

1-1-1980

Correlates of Climate Discrepancy

William F. Joyce
University of Pennsylvania

John W. Slocum, Jr.
Southern Methodist University

Follow this and additional works at: https://scholar.smu.edu/business_workingpapers



Part of the [Business Commons](#)

This document is brought to you for free and open access by the Cox School of Business at SMU Scholar. It has been accepted for inclusion in Historical Working Papers by an authorized administrator of SMU Scholar. For more information, please visit <http://digitalrepository.smu.edu>.

CORRELATES OF CLIMATE DISCREPANCY

Working Paper 80-116*

by

William F. Joyce

and

John Slocum

William F. Joyce
Wharton School CC
University of Pennsylvania
Philadelphia, Penn. 19174

John W. Slocum, Jr.
Distinguished Professor of Organizational
Behavior and Administration
Southern Methodist University
Dallas, Texas

*This paper represents a draft of work in progress by the author(s) and is being sent to you for information and review. Responsibility for the contents rests solely with the author(s). This working paper may not be reproduced or distributed without the written consent of the author(s). Please address correspondence to John Slocum.

Correlates of Climate Discrepancy

Organizational researchers have found it useful to distinguish between psychological and organizational climate (James and Jones, 1974; Payne, Fineman, and Wall, 1976; Joyce and Slocum, 1979). Psychological climate refers to individual descriptions of organizational practices and procedures. Such descriptions are useful in understanding the influence of the internal organizational environment on individual performance and satisfaction (Schneider, 1975a). Organizational climate refers to a collective description of this environment, most often assessed through the averaged perceptions of organization members (see Sells, 1953, for a notable exception). Organizational climates are important because of the "presumed relations between such climates and organizational or sub-unit functioning" (Jones and James, 1977, p.6).

The distinction between psychological and organizational climates suggests an interesting research question: "What are the correlates of the discrepancy between a person's psychological climate and the organization climate of which he or she is a member?" This "fit" between a person's psychological climate and the prevailing organization climate represents a potentially important source of influence on both job performance and satisfaction, as it represents the extent to which the individual's perceptions of organizational practices and procedures differ from, or are inconsistent with, the common perception of these practices held by others in the organization.

The purpose of this paper is to examine relationships between climate discrepancy and individual job performance and satisfaction. Following a review of previous research dealing with concepts of discrepancy and their relationships with performance and satisfaction, exploratory hypotheses are advanced and tested. The paper concludes with a discussion of the findings of this study and suggestions for refinement of the concepts of psychological and organizational climates.

Review

Although previous researchers have noted the potentially important effects of discrepancy between psychological and organizational climates, their efforts have been primarily conceptual, rather than empirical. Reviews of the climate literature indicate the importance of further empirical studies using the discrepancy concept. Payne and Pugh (1976) state that such studies have been "relatively scarce and not well designed . . . Theoretically, however, such research has been intriguing, and should be pursued" (p. 1166).

Early Concepts of Climate Discrepancy

Recent research has paid little attention to climate discrepancy although it was important in early theorizing. Three climate concepts were emphasized in this work. The primary concept was the individual's psychological climate. The psychological climate could be divided into two parts. One part represented what researchers have termed organizational climate. This was the average of all individuals' psychological climates from a particular setting. The remaining portion was the individual's climate discrepancy; the difference between his or her psychological climate and the average, organizational climate in a setting. Psychological climate scores were emphasized by researchers because they could be averaged to obtain organizational climate scores.

Psychological climate was represented in early climate research by Koffka's (1935) "behavior environment", and by Lewin's (1936) "life-space". Organizational climate and climate discrepancy were discussed in works by Murray (1938), Stern, Stein, and Bloom (1956), and Stern (1970).

A quotation from Stern (1970) illustrates the conceptual relationships between psychological climate, organizational climate and climate discrepancy:

There is a point at which this private world [psychological climate] merges with that of others: people who share a common ideology also tend to share common interpretations of the events in which they participate. This suggests a further distinction: between the truly idiosyncratic private beta press [climate discrepancy] and the mutually shared consensual beta press [organizational climate]. (p. 6)

Climate discrepancy corresponds to what Stern called private beta press and organizational climate corresponds to his consensual beta press.

It is very interesting that recent reviews of the climate literature (James and Jones, 1974) have emphasized that agreement or consensus is perhaps the only justifiable distinction between organizational and psychological climates, a conclusion supported here through much earlier theorizing.

Implications of Review

With few exceptions (Sells, 1953; Barker, 1968) climate researchers have averaged individual's psychological climate scores to derive organizational climate scores for work groups, or for other organizational units of interest (Drexler, 1977). Researchers using only these average organizational climate scores as predictors may therefore have treated a portion of systematic variance in climate perceptions (climate discrepancy) as if it were error; whereas researchers using only psychological climate scores have confounded climate discrepancy and organizational climate within a single measure. The possibility therefore exists that studies which have not explicitly included climate discrepancy may unintentionally have suppressed relationships between predictors and criteria by failing to recognize the predictive potential of climate discrepancy (by treating it as error) or by confounding discrepancy and organizational climate within a single summative

psychological climate score. This would lead to cancellation effects when such scores are used to predict individual performance and satisfaction. Our review shows that organizational climate and climate discrepancy are conceptually distinct components of individuals psychological climates. Based upon the importance placed on climate discrepancy by early researchers, further research seems warranted. The next section summarizes the limited empirical evidence from the two studies of climate discrepancy that have thus far been conducted; neither of these has been from an industrial setting.

Recent Research on Climate Discrepancy

Although only two studies have examined relationships between climate discrepancy, job performance and satisfaction, many more have dealt with the effects of discrepancy between personal characteristics such as needs, and situational variables like climate (Pritchard and Karasick, 1974; Downey, Hellriegel and Slocum, 1974; Joyce, Slocum, and Von Glinow, 1980) or task characteristics (Hackman and Oldham, 1975; Lawler and Hackman, 1973). The emphasis on fit between personal and situational variables was due to Lewin's (1936) widely accepted proposition that behavior is a function of both personality and environment. Because of this emphasis on person-situation interaction, it is not surprising that only one researcher has examined correlates of discrepancy between two types of situational variables: psychological and organizational climates. Two studies were conducted by Stern (1978). One was carried out in an educational setting, the other is a clinical analysis of a student "Gail Kristus".

In the first, Stern related measures of psychological climate and perceived institutional performance gathered from students and staff representing 35 colleges. Each subject in the study was assigned a discrepancy score (termed "deviancy") based upon the difference between their psychological

climate scores and the average organizational climate for his or her college. Climate discrepancy scores were not found to be correlated with individual's evaluations of organizational performance. Individual performance was not measured in this study.

In a related clinical study of a student, "Gail Kristus", Stern (1970) found a relationship between climate discrepancy and college satisfaction and adjustment. "Gail Kristus" is the fictitious name of a female undergraduate at Syracuse University. She had experienced extreme problems in adapting to the college setting, and ultimately left the university following two suicide attempts. Stern measured Gail's needs using the Activities Index (Stern, 1958). Her psychological climate was measured using the College Characteristics Index (Stern, 1958). When Stern compared Gail's individual need and (psychological) climate scores with the average needs and average (organizational) climate at Syracuse, he found that Gail's needs were "not very different from those of the other women" but that her climate perceptions "were very far removed from those of her freshmen classmates" [emphasis ours] (Stern, 1970, p. 239). He concluded "the clearest source of difficulty can be seen to be Gail's perception of her new environment" (Stern, 1970, p. 221). Gail's dissatisfaction appeared to be related to the discrepancy between her psychological climate and the organizational climate at Syracuse.

Both of these studies were carried out in non-industrial settings, and neither directly assessed individual performance and satisfaction. The available empirical evidence concerning relationships between climate discrepancy and these criteria is therefore very restricted. A related study by Schneider (1975b) provides the only other evidence bearing on the possible existence or non-existence of such relationships.

Schneider conducted a study in which a related concept of climate

discrepancy was correlated with measures of individual performance. The subjects of his study were 1125 newly contracted life insurance agents who had not yet begun their new jobs. Climate discrepancy was defined by Schneider (1975b) as the difference between a newly contracted agents climate expectations and the average organizational climate of the agency he or she had agreed to join. This concept differs from this paper's definition of discrepancy by emphasizing climate expectations rather than actual psychological climate, but Schneider's hypotheses and methodology were very consistent with the intentions of this study. Schneider found that discrepancy with particular agency climates was negatively associated with performance.

Although his concept of discrepancy is somewhat different from that developed here, its similarity does suggest a possible relationship with job performance.

This limited evidence implies that climate discrepancy may be related to both satisfaction and individual job performance. Climate discrepancy represents the difference between the average or organizational climate and the individual's psychological climate. Perceptions of climate discrepancy may represent the outcome of a process of social comparison in which the "individual compares some characteristic to a reference point in order to evaluate the characteristic in question." [emphasis ours] (Goodman, 1977, p. 97). We would therefore expect a correlation between an individual's personal discrepancy with the prevailing climate and his or her personal evaluation of that situation.

A similar argument holds when performance is the criterion. Individuals adapt to organizations through a learning process that relies heavily on consensual validation (James, Hater, Gent and Bruni, 1978). In this process, individuals learn what "behavior patterns are accepted, rewarded or punished by others" (Stern, Stein, and Bloom, 1956, p. 47). Consequently, the individual's discrepancy with the prevailing organizational climate should be related to performance in that setting. We hypothesize that climate

discrepancy should be related to job performance as well as job satisfaction.

A related and important issue concerns the relative predictive utility of climate discrepancy and organizational climate. Each represents a distinct part of the individual's psychological climate. A logical question, then, is to what extent does each component of psychological climate predict performance and satisfaction? It is possible, for example, that the effects of these components on important criteria cancel one another when combined into a single, summative psychological climate score? Another interesting possibility is that the effects of climate discrepancy or of organization climate may dominate one another in relation to a particular criteria. A finding by Stern suggests the possibility of such effects. He found that although Gail Kristus' satisfaction was drastically affected by her climate discrepancy, her academic performance was only slightly affected. Although her classroom attendance and preparation was erratic, she "did in fact receive an A and two B's in the three courses in which she was graded" (Stern, 1970, p. 200). These results are only suggestive, but do indicate the need for empirical research comparing the effects of climate discrepancy and organizational climate on job performance and satisfaction.

The review indicates that climate discrepancy is an important, but un-researched, concept. Psychological climates are composed of two portions; an organizational component which is shared with other individuals, and climate discrepancy which represents each person's unique perspective on the organization climate. Climate discrepancy represents a refinement of the concepts of psychological and organizational climate which clarifies the distinction between these often confused concepts.

Methodological Problems with Discrepancy Scores

Methodological problems have limited the usefulness of previous research using discrepancy scores, especially in need satisfaction research (Wall and

Payne, 1973). Payne and Pugh (1976), after a review of the studies relating discrepancy between personality and climate to performance and satisfaction, concluded that "on the whole, discrepancy scores have not explained how personality, environment, or the interaction between the two relates to other variables" (p. 1164). In some measure, this failure is due to several methodological problems relating to the measurement of discrepancy scores.

One problem concerns the type of organizational climates that have been used as a basis for computing the discrepancy scores. Although our review indicates that these climates should be formed on the basis of agreement or consensus, no previous research has utilized this approach. This failure has two unintended consequences.

First, organizations may contain multiple climates defined by consensus (Schneider and Snyder, 1975; Joyce and Slocum, 1979; Johnston, 1976; Drexler, 1977, Howe, 1977). In such cases, computation of discrepancy with an overall climate confounds several potentially important discrepancies within one summative measure. A "cancellation effect" may predominate, in which positive and negative relationships between criteria and discrepancies with multiple climates cancel one another when an overall average climate discrepancy is used. "Significant relationships cannot be obtained when fundamentally different subgroups are confounded within the same criterion sample" (Stern, Stein, and Bloom, 1956, p. 235). Cancellation effects were found in the study by Schneider (1975) discussed previously. His results indicated that discrepancy from particular climates was important, whereas discrepancy with other climates had no consequences for performance. More importantly,

discrepancy with Schnieder's "Theory Y/Systems 4" climate was negatively related to performance whereas discrepancy with his "Theory X" climate was positively related to performance. In the aggregate analysis, these effects cancelled one another.

A second problem is that mean climate scores for formal organizations units, such as work groups or divisions, "may have little or no reliability due to lack of consensus within these units" (Schneider, 1975, p. 468). Consequently, when discrepancy scores are computed with respect to a priori formal groups these scores are unreliable, leading to insignificant relationships with job performance and satisfaction. Defining organizational climates on the basis of consensus of individuals' psychological climates has the statistical advantage of ensuring that the mean organizational climates are reliable by definition. After reviewing a number of climate studies using discrepancy scores Payne and Pugh (1976) reached the following similar conclusions:

a group score may not have adequately reflected a given organizational climate . . . Future researchers need to develop measures which reflect a pattern of scores within an organization [multiple climates] and employ techniques [such as] hierarchical clustering [for their identification] the use of group or organizations means appears questionable. We feel that studies which use complex scores will have more empirical and theoretical utility (1976, p. 1167).

Another significant problem concerning the use of discrepancy scores is that researchers have often not treated such scores multidimensionally. In the few cases where multidimensional scores have been used the results have been encouraging. The study by Schnieder (1975), which demonstrated relationships between one type of climate discrepancy and job performance, utilized the Mahalanobis d^2 statistic as a measure of discrepancy. Pervin (1967) also used a complex measure of discrepancy in studies of person-situation interaction. Discrepancy was the "sum of the absolute difference in ratings" of personal and situational factors (Pervin, 1967, p. 294). Pervin concluded that complex discrepancy scores were more useful predictors of satisfaction than were simple scores.

Perhaps the relative success of these studies may be due to statistical advantages inherent in multidimensional scores. Calculation of simple correlations using unidimensional discrepancy scores, and even the application of more sophisticated techniques such as multiple regression, have statistical limitations. When simple correlations are used, interactions of discrepancies with several different climate dimensions cannot be assessed. The difficulties with this type of analysis are well known, and commonly lead researchers to use a technique, such as regression analysis, in which multiple predictors and their interactions may be examined jointly.

There are two problems with the regression approach. First, when more than two or three dimensions of climate are considered, the general linear model representing all possible interactions between discrepancies with these dimensions becomes unwieldy. Excessively large sample sizes are required to generate acceptable estimates of the statistical significance of the interaction effects. Second, the predictors in such a "saturated" (Draper and Smith, 1966) interaction model are likely to exhibit high degrees of multicollinearity, resulting in low statistical power when testing for interactions (Johnston, 1960, Kenney, 1979). It is therefore advisable to treat climate as a multidimensional score and to use statistics, such as the Mahalanobis d^2 , to measure discrepancy from climates based upon consensus.

The few studies that have used discrepancy scores to investigate related problems such as person-situation interaction have been troubled by methodological problems. Our review indicates that these problems may be overcome by 1) using appropriate statistical techniques like hierarchical clustering, to identify multiple organizational climates, and 2) by using statistics, such as the Mahalanobis d^2 , to represent a multidimensional discrepancy score. Such statistics economically account for interactions, are consistent with previous successful discrepancy

research, and correctly portray climate as a multi-dimensional concept.

With these methodological refinements, we would expect climate discrepancy to be related to an individual's job performance and satisfaction. The relative importance of discrepancy and organizational climate as predictors of job satisfaction and performance has not been established. The following sections describe the methods and results of a study designed to test these exploratory hypotheses, concluding with suggestions for further research refining the concepts of psychological and organizational climate.

Method

Setting and Subjects

Data for this study was collected within three plants operated by a heavy duty truck manufacturer. The plants were located in close proximity to one another in the northeastern United States. The respondents were 178 first line foremen.

All of the subjects were male. The mean age of the respondents was 40 years, having been with company an average of 11 years, and in their present position of foremen for 4.3 years. The median salary earned was \$15,000. Over 50% of the sample had completed at least two years of college.

The distribution of foremen among functions within the three plants was as follows. Plant 1 employed 31 foremen. Of these, 27 supervised the assembly of truck axles; the remaining 4 foremen supervised maintenance operations.

Thirty-one of the foremen were employed in the second plant. The distribution of foremen among the functions performed in this plant was as follows: sheet metal fabrication, 18; wheel and axle machine shop, 4; fire engine body fabrication, 4; and production control, 5.

The remaining 116 foremen were from the third plant. This is the largest plant at the facility, and is responsible for the assembly of complete trucks. The foremen were distributed among functions in this plant as follows: Heavy chassis production 12; light chassis production, 18; frame assembly, 3; cab construction, 13; final assembly, 16; and production control, 49.

Measurement of the Variables

With the exception of job performance measures, the data for this study was collected using questionnaires. The questionnaires were administered by the researchers on company premises during working hours, in controlled groups that ranged in size from 15 to 40 members.

Work Performance

Each foreman's performance was evaluated by his immediate supervisor using a fifteen item rating scale. The measure was developed by the host organization and was used for normal personnel functions, although the ratings obtained for this study were taken only for research purposes. The data should therefore be free of rater bias associated with measures of work performance taken for non-research purposes (Guion, 1965). Raw scores on each dimension were standardized, based upon the mean and variance for that dimension for the population of foremen, and converted to stanine scores. Since these scores were highly intercorrelated, total performance scores were obtained by summing across all fifteen items as recommended by Nunnally (1967). This yielded a normally distributed performance index that could theoretically range from 0 to 1500. The mean performance score in this sample was 757 with a standard deviation of 205. The internal consistency reliability (coefficient alpha) of this index was .96.

Job Satisfaction

Job satisfaction was measured using scales from the Job Descriptive Index

(Smith, Kendall and Hulin, 1969). Schneider and Snyder (1975) noted that Smith, et al. mixed descriptive and evaluative items in developing the work satisfaction scales for the JDI. Since climate and satisfaction are often distinguished along precisely these dimensions, the possibility exists that previous climate research employing the JDI may inadvertently have analyzed relationships among alternative climate measures. This possibility is increased in view of findings by Smith, Smith, and Rollo (1974), in which both descriptive and evaluative factors were obtained when the original work scale of the JDI was reanalyzed. To avoid such confounding, the work scale was factor analyzed using a principal components analysis with varimax rotation to determine if a dual factor structure existed. As in the Smith et al., (1974) research, two factors were obtained that corresponded to descriptive and evaluative dimensions. Only the evaluative scale was analyzed in this research. The internal consistency reliability (coefficient alpha) for this scale was .87. The other scales from the JDI used in this research were satisfaction with pay, promotion, supervision and coworkers. The reliabilities of these scales ranged from .73 to .86.

Psychological Climate

Psychological climate was measured using scales developed by Campbell and Pritchard and reported in research by Pritchard and Karasick (1973). The managers were asked to describe, but not evaluate, the climate within their respective plants. This process was intended to maximize the respondent's use of actual experiences as a basis for describing a climate. By moving the referent of the scale "closer" to them (that is, by using the plant rather than the organization as the referent for the descriptions), managers from different plants were, therefore, describing different organizational practices and procedures. Items forming ten a priori scales were selected on the basis of theoretical relevance and the previous experience of other researchers

using this instrument (Hellriegel and Slocum, 1974). These scales were: autonomy, social relations, level of rewards, performance-reward dependency, motivation to produce, status polarization, flexibility-innovation, supportiveness, decision centralization, and structure.

A series of analyses assessed the meaning and reliability of these scales in this setting. First, the ten a priori scales were subjected to a principal factors analysis (Harman, 1976). A six factor orthogonal solution which explained 68% of the common variance was selected as most interpretable. The items from the a priori scales which loaded on these factors were reanalyzed to confirm the obtained structure. The reduced variable set exactly reproduced the 6 factor solution. The final six dimensions, numbers of items comprising each scale, and associated internal consistency reliabilities are as follows:

1. Rewards (7 items, $\alpha = .82$): The extent to which adequate rewards are available within the organization and are contingent upon performance.
2. Autonomy (2 items, $\alpha = .70$): The extent to which employees are allowed to plan and schedule their work as they choose to, as determined by rules and regulations, and the actions of co-workers.
3. Motivation to Achieve (3 items, $\alpha = .59$): The degree to which members of the organization are viewed as attempting to excel, to address difficult problems, or to advance themselves.
4. Centrality (3 items, $\alpha = .54$): The degree which plant management is insensitive to the interests, needs, and aspirations of the managers reporting to them.
5. Closeness of Supervision (3 items, $\alpha = .56$): The extent to which foremen's superiors actively direct or intervene in the activities of their subordinates.

6. Peer Relations (3 items, $\alpha = .53$): The degree to which supervisors at equivalent organizational levels maintain warm and friendly relations.

Reliabilities for all scales exceeded the level recommended by Nunnally. In another study by Joyce, Slocum and Abelson, (1977) that examined the causal relationship between climate and leader behavior, test-retest reliabilities of this instrument ranged from .56 to .82 over a 14 month time lag.

Identification of Organizational Climates

Organization climates were identified using a series of analyses that clustered individuals on the basis of profile similarity for the six climate dimensions. Clustering was performed within plants because managers were asked to describe the climate of their plant.

Both hierarchical and non-hierarchical clustering techniques were utilized to derive organizational climates. Hierarchical techniques begin clustering at the individual level and successively aggregate individuals into groups, these initial groups into larger groups, and so on until one final group (the entire data set) is resolved. The researcher must decide at what point to terminate clustering, or which level in the hierarchy "best" represents the organization's climates. When individuals are allocated to climates using hierarchical methods, the results at succeeding levels of clustering are generally dependent on previous steps in the process. Consequently, allocation decisions made early in the clustering affect subsequent clusters, and non-optimum clusters are generated (Wishart, 1969). Non-hierarchical clustering methods should then be used to refine these initial climates to obtain a better solution.

Initial climates were determined using Ward's (1963) method. Ward's procedure is a hierarchical technique that minimizes within cluster variance

while maximizing the separation between clusters. The technique is perhaps the best hierarchical clustering algorithm. Ward's procedure provides an index of the "cost" of further reducing the number of organizational climates in terms of the increase in pooled within group sum of squares. When further clustering produced a discontinuity in the plot of sum of squares versus the number of clusters, it indicated that dissimilar groups were being combined and hierarchical clustering was terminated (see Ward and Hooke, 1963, and Schnieder, 1975, for similar examples of this procedure).

After a set of initial climates had been selected in this fashion, Wishart's (1969) non-hierarchical RELOC procedure was used to optimize the results. Each individual was removed from his initial climate, and euclidean distances to all climate means were computed. If reallocation to an alternative climate improved the solution (by reducing the pooled within cluster variance in climate perceptions), the subject was assigned to this climate, and new climate means were computed. This procedure was repeated until climate assignments were stable, and subsequent iterations of the procedures failed to produce a decrease in pooled within cluster variance.

Plant 1 was found to contain 3 organizational climates, Plant 2, 2 climates, and Plant 3, 8 climates. The higher number in Plant 3 was probably due to the number of respondents from that plant. These findings support previous research by Schneider and Snyder (1974), Johnston (1976), Drexler (1977), and Jones and James (1977) that multiple climates can be found within single formal organizations.

Two manipulation checks were performed to assess the adequacy of the clustering procedures. First, the average discrepancy within each organizational climate (between individuals, within clusters) was compared to to the discrepancy between the organizational climate and the most similar other organizational climate from that plant. The minimum ratio of

between to within cluster discrepancy (using a measure based upon d^2) provides a lower bound measure of internal consistency reliability. These statistics were 7.3 in Plant 1, 14.0 in Plant 2, and 7.2 in Plant 3, indicating reliable clusters.

The second check utilized multivariate and univariate analyses of variance to determine if differences existed between the final clusters' climate profiles. These results are shown in Table 1.

INSERT TABLE 1 ABOUT HERE

With the exception of the closeness of supervision climate dimensions within Plant 2, all other dimensions showed highly significant effects due to clusters. The organizational climates therefore met requirements of internal consistency and discrimination.

RESULTS

Hypothesis 1 Relationships between Climate Discrepancy and Satisfaction

The first hypothesis proposed that climate discrepancy would be significantly related to measures of individual's job satisfactions. In order to test this hypothesis a series of regression analyses were run within each of the three plants studied in this research. Each of the five satisfaction measures was regressed on the set of climate discrepancy scores computed for each individual, relative to the organizational climates from his plant. Since Plant 1 contained 3 organizational climates, subjects from that plant were therefore each assigned 3 discrepancy scores. Subjects from Plants 2 and

3 were similarly assigned 2 and 3 discrepancy scores respectively; these scores were used as predictors of the five dimensions of job satisfaction.

INSERT TABLE 2 ABOUT HERE

The results of these analyses are shown in Table 2.

A backward elimination regression algorithm (Draper and Smith, 1966) was used to identify "best" regression equations for each of the dimensions of satisfaction. This procedure identified which of the several climate discrepancies within each plant was responsible for the overall significant regression. Blanks in Table 2 therefore indicate that the contribution to explained variance in job satisfaction due to discrepancy with a particular organizational climate was insignificant. Only statistically significant partial regression coefficients are shown in the table.

Within each of the three plants, climate discrepancy was significantly related to job satisfaction. In fact, of the fifteen possible regressions of satisfaction on climate discrepancy only 2 were non-significant. The magnitude of the explained variance in job satisfaction was appreciable, averaging 27% across plants.

Since both climate and job satisfaction were measured using questionnaires, the possibility exists that common method variance might account for these results. Although some method variance undoubtedly exists, these results cannot entirely be explained by method variance because of two reasons: first, for two of the fifteen regressions no significant overall regressions were obtained; and second, because of the absence of relationships between discrepancy with particular climates and the criteria. For method variance to entirely account for these findings, we would need to propose a complex "differential" model in which method variance operates only for particular climate discrepancies with re-

spect to particular facets of job satisfaction. Such a model is unlikely and contrary to the concept of a common method variance. Climate discrepancy appears to be an important predictor of job satisfaction.

Hypothesis 2 Relationships between Climate Discrepancy and Performance

The second hypothesis proposed that climate discrepancy should be related to measures of individual's job performance. This hypothesis was tested using regression analyses in which job performance was regressed on each individual's climate discrepancy scores using procedures equivalent to those described above when job satisfaction was the criteria.

The data indicated that two of the three possible regressions were insignificant. In Plant 3, discrepancy was significantly related to performance ($p < .01$), but explained only 7% of the variance. These results suggest that climate discrepancy may be a more important predictor of job satisfaction than of job performance, a finding consistent with Stern's clinical findings concerning the satisfaction and performance of Gail Kristus.

Relative Effects of Organizational Climate and Climate Discrepancy

A third analysis assessed the relative effects of organizational climate and climate discrepancy on job performance and satisfaction. The results of this analysis are shown in Table 3.

INSERT TABLE 3 ABOUT HERE

An additional series of regression analyses were conducted using performance and satisfaction as the dependent variables and a set of dummy variables coded to represent membership in particular organization climates, as independent

variables. This analysis assessed the magnitude of the relationship between organization climate and the criteria. The resulting proportions of explained variance in the criteria were then compared with the amount explained by the discrepancy analyses which tested the hypotheses concerning climate discrepancy alone.

Organizational climate explained a larger amount of variance in job performance across plants than did climate discrepancy. In plants 1 and 2 the proportions of explained variance in job performance due to organization climate were appreciable, accounting for 21% and 16% of the variation in work performance on the basis of organization climate alone. These results compare favorably with coefficients of determination from selection studies in which elaborate predictor batteries are often used, and validity coefficients rarely exceed .5 (Dunnette, 1966). These results suggest the importance of further research utilizing consensus rather than formal organization grouping as a basis for aggregating psychological climate scores to represent an organization climate (s).

The results using job satisfaction are directly contrary to those obtained using job performance. Climate discrepancy explained greater average amounts of variance in satisfactions than organization climate in two of the three plants, and a greater average amount of variance across plants (23.3% vs. 17.8% for organizational climate) as shown in Table 4. Since these results cannot be discounted on the basis of common method variance, and because the results for job performance are not subject to method bias, it appears that climate discrepancy is a more important predictor of job satisfaction than organizational climate.

A comparison of results using job performance and satisfaction as criteria indicates that organization climate is the more important predictor of job performance whereas climate discrepancy is a more important predictor of job satisfaction. These results from an organizational setting are consistent with the clinical findings of Stern (1970) concerning Gail Kristus.

Although climate discrepancy and organization climate alternate in relative importance as predictors of job performance and satisfaction; each was significantly related to satisfaction or performance in at least one of the plants. This finding indicates that both are potentially important predictors of these criteria, and deserving of further research despite the fact that one or the other seems to predominate in its effects.

Discussion

The results of this study have a number of implications for continuing research concerning relationships between psychological and organizational climates and their effects on individual and organizational outcomes. Distinguishing climate discrepancy as a third climate concept that relates psychological and organizational climate had two consequences. First, this relatively unresearched variable was significantly related to both individual job performance and satisfaction. These preliminary findings suggest that climate discrepancy may be a more important correlate of job satisfaction than is organization climate, which appeared to be the more important predictor of job performance. If these differential effects generalize to other research settings, studies that have employed only psychological climate scores may have shown "diluted" relationships between climate and these criteria. The second finding of this study was the magnitude of the relationships between climate discrepancy and the criteria. Although discrepancy concepts have received considerable conceptual attention, the empirical relationships between discrepancy and job performance and satisfaction have been small. In fact, Pervin's (1968) study of college discrepancy, often cited by discrepancy researchers, explained only a meager 7% of the variance in criteria. In this study, discrepancy explained 21% of the variance in work satisfaction, a result that cannot be discounted on the basis of method variance.

If further studies also support the importance of the discrepancy concept, a number of issues will require further research. These issues relate to potential uses of the discrepancy concept for refining and extending research on psychological and organizational characteristics which interact to cause perceptions of climate discrepancy.

Climate discrepancy may be useful for further clarifying distinctions between psychological and organizational climates. This research examined correlates of discrepancy with organizational climates based upon consensus of individual's perceptions. However, other types of climate discrepancy may also be important. Organization or aggregate climates may be based on a number of different criteria for aggregation, such as membership in work groups, divisions, or hierarchical levels. Discrepancy scores may be defined with respect to each. It is probable that there are several ways of conceiving of organizational climate and discrepancy that are useful depending on the objectives of the study. Further research concerning the relative effects of different types of discrepancy as well as different types of organizational climate should help in refining both concepts, and clarifying relationships between them. However, when a priori organizational units such as work groups are used as a basis for forming organizational climates, rather than the consensus criteria used here, we must make doubly sure that scores representing these climates are reliable to ensure that the discrepancy scores will be as well!

If further studies indicate that climate discrepancy is useful in refining and clarifying the concepts of psychological and organizational climate we should become interested in the causes of discrepancy. Currently very little is known concerning the causes of climate perceptions, and thus discrepancy. For example, Herman Dunham, and Hulin (1975) showed that significant relationships existed between membership in work groups and psychological climate scores. When Howe (1977) attempted to a group climate construct, and psychological

climate scores were aggregated within formal work groups and means examined for construct validity, they were found to be unreliable. This indicates that information concerning membership in work groups alone is insignificant to allow the determination of reliable organization climates scores which could then be used to form reliable discrepancy scores. Other factors are therefore needed to explain the formation of discrepancy scores, (Jones and James, 1977).

Factors other than work group membership apparently influence climate perceptions. Joyce (1977) examined a number of possible individual and organizational predictors of climate perceptions. Predictors which were successful in one setting were not correlated with climate perceptions in others. Joyce and Slocum (1979) suggested the possibility of influence from informal social processes, and Joyce, Walker, and Howard (1979) demonstrated linkages between membership in tasks, friendship, and influence networks, and psychological climate in a simulated organization. All of these studies have obtained only tentative conclusions, and none have addressed climate discrepancy directly. Further research is needed to uniform the importance of discrepancy concepts, and should this be successful, to extend the concept further by identifying new theoretical uses for the concept, and as well as its causes in individual and organizational characteristics.

Table 1

Results of Analysis of Variance - Differences in Climate Perceptions Between Clusters from Three Plants

Climate Dimension	PLANT					
	2		3		4	
	F	P	F	P	F	P
Multivariate	df=12,48		df=6,25		df=42,486	.001
	11.14	.001	16.37	.001	17.73	
Univariate	df=1,30		df=2,29		df=7,108	
Rewards	6.31	.01	35.15	.001	24.38	.001
Autonomy	7.34	.01	6.17	.02	11.62	.001
Mot/Ach	5.98	.01	62.82	.001	13.17	.001
Centrality	5.21	.01	12.41	.001	19.68	.001
Peer Rels.	15.18	.001	10.63	.01	25.60	.001
Closeness Sup.	16.82	.001	10.63	.01	10.47	.001

Table 2

Regressions of Job Satisfactions on Climate
Discrepancy within Three Plants of a
Truck Manufacturing Facility

Criterion	Climate Discrepancy								R ²	
	1	2	3	4	5	6	7	8		
Plant 1										
Work	.392 ^a									.13 ^a
Sup	.453 ^a	-.432 ^a								.26
Cowork		-.417 ^a								.15
Pay										NS
Prom	.511 ^b	-.528 ^b								.61
Plant 2										
Work										NS
Sup		-.443 ^a								.17
Cowork			.508 ^b							.23
Pay		-.486 ^b								.21
Prom		-.414 ^b	.536 ^b							.54
Plant 3										
Work		-.360 ^b					.231 ^b			.18
Sup			.325 ^b	-.450 ^b						.24
Cowork		-.436 ^b					.229 ^c			.24
Pay		-.285 ^b	.225 ^a							.11
Prom		-.486 ^b	.440 ^a							.39

a $p < .05$ b $p < .01$ c Plant 1 contained 2 climates, $\bar{n} = 31$ d Plant 2 contained 3 climates, $\bar{n} = 31$ e Plant 3 contained 8 climates, $\bar{n} = 116$

Table 3

Coefficients of Determination (R^2) for Regressions
of Job Performance and Work Satisfactions on
Organization Climate and Climate Discrepancy
in Three Plants

Criterion	PLANT					
	1		2		3	
	OC ^b	CD ^c	OC	CD	OC	CD
Performance	.21	.05 ^a	.16	.07 ^a	.05	.07
Work Sat	.07	.01 ^a	.23	.13	.12	.18
Sup Sat	.00	.17	.45	.26	.08	.24
Cowork Sat	.03	.23	.23	.15	.19	.24
Pay Sat	.00	.21	.02	.06 ^a	.04	.11
Prom Sat	.33	.54	.58	.61	.28	.39
Mean Sat	.09	.23	.30	.24	.14	.23

^aThese figures represent the proportion of variance explained by the first predictor entered in the forward selection, although no significant regression was obtained

^bOC = Organization Climate

^cCD = Climate Discrepancy

REFERENCES

- Andrews, J.D.W. The achievement motive and advancement in two types of organizations. Journal of Personality and Social Psychology, 1967, 6, 163-168.
- Barker, R.G. On the nature of the environment. Journal of Social Issues, 1963, 19, 17-38.
- Barker, R.G. Ecological psychology: Concepts and methods for studying the environment of human behavior. Stanford: Stanford University Press, 1968.
- Brand, G. Intentionality, reduction, and intentional analysis in Husserl's later manuscripts. In J. Kockelmans (ed.), Phenomenology: The Philosophy of Edmund Husserl and Its Interpretations. Garden City, New York: Doubleday Anchor Books, 1967, 197-217.
- Burns, T. and Stalker, G.M. The Management of Innovation. London: Tavistock Publications, 1961.
- Campbell, J.P., Dunnette, M.D., Lawler, E.E. III, and Weick, K.E., Jr. Managerial Behavior, Performance and Effectiveness. New York: McGraw-Hill 1970.
- Downey, H.K., Hellreigel, D., Phelps, M., and Slocum, J.W. Jr. Organizations climate and job satisfaction: A comparative analysis. Journal of Business Research, 1974, 2, 233-248.
- Dunnette, M.D. Personnel Selection and Placement. Belmont, Ca.: Brooks/Cole, 1966.
- Draper, N., and Smith, H. Applied Regression Analysis. New York: John Wiley & Sons, 1966.
- Drexler, J.A. Organizational climate: Its homogeneity within organizations. Journal of Applied Psychology, 1977, 62, 38-42.
- Dunham, R.B. Reactions to job characteristics: Moderating effects of the organization. Academy of Management Journal, 1977, 20, 42-65.
- Estes, W.K., Kurt Lewin. In W.K. Estes, et al..(eds.), Modern Learning Theory. New York: Appleton-Century-Crofts, 1954.
- Fleishman, E.A. Leadership climate, human relations training, and supervisory behavior. Personnel Psychology, 1953, 6, 205-222.
- Franklin, J. Relations among four social-psychological aspects of organizations. Administrative Science Quarterly, 1975, 20, 422-433.
- Gavin, J. Organizational climate as a function of personal and organizational variables. Journal of Applied Psychology, 1975, 60, 135-139.

- Goodman, P.S. Social comparison processes in organizations. In Staw, B.M., and Salancik, G.R. (eds.), New Directions In Organizational Behavior. Chicago: St. Clair Press, 1977, 97-132
- Golembiewski, R. Organizational properties and managerial training: Testing alternative models of attitude change. Academy of Management Journal, 1970, 13, 13-34.
- Guion, R.M. A note on organizational climate. Organizational Behavior and Human Performance, 1973, 9, 120-125.
- Guion, R.M. Personnel Testing. New York: McGraw-Hill, 1965
- Hackman, J. and Oldham, G. Development of the Job Diagnostic Survey. Journal of Applied Psychology, 1979, 60, 157-166.
- Hall, C. and Lindzey, G. Theories of Personality. New York: John Wiley & Sons, 1967.
- Hand, H., Richards, M., and Slocum, J.W. Organization climate and the effectiveness of human relations training program. Academy of Management Journal, 1973, 16, 185-195.
- Harman, Harry H. Modern Factor Analysis. Chicago: University of Chicago Press, 1976.
- Hellreigel, D. and Slocum, J.W., Jr. Organizational climate: Measures, research, and contingencies. Academy of Management Journal, 1974, 17, 255-280.
- Herman, J.B., Dunham, R.G., and Hulin, C.L. Organizational Behavior and Human Performance, 1975, 13, 206-232.
- Howe, J.G. Group climate: An exploratory analysis of construct validity. Organizational Behavior and Human Performance, 1977, 19, 106-125.
- Husserl, E. The thesis of the natural standpoint and its suspension. In W. Gibson, Ideas: General Introduction to Phenomenology. London: George Allen & Unwin, Ltd., 1931, 27-32.
- James, L., Hater, J., Gent, M., and Bruni, J. Psychological climate: Implications from cognitive social learning theory and interactional psychology. Personnel Psychology, 1978, 31, 783-814.
- James, L. R. and Jones, A.P. Organizational climate: A review of theory and research. Psychological Bulletin, 1974, 81, 1096-1112.
- Johnston, R. A new conceptualization of source of organizational climate. Administrative Science Quarterly, 1976, 21, 95-103.
- Jones, A.P. and James, L.R. Psychological and Organizational Climate: Dimensions and Relationships. Paper presented at American Psychological Association, San Francisco, California, September, 1977.

- Joyce, W.F. Antecedents and Consequents of Collective Climates in Organizations. Unpublished doctoral dissertation, College of Business Administration, The Pennsylvania State University, University Park, Pennsylvania, 1977.
- Joyce, W.F., Slocum, J.W. and Abelson, M. A causal analysis of psychological climate and leader behavior relationships. Journal of Business Research, 1977, 5, 261-273.
- Joyce, W.F., and Slocum, J.W. Climates in Organizations. In S. Kerr (ed.) Organizational Behavior, San Francisco: Grid, 1979.
- Joyce, W.F., Walker, G., and Howard, P. Organizational climate and social networks: A perspective from organizational simulation. Paper presented at the meeting of the Academy of management, Atlanta, Ga., August 1979.
- Joyce, W.F., Slocum, J.W., and Van Gliuw, M. Person-situation interaction: A test of competing models of fit. Working Paper of the Center for the Study of Organizational Innovation, The University of Pennsylvania, Philadelphia, Pa.
- Kaplan, A. The Conduct of Inquiry. San Francisco: Chandler Publishers, 1964.
- Kenney, D.A. Correlation and Causality. New York: John Wiley and Sons, 1979.
- Knockelmans, J. What is phenomenology? Phenomenology: The Philosophy of Edmund Husserl and its interpretation. Garden City, New York: Doubleday Anchor Books, 1967.
- Koffka, K. Principles of Gestalt Psychology. New York: Harcourt, Brace, 1935.
- Lewin, J. Principles of Topological Psychology. New York: McGraw-Hill, 1936.
- Litwin, G. and Stringer, R. Motivation and Organizational Climate. Boston: Harvard University Press, 1968.
- Lyon, H.L. and Ivancevich, J.M. An exploratory investigation of organizational climate and job satisfaction in a hospital. Academy of Management Journal, 1974, 17, 635-648.
- McLeod, R.B. The place of phenomenological analysis in social psychological theory. In J.H. Rohrer and M. Sherif (eds.), Social Psychology at the Crossroads. New York: Harper, 1951.
- Mahler, W. In K. Lewin, Principles of Topological Psychology. New York: McGraw-Hill, 1936.
- Merleau-Ponty, M. What is phenomenology? From Merleau-Ponty, M. Phenomenology in Perception, translated by Smith, C. London: Routledge and Kegan Paul, Ltd., 1962.
- Mey, H. Field Theory: A Study of its Application in the Social Sciences. London: Routledge and Kegan Paul, Ltd., 1972.
- Meyer, H.H. Achievement motivation and industrial climates. In R. Taguiri and G.H. Litwin (eds.), Organizational climate: Explorations of a concept. Boston: Division of Research, Graduate School of Business Administration, Harvard University, 1968.

- Muchinsky, P.M. An assessment of the Litwin and Stringer organization climate questionnaire: An empirical and theoretical extension of the Sims and LaFollette study. Personnel Psychology, 1976, 26, 371-392.
- Murray, Henry A. Explorations in Personality. New York: Oxford University Press, 1938.
- Newman, J.E. Understanding the organizational structure-job attitude relationship through perceptions of the work environment. Organizational Behavior and Human Performance, 1975, 14, 371-397.
- Newman, J. Development of a measure of perceived work environment (PWE). Academy of Management Journal, 1977, 20, 520-534.
- Nunnally, J. Psychometric theory. New York: McGraw-Hill, 1967.
- Parsons, T. Structure and Process in Modern Societies. New York: The Free Press of Glencoe, 1960.
- Payne, R.L., Fineman, S., and Wall, T.C. Organization climate and job satisfaction: A conceptual synthesis. Organizational Behavior and Human Performance, 1976, 16, 45-62.
- Payne, R.L. and Pugh, D.C. Organizational structure and climate. In M.D. Dunnette (ed.), Handbook of Industrial and Organizational Psychology. Chicago: Rand McNally, 1976, 111-117/4.
- Perrow, C. A framework for the comparative analysis of organizations. American Sociological Review, 1967, 32, 194-208.
- Pervin, L. Performance and satisfaction as a function of individual-environment fit. Psychological Bulletin, 1968, 69, 56-68.
- Peterson, R. The interaction of technological process and perceived organizational climate in Norwegian firms. Academy of Management Journal, 1975, 18, 288-299.
- Pritchard, R., and Karasick, B. The effect of organizational climate on managerial job performance and job satisfaction. Organizational Behavior and Human Performance, 1973, 9, 126-146.
- Schneider, B. Organizational climates: Individual preferences and organizational realities revisited. Journal of Applied Psychology, 1975(b), 60, 459-465.
- Schneider, B. Organizational climates: An essay, Personnel Psychology, 1975, 28, 447-479.
- Schneider, B, and Snyder, R. Some relationships between job satisfaction and organizational climate. Journal of Applied Psychology. 1975, 60, 318-328.
- Sells, S.B. Dimensions of stimulus situations which account for behavior variances. In S.B. Sells (ed.) Stimulus Determinants of Behavior. New York: Ronald Press, 1963, 3-15.

- Smith, P., Kendall, L., and Hulton, C. The measurement of satisfaction in work and retirement: A strategy for the study of attitudes. Chicago: Rand McNally, 1969.
- Smith, P., Smith, O., and Rolo, J. Factor structure for blacks and whites of the Job Descriptive Index and its discrimination of job satisfaction. Journal of Applied Psychology, 1974, 59, 99-100.
- Stern, G. People in Context: Measuring person-environment congruence in education and industry. New York: John Wiley and Sons, 1970.
- Stern, G., Stein, M. and Bloom B. Methods in personality assessment. Glencoe, Ill.: The Free Press, 322-326
- Wall, T. and Payne, R. Are deficiency scores deficient? Journal of Applied Psychology, 1973, 58, 322-326.
- Ward, J. Hierarchical grouping to optimize an objective function. Journal of the American Statistical Association, 1963, 58, 236-244.
- Ward, J., and Hook, M. Application of a hierarchical grouping procedure to a problem of grouping profiles. Educational and Psychological Measurement, 1963, 23, 69-82.
- Wishart, D. Clustan IC Users Manual. Fife, Scotland: University of St. Andrews, 1969.

The following papers are currently available in the Edwin L. Cox School of Business Working Paper Series.

- 79-100 "Microdata File Merging Through Large-Scale Network Technology," by Richard S. Barr and J. Scott Turner
- 79-101 "Perceived Environmental Uncertainty: An Individual or Environmental Attribute," by Peter Lorenzi, Henry P. Sims, Jr., and John W. Slocum, Jr.
- 79-103 "A Typology for Integrating Technology, Organization and Job Design," by John W. Slocum, Jr., and Henry P. Sims, Jr.
- 80-100 "Implementing the Portfolio (SBU) Concept," by Richard A. Bettis and William K. Hall
- 80-101 "Assessing Organizational Change Approaches: Towards a Comparative Typology," by Don Hellriegel and John W. Slocum, Jr.
- 80-102 "Constructing a Theory of Accounting--An Axiomatic Approach," by Marvin L. Carlson and James W. Lamb
- 80-103 "Mentors & Managers," by Michael E. McGill
- 80-104 "Budgeting Capital for R&D: An Application of Option Pricing," by John W. Kensinger
- 80-200 "Financial Terms of Sale and Control of Marketing Channel Conflict," by Michael Levy and Dwight Grant
- 80-300 "Toward An Optimal Customer Service Package," by Michael Levy
- 80-301 "Controlling the Performance of People in Organizations," by Steven Kerr and John W. Slocum, Jr.
- 80-400 "The Effects of Racial Composition on Neighborhood Succession," by Kerry D. Vandell
- 80-500 "Strategies of Growth: Forms, Characteristics and Returns," by Richard D. Miller
- 80-600 "Organization Roles, Cognitive Roles, and Problem-Solving Styles," by Richard Lee Steckroth, John W. Slocum, Jr., and Henry P. Sims, Jr.
- 80-601 "New Efficient Equations to Compute the Present Value of Mortgage Interest Payments and Accelerated Depreciation Tax Benefits," by Elbert B. Greynolds, Jr.
- 80-800 "Mortgage Quality and the Two-Earner Family: Issues and Estimates," by Kerry D. Vandell
- 80-801 "Comparison of the EEOCC Four-Fifths Rule and A One, Two or Three σ Binomial Criterion," by Marion Gross Sobol and Paul Ellard
- 80-900 "Bank Portfolio Management: The Role of Financial Futures," by Dwight M. Grant and George Hempel
- 80-902 "Hedging Uncertain Foreign Exchange Positions," by Mark R. Eaker and Dwight M. Grant

- 80-110 "Strategic Portfolio Management in the Multibusiness Firm: An Implementation Status Report," by Richard A. Bettis and William K. Hall
- 80-111 "Sources of Performance Differences in Related and Unrelated Diversified Firms," by Richard A. Bettis
- 80-112 "The Information Needs of Business with Special Application to Managerial Decision Making," by Paul Gray
- 80-113 "Diversification Strategy, Accounting Determined Risk, and Accounting Determined Return," by Richard A. Bettis and William K. Hall
- 80-114 "Toward Analytically Precise Definitions of Market Value and Highest and Best Use" by Kerry D. Vandell
- 80-115 "Person-Situation Interaction: An Exploration of Competing Models of Fit " by William F. Joyce, John W. Slocum, Jr., Mary Ann Von Glinow
- 80-116 "Correlates of Climate Discrepancy" by William F. Joyce and John Slocum.