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A NOTE ON PROBLEMS RELATED TO
RATIONALE, MODELS, AND METHODOLOGY
IN ORGANIZATIONAL ANALYSIS

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13. ABSTRACT Three problem areas frequently encountered in organizational research are reviewed. These areas are: a) investigative models and measurement rationale, b) experimental design and statistical methodology, and c) level of analysis versus level of explanation. The review identified several needs for future research. A major need is the development of complex, integrative models incorporating both individual and situational characteristics and allowing for adaptive-dynamic processes. The investigation of such models requires a move from static, cross-sectional paradigms to dynamic longitudinal methods. The construct validity of instruments used to measure model components should also be assessed. Finally, research should identify the appropriate types of data from lower levels of analysis which may be accumulated to represent conditions at higher organizational levels.			

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A Note on Problems Related to Rationale, Models, and
Methodology in Organizational Analysis

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A recent but recurrent plea has been made for industrial and organizational psychologists to adopt new models for organizational research which encompass both individual characteristics and situational differences as antecedent causes of behavior and attitudes of individuals in organizations as well as organizational functioning itself (Campbell, Dunnette, Lawler, & Weick, 1970; James, 1973; Lichtman & Hunt, 1971; Sells, 1963). However, traditionally, research on individual behavior and attitudes in organizations has focused on either a "personalistic model" or some variation of a "structural model" (Lichtman & Hunt, 1971). The personalistic model was predicated upon a reductionist approach to the identification of universal traits that determine behavior and attitudes regardless of the situation. Organizations were studied and/or changed on the basis of investigations and attempted manipulations of individual abilities, needs, values, and attitudes. With respect to the structural model, Lichtman & Hunt (1971) made a distinction between traditional structural theorists (c.f., Marx, 1964; Taylor, 1911; Weber, 1960) and modern structural theorists (c.f., Argyris, 1964; Likert, 1961, 1967; McGregor, 1960). While basically divergent in their theories of human behavior, the two structural approaches shared the view that the social structure of the organization was the "primary determinant of differential human characteristics" (p. 271). Individual characteristics were largely ignored by both approaches as a result of global personality assumptions such as all

people inherently dislike work, or all people desire nonauthoritarian leadership styles.

Intervening between the personalistic and structural models were the "interaction" or "integrating models" (Campbell et al., 1970; James, 1973; James & Jones, 1974; Lichtman & Hunt, 1971; Sells, 1963). The identifying feature of these models is the belief that the behaviors and attitudes of individuals in organizations are based upon a dynamic interaction between the organizational situation and the characteristics of the individuals in the situation. Examples of interaction or integrating approaches include the open system and role models (Homans, 1950; Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; Katz, 1964; Katz & Kahn, 1966; Katzell, 1962; Sells, 1963), the contingency model of leadership effectiveness (Fiedler, 1967, 1971), a criterion model for managerial effectiveness (Campbell et al., 1970; James, 1973), and the organic-adaptive model for future organizational functioning (Bennis, 1969).

Although the stimuli for the development of interaction or integrating models are many and varied, three major sources are identifiable. These are: a) the inability of either the personalistic or structural models to account for more than a moderate amount of behavioral or attitudinal variance, b) the need to develop explanatory psychological theory in industrial and organizational psychology, and c) the realization that environments, organizations, and individuals are adaptive and dynamic.

The advent of integrating models for organizational analysis requires the development of rationales and methodologies for measuring situations. General sources of variance in organizations have been hierarchially classified as variance attributable to individuals,

variance attributable to different groups (formal and informal) varying from the immediate work group through division or branch levels to major subsystems, variance attributable to the total organization, and variance attributable to the sociocultural environment (Indik, 1968; Porter & Lawler, 1965).

Psychologists have generally concentrated their research on the "micro" aspects of organizations, generally at the individual and immediate work group levels, in attempts to reduce situational variables to universal or general aspects of all or most situations (Katz & Kahn, 1966; Barker, 1963). On the other hand; sociologists, political scientists, some management scientists, economists, and others have adopted a "macro" approach and have focused on the "total pattern of events" of large organizational subsystems and total organizations. A relatively small amount of effort has been placed on the sociocultural environment (Katz & Kahn, 1966). Both the macro and micro approaches have weaknesses, but the obvious weakness regarding psychology is the present lack of knowledge of how organizational levels above the immediate work group as well as the sociocultural environment affect individual behavior and attitudes (Blankenship & Miles, 1968; Herman & Hulin, 1972; Porter & Lawler, 1965; Prien & Ronan, 1971). As emphasized by Katz & Kahn (1966), both the macro and the micro aspects of organizations must be investigated if psychology is to understand the relationships between situational variance and individual behavior and attitudes. A combination of these approaches means not only the addition of more levels of analysis (e.g., subsystems, total organizations, sociocultural environment), but also the study of adaptive and dynamic organizational processes.

The goal of the present paper is to provide a critical assessment of problems encountered in research on organizational situations. The problems reviewed have been separated into three general but not mutually exclusive problems areas: a) problems related to investigative models and measurement rationale, b) problems related to experimental design and statistical methodology, and c) problems related to level of analysis versus level of explanation. The problems selected here are not meant to be exhaustive; rather, a selection was made of what appear to be the more significant problem areas. Finally, recommendations are made for models or avenues of research which hopefully could assist in partial solutions of the problem areas analyzed.

PROBLEMS RELATED TO INVESTIGATIVE MODELS AND MEASUREMENT RATIONALE

The issues discussed in this area concern the previously discussed needs to develop new models for organizational research, namely the need for integrative models, the need to identify comprehensively the relevant sources of situational variance, and the need to adopt models that allow for adaptive-dynamic processes. Related issues concern the lack of comparable variables and samples across studies as well as somewhat different and even conflicting results.

Many studies of individuals in organizations have concentrated on a restricted number of variables of interest to the investigator(s), usually in accordance with a preconceived theory designed to study a specific problem or problem area (Dunteman, 1966; Guion, 1973; Hall, Haas, & Johnson, 1967; Herman & Hulin, 1972; House & Minor, 1969; Indik, 1968; March & Simon, 1958; Prien & Ronan, 1971). Types of variables employed include: a) communication networks, b) motivational characteristics

of individuals, c) reward and punishment, d) organizational structure, e) leadership style, f) organizational goals, g) technology, h) systems norms and values, i) organizational criteria, and j) perceived organizational climate. This concentration on a specific and a limited number of variables of interest and different designs based upon different theoretical perspectives have resulted in a lack of consistent findings across studies and a vagueness as to how different variables are related.

The above lack of consistency across studies as well as the failure to construct full integrative and dynamic models can also be related to several other problems. The first of these is the lack of overlap in the literature either within psychology or between psychology and other areas of behavioral science. This is unfortunate because what appear to be differences between studies across different fields may in fact be only differences in terms. An excellent example of this is the House and Minor (1969) integration of span of control (from management) and group size (from psychology) where an amalgamation of the research from both areas provided an increased understanding of both span of control and group size. A second example was recently provided by House and Rizzo (1972a), who demonstrated that a number of constructs thought to be exclusive to perceived organizational climate as measured by the Organization Description Questionnaire were in fact measuring well known constructs from the role theory, satisfaction, and leadership literature.

A second issue involves the oversimplified approaches that many organizational researchers have taken in developing or using organizational models. With some notable exceptions, the tendency has been to divide organizations into dichotomies such as bureaucratic-nonbureaucratic,

mechanistic-organic, democratic-autocratic, theory X - theory Y, and so forth (Bennis, 1969). These dichotomies highly oversimplify the complexities of organizations, and typically are the product of armchair theorizing; in general they are based upon only a few variables, and have little support from actual data (Hall et al., 1967; Indik, 1968). Secondly, the classifications and theories underlying such dichotomies are often prescriptive and tend to specify a single "best" way to organize, lead, motivate, manage, or make decisions (Lichtman & Hunt, 1971; Pugh, 1966).

The results of employing oversimplified organizational models and the related problem of the neglect of multivariate methods in such research can be demonstrated by a brief review of studies examining the relationships between organizational structure and individual attitudes and behavior. First, in order to employ organizational dichotomies, one must assume that various dimensions of organizational structure are highly interrelated and jointly affect attitudes and behavior. For example, researchers using the mechanistic-organic dichotomy (Burns & Stalker, 1961; House and Rizzo, 1972a, 1972b; Lawrence & Lorsch, 1967) have assumed that structural measures such as formalization of role definitions, centralization of authority, standardization of procedures, and configuration (tall versus flat) are highly related. However, the research evidence on dimensions of organizational structure and the interrelationships of such dimensions strongly contraindicates the validity of these assumptions. Small and nonsignificant relationships among structural measures (Hall et al., 1967; Meyer, 1972), factorially independent structural dimensions (Pugh, Hickson, Hinings, & Turner, 1968), and interactions among structural measures (Porter & Lawler,

1965) have been reported. Thus, research on organizational structure fails to support dichotomous organizational models such as mechanistic-organic, nor does it support the concept of a joint effect of structural measures on attitudes and behavior.

Second, most of the studies that have examined relationships between organizational structure and individual attitudes and behavior have concentrated on only one or two structure variables such as size or organizational level (Herman & Hulin, 1972; Porter & Lawler, 1965) and, perhaps of more importance, have disregarded almost completely situational and individual measures intervening between the structure and attitudes or behaviors. Failure to measure other relevant variables either within the structural component (or the attitude-behavior component), or intervening between the two components can lead to serious problems including unidentified interactions. These unidentified interactions result in a confounding of sources of variance. For example, different groups may have different structural characteristics (Crozier, 1964; Hall, 1962, 1963; Katz & Kahn, 1966; Litwak, 1961; Parsons, 1960). Thus, while a total organization or division may be highly formalized, a branch or workgroup could be quite informal. In their review of the relationships between organizational structure and individual behavior and attitudes, Porter & Lawler (1965) discerned the following sources of confounding: a) the use of a worker-management dichotomy rather than investigating the differential effects of different types (functions) of subunits, b) failure to treat different types or levels within a subunit or management, c) studying the worker as if he belonged to only one group (e.g., workgroup) when in fact he is a member of many groups (e.g., branch, division, and informal groups), and d) failure

to identify interactions among different structural measures (e.g., flat-tall and centralized-decentralized). An example of confounding due to membership in groups of different sizes was:

.....it seems necessary to keep the subunit/total organization distinction clearly in focus because the effects of one type of size (e.g., total organizational size) may be confounded by the effects of the other type of size (i.e., size of subunits within total organization) (Porter & Lawler, 1965, p.40).

Another set of issues related to models and measurement concerns the use of different types of measurements for the same variable or construct with accompanying different relationships with other variables (Herman & Hulin, 1972). Examples of this source include: a) different measurement instruments for job satisfaction such as the Job Description Index and the Porter scales; b) different definitions and measurement instruments for technology such as Woodward's (1965) measures of technical complexity (unit production, mass production, and process production), Hage and Aiken's (1969) measure of routineness of technology, and Mohr's (1971) measurement of workflow integration; and c) the unanswered questions of whether perceived organizational characteristics (e.g., organizational climate) are in fact valid measurements of objectively measured organizational attributes (Guion, 1973; James & Jones, in press). These issues point to the need for further assessment of the construct validity of measurement instruments.

A final source of problems reviewed here concerns the use of different samples in different studies and the generalizability of findings on a particular type of sample to other types of samples. Porter and Lawler (1965) demonstrated that relationships between organi-

zational size and job attitudes can be quite different if studies are based upon intraorganizational comparisons versus interorganizational comparisons. Following a review of the interrelationships between dimensions of organizational structure, James and Jones (1974) concluded that such interrelationships could be moderated by stage of organizational development, size of the organization, duration of the data collection period (a temporal moderator), and the type(s) of technology employed by the organization. Porter and Lawler (1965) also reported that the relationships between technology on other organizational components such as structure were a function of the size of the organization. Thus, it is questionable that relationships between at least some organizational components will generalize across samples that are heterogeneous with respect to size, technology, and stage of organizational development.

In summary, problems related to theory and rationale generally appear to result from a failure to develop and use sophisticated organizational models. This failure in conjunction with the lack of consistent findings across studies can be traced to the related issues of: a) failure to use multivariate research paradigms and the accompanying failure to identify important sources of situational variance, b) differences in terminology rather than differences in substance, c) the use of oversimplified dichotomies to represent organizational functioning, d) failure to investigate intervening measures when studying the effects of situations on attitudes and behaviors and the resulting confounding of sources of variance due to unidentified interactions, e) different sources of measurement for the same variable or construct where the construct validity of the measurement has not been ascertained, and f) the use of different samples where the generalizability of results to other

samples has not been ascertained.

Linear versus interactive models. Assuming that an integrating approach will lead to increased understanding of behavior and attitudes in organizations, the known statistical problems related to the study of interactions and moderator variables require consideration. A primary reason for the development of integrating models is the fact that simple linear, additive relationships employing either individual or situational characteristics have not identified major portions of the individual effectiveness variance. Rather, the integrating model predicts that dependent variables such as individual effectiveness will be a function of a) linear relationships among individual characteristics, situational characteristics, and effectiveness, and b) simple to complex interactions, namely individual-individual, situation-situation, and situation-individual interactions.

Procedures employed previously to analyze interactions or moderator variables include subgroup analysis (Frederiksen & Melville, 1954), differential predictability (Ghiselli, 1956, 1960), interaction terms in multiple regression equations (Saunders, 1956), quadrant analysis (Hobert & Dunnette, 1967), and discriminant analysis (Zedeck, 1971). Each of these procedures is subject to some methodological problems and it can generally be said that the interaction models have been only partially successful in improving prediction (Abrahms & Alf, 1972; McNemar, 1969; Zedeck, 1971). However, the role that situational variance will play when represented by moderator variables remains to be investigated. Hopefully, techniques such as subgrouping by organizational contexts, climates, task demands, etc., and designs investigating relationships

both within and across these subgroups will improve the understanding of behavior and attitudes in organizations. An indication of the promise of using situational measures as moderators was recently provided by Ghiselli and Siegel (1972), where configuration of structure (tall versus flat) was used to moderate the relationships between managerial attitudes toward leadership and managerial success. Although the resulting correlations were generally low, they did tend to confirm the hypothesis that managers who favored democratic attitudes tended to be more successful in flat organizations. James and Hornick (1973) demonstrated that the prediction of individual attitudes (job satisfaction) and effectiveness was maximized in their study by including both main effects and interactions for variables representing technology (function), structure (three size measures), perceived organizational climate, and individual characteristics (education, race, aptitudes, socioeconomic status, and tenure).

Static versus dynamic studies. Several investigations have provided substantial evidence to support the need to investigate the dynamic nature of organizational variables as well as the dynamic nature of the relationships between such variables (Campbell et al., 1970; Ghiselli, 1956; Indik, 1965; Inn, Hulin, & Tucker, 1972; Likert, 1961, 1967; MacKinney, 1967; Meyer, 1972). For example, Likert (1967) and Indik (1965) demonstrated how changes in the organizational structure measures can effect changes in organizational climate and behavioral (criterion) variables. Likert showed how a change in an independent variable (typically structural) could, in a period of time, effect a change in "intervening variables" such as perceptions and attitudes. Changes in intervening variables in turn were shown to have an effect upon

dependent variables or criteria. An important point was that the magnitude of the relationships between intervening variables and dependent variables tended to increase over time. Thus, time acted as a "temporal moderator" for the magnitudes of relationships between intervening and dependent variables. This severely questions the use of static, cross-sectional studies in organizational research.

Indik (1965) proposed that in studying the relationships between an organizational structure measure, such as size, and dependent measures or behaviors (criteria), the following two types of mediating variables should be taken into account: a) the organizational process related to the structure measure (e.g., organizational processes related to a change in size, and b) the psychological process or perceptions of the individuals toward both the change and the resulting organizational processes. The simplified model: Independent Variable Organizational Process Psychological Process Dependent Variable, can be viewed as a "linkage model" where the variables operate at different levels of explanation, interact with one another, and a dynamic, longitudinal study is required for full explication (Campbell et al., 1970).

Descriptive versus experimental studies. The differences between descriptive and experimental studies are well known (Brogden, 1972). Let it suffice to say that most organizational studies are of the descriptive-static type (e.g., factor analysis of organizational characteristics collected at one point in time), and a few can be placed in the descriptive-dynamic category (e.g., Likert's model presented above)¹. Field studies of organizations typically do not have the financial support, cooperation, and especially the ability to control situations that are required to conduct experimental-static or experimental-dynamic investigations.

The few exceptions to this generalization fall in the area of organizational climate (Frederiksen, 1966, 1968; Frederiksen, Jensen, & Beaton, 1972; Litwin & Stringer, 1966). In general, however, experimental controls are generally not available to demonstrate direct cause-effect relationships. Hopefully, the advent of dynamic, integrative models will precipitate the use of time-series analysis, three-mode factor analysis, path analysis, cross-lag correlation analysis, and other models conducive to ascertaining cause-effect in at least descriptive-dynamic designs. Whenever possible, experimental-dynamic field or laboratory studies need to be promoted.

Misuse of multivariate statistics. Multivariate statistics provide a highly valuable tool for the development of integrative models, primarily due to the fact that complex relationships among large numbers of variables from different domains can be ascertained. Identification of such relationships can be greatly enhanced by an initial parsimonious description of variables within a domain (e.g., organizational structure, process, function, climate, criteria, etc.). Unfortunately, multivariate procedures, namely factor analysis, have been used when clearly inappropriate as in the indiscriminate factoring of variables from different domains under the guise of exploratory research. For example, Prien and Ronan (1971) factor analyzed 38 input and output variables including variables representing organizational goals, technology, structure, and criteria. This analysis might have been more informative if separate analyses (not necessarily factor analysis) had been conducted within the homogeneous domains of variables in order to identify more parsimonious and explanatory dimensions, before attempting to ascertain relationships among the domains. On the other hand, univariate procedures are often used where

clearly multivariate techniques are more appropriate. This typically occurs when a moderate-to-large number of variables is treated individually using bivariate and partial correlation techniques in cases in which rank reduction procedures could provide more parsimonious and explanatory results.

Use of small samples. Sample sizes for large subsystem (e.g., divisions, departments, branches) and total organization variables are generally small (<50), although moderate-to-large samples are available for individuals and small groups (Ghiselli, 1974). The amount of time and money required to conduct large scale organizational studies are major factors precluding the use of a large sampling of organizations. As with other small samples, small samples of organizations have detrimental effects. These include losses in the ability to generalize beyond the actual sample and to cross-validate results. Secondly, statistical power is lost as is the opportunity to use sophisticated multivariate statistics.

Unsubstantiated post hoc generalizations. The major issue considered here is the tendency for some investigators to make global, encompassing assertions for which their data and experimental designs do not provide adequate support (Dunteman, 1966; March & Simon, 1958; Meyer, 1972). Examples of this tendency include cause-effect implications from cross-sectional data (Meyer, 1972), and the before mentioned tendency to generalize from a study of one type of organization (e.g., health, manufacturing, education) to other types of organizations or to organizations in general (Pugh, 1966). Perhaps the most common problem in this area is the widespread tendency to explain, post hoc, results obtained for a set of x variables in terms of an unmeasured set of y variables.

This often occurs when too few variables are used and results fail to support preconceived theories and hypotheses. A related problem occurs when only two organizations are studied, typically selected to represent opposite extremes such as mechanistic-organic, and results are not only embellished by nonmeasured variables, but the generalizability of the results cannot be differentiated from the idiosyncracies of the organizations studied (for example, see Pheyney, Payne, & Pugh, 1971). Thus, while post hoc generalizations are appropriate for proposing future research, it is a tenuous practice for interpreting results and drawing conclusions for a completed study.

PROBLEMS RELATED TO LEVEL OF ANALYSIS VERSUS LEVEL OF EXPLANATION

Studies of organizations provide opportunities to investigate a number of different intraorganizational levels (e.g., individuals, groups, and the total organization). Further, organizations can be categorized (e.g., civilian versus government) to provide additional levels for analysis (interorganizational analysis). The level of analysis versus level of explanation problem concerns the use of data collected at one level in the organization (level of analysis) to explain phenomena (behavior, structure, etc.) in other (higher or lower) levels in the organization (level of explanation). For example, the question remains whether variables such as perceived organizational climate measured at the individual level of analysis may be accumulated (summed, averaged, or clustered) across members of an organizational group such as a division to provide a measure of "divisional climate" (level of explanation). Conversely, the extent to which a measure such as the size of the total organization may be used to explain the behavior and attitudes

of individuals must also be investigated. Problems encountered in moving from higher levels of analysis to lower levels of explanation have been discussed within the context of the need to encompass intervening variables in more sophisticated organizational models and within the previous discussion of linkage models (Indik, 1965). Thus, the discussion here is concentrated on moving from lower levels of analysis to higher levels of explanation.

Of interest in the study of integrating models is the open system model, which, among other things, inherently assumes that any organizational variable is related directly or indirectly to any other organizational variable (Katz & Kahn, 1966). Thus, while total organizational structure can, through intervening variables, have an effect upon individual behavior and attitudes, individual and subgroup behavior and attitudes can have an effect upon organizational process and structure at higher levels (e.g., conflicts, strikes, riots, turnover, absenteeism, etc.). Therefore, integrative models need to provide for changes in higher level organizational measures by incorporating appropriate feedback loops from lower levels of the organization. Unfortunately, until more is learned through longitudinal studies, we will continue to speculate about the dynamics or effects of feedback.

A related problem is the extent to which informational results received for lower levels of analysis can be generalized to explain phenomena at higher organizational levels. For example, questions such as the following could be entertained: a) can results found for leadership style, decentralization, role ambiguity, span of control, etc., at the workgroup level be generalized to leadership style, decentralization, role ambiguity, span of control, etc., at the major subsystem or total

organizational level; or, b) can results found for large intraorganizational subsystems be generalized to interorganizational inferences? In general, it can be said that generalizing results from lower levels of analysis to higher levels of explanation is a tenuous procedure (Dunteman 1966; Herman & Hulin, 1972; Porter & Lawler, 1965). Problems concerning the need to identify intervening variables and to avoid confounding are as appropriate here as they were for moving from higher levels of analysis to lower levels of explanation.

Related to the generalization problem is the problem of identifying the nature and types of data from lower levels of analysis which may be accumulated to represent data at higher organizational levels. This is appropriate for a variable such as size where the total number of individuals in an organization is the sum of all the individuals in workgroups, divisions, etc. However, the appropriateness of accumulation procedures is not at all clear for other types of variables. For example, it has been demonstrated (c.f., Crozier, 1964), that some groups within an organization can have structures that are different from the rest of the groups in the total organization (e.g., highly centralized divisions in a generally decentralized organization). Therefore, the sum of the parts do not reflect the whole. Nor does it make sense, in some cases, to average subgroup characteristics and to use a mean score to describe the total organization. For example, a line department with highly formalized lines of communication would not appropriately be combined with a staff department with informal communication lines to describe the total organization as being of average formalization. This problem is also apparent in the area of perceived organizational climate where individual perceptions of the organization are frequently

accumulated to represent various subgroups or even the total organization. Because such a measure of climate is perceptual and therefore partially a function of individual differences, the consensus of perception within organizational subgroups and the accuracy of accumulated climate scores with respect to other forms of measurement, particularly objective forms of measurement, must be investigated (Forehand & Gilmer, 1964; James & Jones, in press; Guion, 1973). If consensus and accuracy cannot be demonstrated, then the perceived climate scores may be more descriptive of individual attributes than organizational attributes, making it questionable whether accumulated scores can be used as group or organizational variables.

Within the realm of perceived organizational climate, contradictory information exists concerning whether organizational climate (OC) can appropriately be accumulated to represent higher levels of explanation (James & Jones, in press). For example, Campbell and Beaty (1971) and Jones (1973) demonstrated significant differences in perceived OC across different organizational subunits and James and Hornick (1973) found perceived OC to be significantly related to both individual characteristics and objective situational measures (size and job type). On the other hand, Johannesson (1973) concluded that perceived OC measured the same attributes as individual job satisfaction and was thus tautological. With respect to accumulating other types of situational variables such as formalization, centralization, standardization, etc., there is an equal paucity of information to justify the use of data from lower levels of analysis to address higher levels of explanation. More sophisticated organizational models, measurement of intervening variables, and checks on accuracy are sorely needed.

SUMMARY AND RECOMMENDATIONS

Problems related to rationale, models, and methodology in organizational analysis were reviewed in regard to three related problem areas, namely:

a) investigative models and measurement rationale; b) experimental design and statistical methodology; and c) level of analysis versus level of explanation. Many of the issues reviewed have a long history in psychological research, while others are comparatively new and unique to the investigation of situational variance in organizations. Perhaps a major source of many of these problems is the fact that organizational research inherently requires the investigation of a large number of variables from many domains. This is not congruent with the traditional psychological study in which a restricted number of variables is subjected to thorough examination. Secondly, the relationships between individual and situational variables are often complex, requiring the investigation of a multitude of interactions. This again is not congruent with the traditional psychological model where additive, linear functions are emphasized. Finally, organizational research in psychology has been primarily concerned with investigations of individual differences, often in a small group setting and typically on a static basis. The needed integrative models require analysis of variables from all levels of the organization and from the imbedding sociocultural environment as well as clear specification of the need for dynamic, longitudinal experimental paradigms which can assess changes and the effects of feedback loops over time.

Recommendations which hopefully could assist in partially alleviating the problems cited are:

1. The adoption of integrative models where individual behavior and attitudes are viewed as a function of situational and individual characteristics. In addition, such models should be based upon dynamic-adaptive processes where all events in an organization could have direct or indirect effects upon any other event. Finally, sophisticated multivariate models are needed which account for multitudinal sources of situational and individual variance including measures representing the sociocultural environment, macro-organizational measures, and variables intervening between macro-measures and attitudes and behavior. One possible approach to developing such models would involve a merger of models which delineate a large number of situational measures (c.f., Indik, 1968; James & Jones, in press; Sells, 1968) and the open system model (c.f., Katz & Kahn, 1966) which provides a basis for beginning the study of interrelationships of organizational measures.
2. The construct validation of measurement instruments and a synthesis of multiple measures of the same variables or constructs.
3. Multisample studies employing heterogeneous interorganizational as well as intraorganizational samples in order to ascertain the generalizability of findings. If findings fail to generalize, then empirically determined reasons for this failure are needed.
4. A stronger emphasis on sound experimental design and statistical (and psychometric) analysis. More attention should be devoted to determining whether experimental designs employed are applicable and of sufficient sophistication to examine the problems addressed, and whether the design, sample(s), variables, and

results justify conclusions and generalizations.

5. Examination of the level of analysis versus level of explanation problem by including intervening variables in studies, assessing the generalizability of measures at a particular level of analysis for a variable at a higher, or lower, level of explanation, assessment of the accuracy of measurement, examination of various methods for accumulation of data to represent higher levels of explanation, and the investigation of the effects of dynamic feedback loops.

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Footnotes

1

The static-dynamic distinction is temporal as well as indicating feedback and change. The descriptive-experimental distinction is based upon the control of variances and samples (in this context). Thus, the following four combinations can be made: static-descriptive, static-experimental, dynamic-descriptive, and dynamic-experimental.