organizational context but also within other crucial aspects of their lives, including their families, their careers, and the various economic and social conditions which define the total context of turnover behaviors. In other words, turnover is not just an employee problem; it is also a job, task, organizational, career, family, economic, and social-cultural problem; in short, it is a social system problem. Thus, rather than emphasizing a search for readily controllable variables at the individual difference
level that work, i.e., that account for sufficient variance in employee turnover, this paper attempts to outline some of the general psychological processes which may be involved in a social systems perspective of job stability and personnel retention.

A basic premise guiding the approach to turnover taken in this paper is that the total social systems context explains job stability and employee retention by reference to the processes by which people appraise that context and the psychological outcomes of those appraisal processes. While this assumption is not a new one in general psychology, little progress has been made in specifying these appraisal processes and their outcomes. With respect to understanding job stability and employee retention, the idea of looking at this organizational phenomenon in terms of the underlying psychological processes is essentially non-existent. This paper summarizes some of the crucial issues involved in the way people appraise the total context in which they behave, how that context interacts with the appraisal process, and what organizational and individual outcomes seem to be related to the appraisal process. The implications of these issues for understanding employee retention are briefly discussed at the end of each research report summary. The results of a large study that was based upon many of these implications are summarized at the end of this paper.

PERCEPTUAL ISSUES REGARDING EMPLOYEE APPRAISAL OF THEIR ENVIRONMENT

A majority of the currently existing research on turnover has related employees' satisfaction with various aspects of their work to their propensity to stay with or leave their organization. While these studies have found some, albeit inconsistent, relationships between satisfactions and
turnover, it is entirely unclear: (1) how the various aspects of people's environment affect satisfaction, (2) whether it is the experienced satisfaction which is the overriding psychological variable involved in turnover behavior, or (3) whether there are other perceptual processes which can, either directly or through the emotional reactions indexed by satisfaction, explain job stability. Therefore, one of the prime objectives for our investigation of turnover was to attempt to clarify the various aspects of employees' appraisals of the environment and the outcomes of these appraisal processes. Three basic psychological concepts existing in the general literature, organizational climates, satisfaction, and motivation seemed to be relevant for this purpose. The following Technical Reports attempted to discuss the role of organizational climate and satisfaction in people's appraisal of their environment. The role of motivation in the appraisal process will be discussed in the following section.

The perceived environment: Organizational climate. Research Report
No. 2; AD762598 (B. Schneider).

Given the general confusion in the literature about the distinction between the way people perceive their environment (climate) and the emotional reactions (satisfaction) they have to their perceptions (Guion, 1973), and in view of the fact that turnover has been related both to satisfaction and to characteristics of people's environment, this report attempted to clarify both the conceptual and methodological distinctions between satisfaction and organizational climate. It was argued that in trying to assess the impact of the environment on people's behaviors, it is crucial to distinguish between the existing properties and processes of organizations (i.e., organizational structure), such as size, product,
technology, hierarchical structure and so forth (Forehand & Gilmer, 1964; Porter & Lawler, 1965) from the perceptions people have about the events and conditions in their environment (i.e. climate). However, the concept of climate does not just refer to the direct translation of organizational structure into perceptual counterparts of it. Climate refers to perceptions people have about elements of the environment on the basis of which they form beliefs or concepts about very general aspects of their environment. Climate perceptions, thus, are a result of integrating specific information into a general theory or concept which suggests something about what the perceived environment is and how it functions.

Satisfaction, which is thought to be an emotional state resulting from one's appraisal of one's environment or experiences in the environment (Locke, 1976), is clearly related to climate perceptions. However, satisfaction is a result of the interaction between what is perceived to exist in the general environment and some system of personal needs and values (Locke, 1973; 1976). Thus, by referencing perceptions and conclusions about the environment to some internal system of needs and values, satisfaction indicates more about the person than it does about the organization. Research that relates people's satisfaction with different aspects of their intra- and extraorganizational environment to their decision to stay or leave their organization, therefore, implicitly views turnover as primarily an individual problem.

Given the fact that environmental contexts in which people behave are multidimensional, and that a given environment provides the context for many different kinds of behaviors (production, absenteeism, creativity, conflict, etc.) it makes little sense to talk about one climate. Different
dimensions of both the organizational as well as extraorganizational environment may be relevant to different kinds of behaviors, and people may, depending on which environmental aspects they attend to, form a variety of different concepts about their environment. Therefore, this paper concludes that climate perceptions are organized sets of specific perceptions, or abstractions of specific organizational and extraorganizational conditions, events and experiences, and that each organization has a variety of climates, depending upon the specific behavior of interest for which the environment provides the context.

The distinction between the concepts of climate and satisfaction and the conceptual definition of climate perceptions in terms of concept formations based on specific perceptions about organizational events and conditions have a number of important methodological consequences, which, as this report shows, have not been clear in the literature regarding satisfaction and climate. Both satisfaction and organizational climate are usually assessed by questionnaires. But these questionnaires have freely intermixed items asking for descriptions and items asking for evaluations. Furthermore, these questionnaires seldom distinguish between items of different levels of inclusiveness (i.e., very specific or micro items as contrasted to items asking for general conclusions or about macro issues). Given the fact that satisfaction references both micro and macro issues in the environment to some internal system of needs and values, measures of satisfaction should allow either a direct expression of evaluation (e.g., Schneider & Alderfer, 1973) or permit a relatively clear inference about the emotional value of a person's questionnaire response (e.g., Smith, Kendall & Hulin, 1969).
Measures of climate, on the other hand, must allow for descriptive responses about macro issues in the organizational environment. Organizational climate measures, however, raise one additional difficult question: what is the appropriate unit of analysis for both the development and analysis of organizational climate measures? Contrary to satisfaction measures which always are designed to discriminate the satisfaction of one person from the satisfaction of another person, climate measures should reference properties of organizations. If climate measures are designed to reflect individual perceptions of the organizational environment, then one would expect to find reasonably high correlations between them and satisfaction measures, since both measures reflect the same environmental conditions. Satisfaction measures should assess individual differences in relating environmental perceptions to needs and values; individual-based climate measures should indicate differences in individuals' perceptions of the conditions an organization creates for them. In both cases, then, we obtain information about the organization and about the person, with all the associated difficulties in trying to disentangle what these measures say about properties of the organizational environment and properties of the responding individual.

Since organizational climate was conceptualized as a property of the environment, however, climate measures should be able to distinguish between properties of different organizations rather than between properties of different individuals. To satisfy this requirement, organizational climate measures cannot be developed and analyzed at the individual level. Organizations, not individuals, are the required sample in the development of climate measures. This report summarizes the intercorrelations between...
satisfaction measures and climate measures developed on the basis of organizations, which shows that these climate measures rarely correlate above .50 with measures of satisfaction, as compared to correlations in the .70's where climate measures are developed on individuals.

**Implications for Understanding Turnover.** To understand the extent to which job stability and employee retention is a result of environmental properties, individual properties, and the interaction of both environmental and individual attributes, it is crucial to first develop the conceptual tools necessary for understanding environmental and personal factors that affect turnover, and to use these conceptual tools for the development of appropriate measures. For this purpose the distinction between perception and evaluation of micro and macro issues in the environment, and the problems of separating individual from organizational attributes in measures of satisfaction and climate needed to be clarified.

**Conceptualizing organizational climates.** Research Report No. 7; AD783064 (B. Schneider).

This paper continues to refine and extend the conceptual and methodological issues raised in the previously discussed Research Report No. 2. The literature reviewed suggests that the basic satisfaction research orientation, emerging in part from early attitude theory research, has been affectively and individually oriented, while climate research has been more descriptively and organizationally oriented. However, considerable research exists which confounds the affective/descriptive and individual/organizational issues.

This paper proposes a conceptual definition of organizational climate
and reviews this definition in the light of theory and research emerging out of three schools of thought in psychology, namely Structuralism, Gestalt Psychology, and Functionalism. Specifically, the following definition of organizational climate was proposed:

An organization's climates are the concepts people share about the organization. As concepts, climate perceptions are meaningful abstractions of sets of cues, the cues being the many specific events, conditions, practices and procedures that occur in the daily life of an organization. As concepts, climate perceptions help individuals reduce information overload and function as frameworks against which people identify behaviors that will adapt them to their situation (p. 20).

Each of the three schools of psychology were examined for basic ideas and supporting research results that are relevant to the concept of climate as defined in this research report.

The Structuralist view in psychology embraces the understanding of elements and their attributes, their modes of composition, and the comprehension of the structural characteristics of familiar experiences. Important for the concept of climate is the Structuralist emphasis on understanding the psychological dimensions that underly the perceptions people have of their environment. Thus, the important variable is not the physical or "hard" characteristics of the environment, but the psychological dimensions that people construct from their perceptions of specific elements, by which they assign meaning to the environment in which they act. Structuralism provides a rationale for the use of introspective methods and suggests the potential utility of extending the psychophysical procedures that were developed for understanding the psychology of the fundamental senses to help understand the psychology of organizations.

Theory and research which has come out of the Gestalt school of
psychology supports the climate research which has provided some evidence that: (1) people create meaningful concepts about a situation based on the perceptions they have of existing and believed-to-exist attributes of the situation; (2) the concepts people create are shared by those in the same situation; and (3) people behave in ways that fit their conceptions of the prevailing climates.

Research results from studies on organizational climates seem to support the Functionalist view that perceptions of the environment help explain how people adapt to their environment. A number of studies suggest that people in the same work setting agree on their perceptions of their situations. Further evidence seems to support the idea that people adapt to the climate they perceive by "knowing" the appropriate behaviors for adaptation through their perceptions. Finally, some research evidence was found in support of the hypothesis that the process of individuals adapting to their environment reduces the degree to which individual differences can be displayed (e.g., the degree to which differences in ability are related to differences in performance), unless the climate of an organization facilitates the expression of individual differences.

Implications for Understanding Turnover. The arguments and supporting evidence presented in this report help in distinguishing an individual difference approach to turnover. Attempts to explain turnover from the degree of satisfaction or dissatisfaction that individuals express about different aspects of their environment emphasizes the individual attributes of relating perceptions of different aspects of the environment to internal need and value structures. Although research
clearly supports the contention that the more people are satisfied with different aspects of their jobs, the less likely they are to leave their jobs, this research does not provide much insight about which of the great variety of specific and general dimensions in the environment have a bearing on turnover, and how much of the turnover variance can be explained by individual differences in needs and values, by differences in the perceived environment, and by the interactions between need and value structures and perceptions about environmental conditions.

The attempt to define, through the construct of climate, some of the perceptual processes by which people make sense out of their environment with respect to given acts, allows the investigation of the relationship between climate and turnover. Since the construct of climate refers primarily to attributes of the environment (without denying a process by which individuals perceive and form beliefs about the environment), and given the original assumption that job stability must be viewed within the total context of a person's life, including his family and his career, it becomes possible to investigate how job stability and personnel retention can be explained within the total social system framework within which it occurs. The methodological implications of the conceptual definition of climate provided the bases for constructing measures of the perceived environment relevant to turnover.


One of the main questions in understanding the relationships between perceived environment and behaviors such as turnover concerns the relationship between specified attributes of the environment and perceptual
summaries (climate) of that environment. Although there have been a few studies which have investigated the relationship between the formal policies of organizations and climate perceptions (Litwin & Stringer, 1968; Payne & Pheysey, 1971; Payne, Pheysey, & Pugh, 1971), there is little known about how different levels of inclusiveness (micro versus macro aspects) relate to climate perceptions and how specific environmental characteristics relate to climate perceptions as opposed to perceptions about one's own power. A laboratory study was designed to manipulate organizational characteristics of different levels of inclusiveness in order to observe their effects on climate perceptions and self-perceived power.

Three environmental aspects in a simulated organization were manipulated: 1) the position level of a participating employee (manager, loan officer, loan clerk); 2) whether or not a participating employee's supervisor consulted him or her before changing a decision the employee had made; and 3) whether the organization's main mission was to improve profits or whether it was to improve the service customers receive. Five dimensions of self-perceived power, in line with French and Raven's (1959) five bases of power, and four dimensions of climate (cf. Campbell, Dunnette, Lawler & Weick, 1970) were assessed as dependent variables.

The results, although rather weak, suggested that respondents differentiated between self perceptions of power and perceptions of organizational climate. Perceptions of power were primarily related to level of participation, both as a main effect and in interaction with the position level of the respondents and with the profit versus service orientation of the organization. On the other hand, climate perceptions were primarily related to the overall orientation of the organization (profit/service),
both as a main effect and in interaction with either level of participa-
tion or position level of the respondent.

These results suggest that the concepts or summaries that people
form about an organization are based not only on their immediate experi-
ences, but also on more general attributes of the environment, such as
the stance the organization takes with reference to people outside the
organization's boundaries, i.e., to customers. In addition, these re-
results make it clear that summary perceptions of organizations are not
simple linear and additive functions of different aspects of people's
organizational environment. Numerous studies have shown that perceptions
of organizations differ as a function of the position level of the per-
ceiver. The exploratory study reported in this research report illus-
trates the fact that climate perceptions differ as a function of position
level moderated by the degree of participation, or as a function of the
general organizational orientation moderated by degree of participation.
Given the abstractness of the laboratory simulation, the important impli-
cation is not the specific content of the interaction effects on climate
perceptions; the important lesson concerns the fact that environmental
attributes are likely to lead to summary concepts about the environment
based upon the perceived interactions between the various attributes.

**Implications for Understanding Turnover.** If we assume that environ-
mental perceptions form a background against which individuals assess the
appropriateness of behavior, this study points to the possibility that
environmental characteristics relevant to turnover may reside outside of
the immediate work environment of employees. In other words, the more
macro or inclusive issues in the environment, such as the perceived impact
an organization has on non-work aspects of a person's life, and the way people perceive their immediate work environment in relation to the multi-faceted social system of which they are a part, may have a bearing on understanding and predicting personnel retention.

Some relationships among and between measures of employee perceptions and other indices of organizational effectiveness. Research Report No. 5; AD781888 (B. Schneider and R. A. Snyder).

This research report summarizes the results of a study on a sample of 50 life insurance agencies which involved 522 employees, including 45 managers, 209 assistant managers and supervisors, 189 agent trainees, and 79 secretaries and stenographers. The basic purpose of this study was to empirically investigate the conceptual distinction between satisfaction and climate and the relationships of both climate and satisfaction with measures of agency effectiveness, including employee retention. Agency climate and satisfaction were assessed by a questionnaire which was mailed, after careful procedures to solicit cooperation, to each potential respondent. Six dimensions of climate were assessed with a short form of the Agency Climate Questionnaire (Schneider & Bartlett, 1968; 1970; Schneider, 1972). Satisfaction was measured with the Job Descriptive Index (Smith, Kendall, & Hulin, 1969) and with a revision of Alderfer's measure (Schneider & Alderfer, 1973) of Existence, Relatedness, and Growth satisfaction. Five objective criteria of agency effectiveness, including appointment and retention of new agent trainees and overall employee retention in an agency, were obtained. In addition, forced distribution ratings of overall effectiveness of each participating life insurance agency by six home office personnel most concerned with agency policy were collected.
Across all respondents, i.e., at an individual level of analysis, the climate scale scores were generally more highly correlated with each other ($\bar{r} = .34$) than they were with the scale scores of the satisfaction measures (Climate/JDI $\bar{r} = .19$; Climate/ERG $\bar{r} = .24$). The scales of the two satisfaction measures, on the other hand, were more strongly related to each other ($\bar{r} = .34$) than either measure's scales were internally correlated (JDI, $r = .27$; ERG, $r = .30$).

At the agency or group level of analysis, one hypothesis regarding the distinction between satisfaction and climate was that people would agree more on climate perceptions than on satisfaction across a set of organizations. To test this hypothesis, average scale scores for the climate and satisfaction measures were computed for each position (manager, assistant managers and supervisors, agent trainees, and secretaries or stenographers) within each agency. Correlations across the 50 agencies were then computed between all possible position combinations on each of the climate and satisfaction scales. Although the results were not very strong, the data suggested that there was more between-position agreement on climate perceptions than on satisfaction. Correlating the climate scales with the satisfaction scales within each position across the agencies, it was shown that for managers and secretaries or stenographers, the relationship between climate and satisfaction was quite low, but for the other positions, the climate-satisfaction relationships were quite high. Although the exact theoretical meaning of the obtained differences between climate and satisfaction measures was not made clear by the results of this study, the data do suggest that the two kinds of measures represent different underlying psychological constructs.
The final question of this study was concerned with the relationships of the average climate and satisfaction scales for each position with the agency effectiveness criteria. It should be noted that these were group, not individual level, analyses, which attempted to correlate the average climate and satisfaction scales within a given position of an agency with the agency effectiveness criteria across the different agencies. In general, the satisfaction scales were more consistent correlates of the organizational effectiveness criteria than were the climate scales. As in previous studies using individuals as the unit of analysis, in the present study using position in an agency as the unit of analysis, satisfaction and turnover rather than satisfaction and production were consistently related.

One interesting set of results which might shed some additional light on the differential effects of climate and satisfaction on turnover concerns the relationship of agent trainee climate perceptions and satisfaction with retention of assistant managers and supervisors, retention of agent trainees, and retention of secretaries or stenographers. First of all, the positions' satisfaction most consistently correlated with various turnover indices were also those most strongly related to perceptions of climate. In other words, the satisfaction of assistant managers and supervisors and of agent trainees was most consistently related to turnover indices in each agency; it was also within these two positions that climate scales were most strongly related to satisfaction scales. Secondly, the interpersonal satisfaction area (JDI supervision and co-worker scales) showed the most consistent correlations with turnover. Thirdly, turnover was not necessarily predicted by the satisfaction of people in the positions with high turnover; turnover by assistant managers and supervisors
and by secretaries or stenographers were best predicted by the satisfaction of people in the agent trainee positions. Agent trainee climate perceptions and satisfaction accounted for about twice as many significant correlations against turnover criteria as the perceptions and satisfaction of people in any other position.

In a sense, it looks like the one set of perceptions that most adequately represents the agency is the set belonging to the agent trainees. People in this position may serve as a focus of attention from all other positions and, as such, gain a broader perspective of the characteristic operating patterns of the organization. Because of their unique position as a focus of attention from all other people in the agency, the extent to which agent trainees are satisfied with the conditions that exist in the agency may in fact represent a summary of the prevailing sense of satisfaction and eventual turnover of others as well.

Implications for Understanding Turnover. The results of this study, although very exploratory in nature, suggest that satisfaction seems to be the most consistent predictor of turnover even at the group level of analysis. However, from the point of view of understanding job stability and diagnosing the social systems aspect which may underly employee retention, descriptions of organizational characteristics from different group perspectives may provide insights into the social system's nature of job stability not attainable from only satisfaction indices.

Organizational type, organizational success, and the prediction of individual performance. Research Report No. 6; AD783066 (B. Schneider)

The important question that needed some empirical attention is whether climate perceptions as indicants of broad organizational
characteristics form the context for organizational as contrasted with individual outcomes, and whether climate perceptions as indicators of organizational attributes function as situational moderators for the relationship between individual characteristics and individual behavior. Results reported in Research Report No. 5 indicated that climate perceptions and reported satisfaction of people in particular positions across a number of similar organizations could help explain employee retention rates in those and other positions. Thus, although the particular theoretical reasons for the results obtained in that study were not clear, the data suggested that aggregated perceptions of the organizational environment may provide an index of "the psychological meaning" a set of organizational characteristics has for particular kinds of behaviors expressed in that organization. If this is the case, one ought to be able to cluster organizations on the basis of aggregated climate perceptions to form sets of organizations that share a given profile or combination of climate dimensions. The study described in this research report attempted to develop a methodology to identify types of organizational situations which might differentially predict new employee success directly, or moderate the relationships between some predictor-criterion pairs of variables.

Data were collected in 168 life insurance agencies from an insurance company with agencies in about every state. Climate perceptions were obtained with the Agency Climate Questionnaire (Schneider & Bartlett, 1968; 1970). Turnover and production criteria for each of 914 newly contracted agents were collected approximately one year after contract. For each of the clusters of agencies, turnover, production, and a joint turnover/production criterion were calculated.
Results from the cluster analyses (which were carried out separately for climate perceptions of managers, of assistant managers, and of old agents) indicated that it is possible to generate reliable enough climate scale scores to yield clusters of organizations that are each internally consistent and separately different from other clusters. The fact that the clustering methodology employed in this study allowed the identification of internally consistent and analytically distinguishable clusters without having to ignore too many agencies that did not fit the statistical requirements of the clustering procedures, indicates that it is possible to type organizations on the basis of a profile of perceived organizational characteristics. This paper tentatively interprets the meaning of the empirically derived sets of clusters (i.e., one set of clusters for the climate perceptions of people in the positions of manager, assistant manager, and old agent) based upon the cluster profile made up of the five climate scales scores in the Agency Climate Questionnaire (Support, Conflict, Structure, Concern, Autonomy, Morale). In addition, the meaning of these organizational clusters was further defined by analyzing whether the different clusters corresponded with differences in production and retention of new agents.

Results regarding cluster-new agent effectiveness criteria relationships showed, although not very strongly, that there were some significant differences on both production and retention criteria of new agents between some clusters based on assistant manager's climate perceptions and especially on old agents' climate perceptions.

The theoretical meaning of the clusters, and the few obtained significant differences on new agent production and retention criteria, is by
no means clear. However, because these data are purely descriptive and very exploratory, these results suggest that it might be possible to type organizations based upon shared perceptions of organization members, and that these shared perceptions may be able to explain which perceived characteristics of organizations provide situational contexts for different kinds of organizational outcomes. For example, agencies characterized by old agents as relatively high on support, low on conflict, and high on structure, concern, autonomy and morale, retained a larger number of new agents who sell more insurance than agencies who are perceived by old agents to be characterized by the "Average or Typical Agency" cluster. The latter cluster of agencies, in turn, which is characterized by relatively less support, more conflict, and less concern, autonomy, and morale, are clearly the superior agencies in production. Therefore, a set of perceived organizational characteristics may provide a context appropriate for job stability whereas a different and perhaps independent set of perceived situational characteristics may provide a context appropriate for behaviors resulting in high productivity. While these results are only suggestive and, according to traditional empirical criteria, rather weak, their implications for generating organizational level or social system level explanations of organizational and individual outcomes need to be further researched.

The final set of results showed that in assistant manager and old agent clusters that were characterized by support and concern for the individual, as well as autonomy, and minimum conflict, individual differences as indexed by the Aptitude Index Battery (LIAMA, Note 1) showed predictive validity with respect to a dual criterion regarding retention and
sales. The Aptitude Index Battery also showed predictive validity in the agency cluster described by managers in laissez-faire terms, i.e., agencies in which managers perceived relatively little activity on nearly all of the five climate dimensions. While the tentativeness of the obtained data must be kept in mind, these results suggest the view that two kinds of environment in which ability is most likely to predict individual behavior are when the environment (1) supports, encourages, and rewards the display of individual differences, or (2) leaves the person unconstrained to adapt to the environment by having the skills required to behave appropriately in that environment. There is a dire need for developing the theoretical underpinnings for such a view. The exploratory data reported in Research Report No. 6 provide a number of suggestions for such a theoretical framework.

Implications for Understanding Turnover. The data obtained in this study suggest the potential usefulness of thinking about job stability and employee retention in terms of general characteristics of the organization rather than in terms of individual characteristics isolated from the immediate situational context. The degree to which turnover may be explained by individual level variables is likely to be heavily dependent upon a thorough understanding of the overall situational context in which the individual level variables operate.

Organizational climate: Individual preferences and organizational realities revisited. Research Report No. 9; AD781893 (B. Schneider).

The research reported in this paper is based upon the sample and measures described in Research Report No. 6. It extends the previously
reported arguments and related research results by investigating whether the fit of new agents (in terms of their expectations about the new organizations or their preferences for certain characteristics in the new organization) with the existing characteristics of the organization (as perceived by employees already in each of the studied agencies) is a correlate of new agent success. Previous research (see Wanous, 1977 for a review) has provided support for the idea that new employees who have realistic expectations (i.e., expectations fit the existing climate) tend to remain longer with the organization they joined.

Results indicated that the correlations between six different new employee-existing organizational climate fit indices and new agent success criteria were essentially zero. However, if one defined employee-organization fit not with respect to the climate as perceived by incumbents of the agency which a new agent joins, but with respect to the cluster profile of a given agency (i.e., the general organizational type to which a given agency belonged; cf., Research Report No. 6), significant correlations between new agent fit and new agent success criteria were obtained in two clusters or types of agencies. Specifically, the correlations indicated that: (1) the more a new agent's expectations or preferences fit agencies characterized by high support, low conflict, and high structure, concern, autonomy and morale, the more likely he is to succeed in terms of both tenure and sales; and (2) the poorer a new agent's preferences fit agencies characterized by low support, high conflict, and low structure, concern, autonomy, and morale, the more likely the agent is to succeed with respect to both tenure and sales.
Implications for Understanding Turnover. The data reported in this paper make it clear that turnover is not reduced by just creating realistic expectations for new employees. Given a "positive" climate, a good employee-organization fit may allow new employees to succeed more quickly, whereas a poor fit to a "positive" climate may require more adjustments on the part of a new employee, resulting in the new employee entering a success cycle at a later point in time, or not remaining in the setting at all. The results for the negative climate cluster, where lack of fit was related to turnover, may represent a case of the new employee overcoming the negative situation in the organization. This may be particularly true in jobs such as selling insurance, in which autonomous behavior (behavior not very dependent on organizational support) can lead to success.

How do your climates show? Let us count some ways. Research Report No. 8; AD783065 (B. Schneider).

Written as the basis for an informal talk, this paper illustrates the conception of organizational climate as containing different sets of dimensions, depending upon the kind of behavior for which the climate serves as a context. The paper illustrates that the climates organizations create for their members can have a variety of consequences. They can doom a training and staffing program to failure, they can result in the attraction of undesirable job applicants and they can encourage an inappropriate orientation for employees in service oriented organizations. In other words, given that organizations are complex social systems, climates in one part of the system are reflected in climates of other parts of the system. These arguments are designed to refute the often
expressed view that an organization has one kind of climate.

MOTIVATIONAL ISSUES REGARDING EMPLOYEE APPRAISAL OF THEIR ENVIRONMENT

The Research Reports summarized so far have all dealt with theoretical and empirical research regarding organizational climate and satisfaction as crucial concepts in the understanding of job stability and personnel retention. The third concept relevant to the understanding of turnover is motivation. It should be noted, however, that the focus of the research under this contract was not to provide a motivational explanation of individual turnover, but to investigate some of the ways by which the situation in interaction with motivational processes is related to behavior.

A social system's conception of job stability requires an understanding about the interaction of personal attributes (motivation and satisfaction) and organizational attributes (climate) in affecting behaviors which result in job stability or job instability. The remaining Research Reports to be summarized deal with these issues.

Work motivation and the concept of organizational climate. Research Report No. 4; AD783067 (H. P. Dachler).

This Research Report discusses the general neglect in the literature on organizational phenomena of Lewin's (1938) old dictum that behavior is a function of the person in interaction with his environment. Since motivation is generally conceptualized as a hypothetical construct which acts as the most immediate psychological determinant of behavior, the paper argues that our ability to explicitly define work motivation has been impaired by researchers' emphasis on the main effects of personal or
environmental characteristics on motivation at the expense of systematically investigating the interdependence of personal and environmental characteristics.

It is suggested that Valence-Instrumentality-Expectancy (VIE) theory of motivation (Campbell, Dunnette, Lawler, & Weick, 1970; Dachler & Mobley, 1973; Lawler, 1971; Mitchell & Biglan, 1971; Porter & Lawler, 1968; Vroom, 1964) as one of the more explicitly stated process theories of work motivation, and the concept of organizational climate may provide the conceptual tools with which person-situation interaction in organizations could be studied. It was noted, however, that organizational climate had so far been defined primarily through descriptive analyses of existing organizations. Therefore, the concept of climate seems to require the logic of construct validation (Cronbach & Meehl, 1955), which would involve development of a theoretical network specifying the properties of organizational climate with respect to the cognitive components of VIE theory. The theoretical framework of VIE theory may allow the examination of a subset of the organizational environment which has meaning through the hypothesized connection to VIE theory constructs and which can be tested by researching the arrays of hypotheses emerging from this theoretical network. Such an approach might not only improve the conceptual clarity of climate, but it might also provide some much needed answers to the question of the person-environment interaction and increase the conceptual clarity of the concept of work motivation.

Implications for Understanding Turnover. The arguments of this paper imply that a systems view of turnover requires an integration of climate and motivation. In this way it might be possible to research turnover
not only as a function of personal characteristics, or a function of organizational characteristics, but as a function of the process by which the environment provides the context for motivated behavior.

The process of supervision in the context of motivation theory. Research Report No. 3; AD764586 (T. H. Hammer & H. P. Dachler).

One of the main questions that this report tried to deal with concerns the process by which different aspects of a person's total situation get translated into what he or she considers to be appropriate behavior in that context. The general VIE theory conception of motivation argues that the psychological force for a particular act is a function of a person's assessment of being able to engage in the act (expectancy), the person's beliefs about what consequences the act has (instrumentality), and the anticipated satisfaction a person attaches to each of the consequences (valence). This study attempted to investigate how a person's environment gets reflected in the way people think about two kinds of behaviors, regular attendance and different levels of performance. Two basic questions were asked: (1) What beliefs do people in a particular organization have about intraorganizational and extraorganizational consequences of regular attendance and different levels of performance, and how much do people in similar situations agree on their beliefs about the relationships between the two behaviors of interest and different aspects in the organization (e.g., pay, promotion, pressure from co-workers) and outside the organizations (e.g., time for hobbies, status in the community, support for family); (2) To what extent does the behavioral style of a person's supervisor affect the degree to which employees agree with their supervisor on what
the consequences of regular attendance and different performance levels are, and the degree to which subordinates of a given supervisor agree among themselves about the instrumentalities of regular attendance and different performance levels. In other words, it was hypothesized that a structuring supervisor (who is likely to spell out the consequences of different behaviors) would have greater agreement with his subordinates on what the behavior-outcome contingencies in the environment are than a considerate supervisor (who is likely to emphasize the needs of employees and be less concerned with task accomplishment).

Data were collected in a medium-sized manufacturing plant. 483 non-supervisory employees and their 31 supervisors, which represented 66% of the total plant work force, participated in the study. Supervisors and subordinates responded to a questionnaire which was part of a larger study on work motivation (cf., Dachler & Mobley, 1973) in which they rated the chances of attaining 56 intra- and extraorganizational outcomes, given that subordinates were regularly present at work, and given that subordinates worked at each of five specifically defined levels of performance. The outcomes fell into six categories: pay, supervision, promotion, working conditions, work itself, and non-work related outcomes such as outside interests and family related outcomes. Supervisor style was assessed by the Leader Behavior Descriptive Questionnaire (Fleishman, Harris, & Burtt, 1955).

The pattern of relationships found in this study indicate that supervisory consideration and structure are significantly and consistently related to employees' perceptions of behavior-outcome contingencies. Although these data do not allow an inference regarding whether consideration and
structure affect worker perceptions or whether the disparity between superior and subordinate perceptions affects the way a supervisor behaves, they were not consistent with arguments in the literature that high structure supervisors clarify path-goal instrumentalities. Rather, the results suggested that the more the supervisor initiates structure, the more divergent his subordinates' instrumentality perceptions are from his own and the more subordinates disagree among themselves on what the instrumentalities are. The more considerate the supervisor was perceived to be, on the other hand, the more his subordinates seemed to agree with him and among themselves on their perceptions of instrumentalities.

The report concludes with a discussion about the lack of theoretical understanding of these data and related data in the literature with respect to the definition of supervision and work motivation.

Implications for Understanding Turnover. Whereas this study clearly points to a need for clearer conceptualizations regarding the process of supervision and its relationship to employee motivation in general, the results have a significant bearing on some general questions relevant to turnover. First of all, the data indicate that regular attendance at work, which is relevant to the general issue of job stability, is related to employee experiences of events and conditions both in their work organization and other important aspects of their lives. Second, certain facets of the immediate job environment, such as supervision, are related to the accuracy with which people perceive events and conditions in their environment, when accuracy is defined by the agreement of people in similar situations. These data point to the fact that instrumentality perceptions are at least in part a reflection of environmental characteristics as
contrasted with personal characteristics. The translation of environmental events and conditions into instrumentality perceptions and the interaction of these perceptions with personal characteristics such as a person's ability, needs, and values which affect the expectancy and valence components of the VIE model of motivation, provide a beginning in the attempt to understand the process by which climate, satisfaction, and motivation may explain job stability and personnel retention.


The study reported in this paper is an extension and elaboration of the general arguments presented in Research Report No. 3. A central argument of the research conducted under this contract is that job stability is not only a function of the way people assess their organizational environment, but also a function of the way they assess their total environment, including the assessment of the interdependence between what happens in the work organization and what happens in other aspects of a person's life. A person's total work career takes on special importance in this connection. If one conceptualizes turnover as a reflection of a person's total career, rather than as just an isolated choice in reaction to conditions and events in the existing organization, it becomes important to investigate how career issues affect job stability and what environmental issues might affect a person's career.

The purpose of the present study was to investigate the organizational and family characteristics which may affect the intentions of professors
and administrators to continue in their present career path, or to switch career paths. The study was conducted in a large state university with 289 professors and 45 department chairmen participating in the study. Two sets of questionnaires were developed, one for the position of professors and one for the position of chair. Both sets of questionnaires consisted of 49 outcomes which were drawn from interviews and the existing literature as factors that might influence career preferences, choices, and satisfactions. These outcomes represented seven general categories: power, achievement, security, autonomy, social factors, family considerations, and status. Professors and chairmen rated each of the 49 outcomes in terms of (a) the desirability of each outcome (valence), (b) the instrumentality of the present career path for attaining each outcome, and (c) the instrumentality of the other (career path of chairman for current professors or career path of professor for current chairmen) career path for attaining each outcome. Each of the two groups of respondents also indicated their expectancy of success in both their current career path and the alternative one (if one were offered to them), their satisfaction with their present career path, their anticipated satisfaction with the alternative career path, and their intentions of moving into the alternative career path (if it were made available to them).

The results indicate that job stability can in part be explained by the VIE motivation model, although the various VIE components did not behave in the specific manner prescribed by the theory. Concerning the impact of the environment on job stability with respect to career paths, it was found that respondents perceived the career path of chairman as leading to the acquisition of power. To the extent that respondents valued
the possession of power, intentions to switch career path to the chairman position were increased. Respondents also saw the career path of professor to allow a great deal of autonomy. To the extent that respondents valued autonomy, intentions to switch career path to the professor position were increased. In summary, power was an important factor in the preference for a chair's job, while autonomy was an important factor in the preference for the professor's job.

**Implications for Understanding Turnover.** The important implications of this study for understanding job stability and personnel retention are that: (1) career considerations are likely to affect job stability; (2) leaving the present job is related to the assessment a person makes of the environment provided by the present job and the environment provided by alternative jobs; and (3) one of the crucial aspects for understanding is the degree to which perceptions of the environment yield the conclusion that the environment is one which provides for, encourages or supports the attainment and use of outcomes that are important to or valued by the individual.

**A COMPREHENSIVE RESEARCH INSTRUMENT FOR UNDERSTANDING TURNOVER INTENTIONS**

This last section includes a summary of a rather extensive report on the development of a comprehensive research instrument which integrated many of the conceptual and methodological issues discussed earlier and applied them to the study of turnover.
Work, family, and career considerations in understanding employee turnover intentions. Report No. 19 (B. Schneider and H. P. Dachler).

In the context of a literature review of employee turnover, this report discussed the development of a comprehensive questionnaire (Work, Family, Career Questionnaire (WFCQ)) for the study of turnover. The WFCQ emerged from a conceptual framework that views turnover in terms of people's perceptions and evaluations of their total environment, including their work environment, their family situation, and their subjective career. The initial data collected with the WFCQ on a large and heterogeneous sample from a variety of organizations are summarized. The results focused on whether the factor-analytically derived scales within the measure show any promise in providing new and reliable insights about employee turnover.

The development of the WFCQ was based upon a number of broad assumptions that depart from those that underly much of the existing research on turnover. First, it was assumed that turnover decisions most likely reflect a person's total life situation, including at a minimum work, family and career considerations. A considerable emphasis in the WFCQ was placed on assessing how the family and a person's subjective construction of his or her career were affected by intra-organizational factors and the resulting consequences for employees' turnover intentions.

A second important conceptual issue underlying the development of the WFCQ was that turnover decisions are probably most closely tied to (i.e., predicted by) global affective reactions (satisfaction) with respect to the organization's role in work, family and career. However, a better understanding of job stability and employee retention requires the specification of what perceived facets of the work, family, and career
situations seem most closely tied to satisfaction with respect to each.

A third general theoretical assumption guiding the development of the WFCQ concerned the level of inclusiveness of environmental issues that are assessed by people in considering turnover decisions. The turnover literature is unclear about whether turnover decisions reflect specific environmental issues, whether the decision to remain with or leave the present job reflects summarized representations (conceptions of a person's general environment; cf., Schneider, 1975), or whether turnover decisions reflect some systematic interdependence of both specific and global assessments of the work environment. The WFCQ attempted to cover the range from broad (organization) aspects, through the immediate work environment (job), to specific aspects of the work itself (task(s)).

In line with the broad conceptual issues, a number of methodological considerations were of importance in the design of the WFCQ. Given the assumption that turnover is likely to be best understood within the employee's total social system context, respondents were asked to consider all of the different issues in the questionnaire as if they were in the process of thinking about turnover and sitting back to take stock of their current situation. A second design feature important to the conceptual underpinnings of the WFCQ asked respondents to carefully consider their descriptions of each of the work, family, and career facets prior to evaluating those facets. In addition, respondents were asked to first report on family events and experiences before indicating the perceived impact the work organization has on those family events and experiences. Thus, an attempt was made to assess the outcomes of perceived processes
interrelating different holistic aspects of people's general context for turnover decisions.

The results from this initial analysis of the WFCQ indicate that the global indices of satisfaction with the work situation (organization, job, and task) as well as satisfaction with the way the organization facilitates a person's career were most strongly related to turnover intentions ($r$'s = -.47 to -.60). In comparison, satisfaction with the organization's impact on the family was not as strongly related to turnover intentions ($r = -.31$). Furthermore, while the descriptions of the work, family, and career facets did not predict turnover intentions as strongly as the expressed satisfaction with these issues, with a few exceptions the facet descriptions were consistently related to the expressed facet satisfaction. In other words, the data collected with the WFCQ supported the idea of a perception → satisfaction → turnover intention causal sequence, which strengthens the argument that understanding of turnover is enhanced by knowing which aspects of the environment relate to satisfaction.

An examination of the relative contribution to turnover intentions of each of the five situational facets (organization, job, task, organizational impact on family, and organizational career facilitation), indicated that perceptions of the organization and the job, much more than task issues, were related to turnover intentions. Organizational impact on the family was least strongly related to turnover intentions, whereas organizational career facilitation appeared to have the greatest impact of all the five situational facets on turnover intentions.

The final set of analyses moved from relationships across individuals
to the corresponding relationships of averaged variables across organizations. Whereas all of the satisfaction variables were significantly related to turnover intentions at the individual level of analysis, satisfaction with the impact the organization has on a person's career, pay satisfaction, and satisfaction with promotion opportunities were not significantly related to turnover intentions at the organization level.

Similarly, all the perception factors of work facets were significantly related to turnover intentions at the individual level of analysis, but at the organizational level only one each of the organizational, job, and task factors, and none of the perceived family and career factors, were significantly related to turnover intentions. The great disparity in the sample sizes used in the two analyses made an interpretation on the basis of statistical significance of the obtained correlations cumbersome. However, the obtained differences between the individual and organizational levels of analysis suggest that aggregated data across heterogeneous organizations and individuals may provide a clearer understanding of the general, non-organization-specific issues that explain job stability and personnel retention.

This technical report discusses some of the implications of these initial results for studying the impact of the perceived interrelationships among different aspects of a person's total work and non-work experiences on turnover. It concludes that an explanation of job stability and employee retention can no longer ignore those non-work aspects of people's lives that are affected by the events and conditions at work. Furthermore, in seeking work factors that are related to turnover, both the immediate and the more general organizational environment need
to be included. Finally, while this study, as most of the existing literature on turnover, has pointed to the importance of satisfaction as a correlate of turnover intentions, the initial data obtained with the WFCQ, as well as data presented in other research reports produced under this contract, suggest that for a clearer understanding of turnover it is important to study the perceptions that underly the evaluative responses. This conclusion clearly fits the general theory of attitudes (Fishbein & Ajzen, 1975).
PUBLICATIONS ACCOMPLISHED UNDER THIS CONTRACT


Reference Notes

References

Campbell, J. P., Dunnette, M. D., Lawler, E. E., III, & Weick, K. E.  

Cronbach, L. J. & Meehl, P. B. Construct validity in psychological tests,  


Hammer, T. H., & Dachler, H. P. A test of some assumptions underlying the path goal model of supervision: Some suggested conceptual modifications. Organizational Behavior and Human Performance, 1975, 14, 60-75.


Locke, E. A. Critical analysis of the concept of causality in behavioristic psychology. Psychological Reports, 1972, 72, 175-197.


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