Testing the Organizational Assessment Model
of Work Unit Design:
A Systems Approach

Christopher Gresov
Graduate School of Business
Columbia University

THE STRATEGIC
MANAGEMENT
RESEARCH CENTER
Testing the Organizational Assessment Model
of Work Unit Design:
A Systems Approach

Christopher Gresov
Graduate School of Business
Columbia University

Robert Drazin
Graduate School of Business
Columbia University

and

Andrew H. Van de Ven
School of Management
University of Minnesota

Support for this research was provided in part by the Wisconsin Job
Service Division of the Department of Industry, Labor and Human
Relations, the California Employment Development Department, and by the
Program on Organizational Effectiveness of the Office of Naval Research
under contract number N00014-S4-K-0016.

Submitted to the Organization and Management Theory Division of the
Academy of Management for Presentation at the 1985 Meetings.

Christopher Gresov
& Robert Drazin
721 Uris Hall
Columbia University
New York, NY 10027
Phone: 212-280-4431

Andrew H. Van de Ven
School of Management
University of Minnesota
Minneapolis, MN 55455
Phone: 612-376-1502
## Testing the Organizational Assessment Model of Work Unit Design: A Systems Approach

Christopher Gresnov, Robert Drazin and Andrew H. Van de Ven

Strategic Management Research Center
University of Minnesota
271 - 19th Avenue S, Minneapolis, MN 55455

Office of Naval Research
Organizational Effectiveness Group
Code 4120E, Arlington, VA 22217

Approved for public release; distribution unlimited. Reproduction in whole or part is permitted for any purpose of the United States government.

Contingency Theory, Organization Design, Organizational Assessment, Work Unit Design, Job Satisfaction

A systems approach to testing contingency theory propositions is presented and used to test a contingency theory of work unit design. Focusing on job satisfaction rather than efficiency, results show an improvement over a previous study that addressed efficiency. Suggestions are made as to the extension of the systems approach and its further refinement.
Testing the Organizational Assessment Model of Work Unit Design: A Systems Approach

ABSTRACT

A systems approach to testing contingency theory propositions is presented and used to test a contingency theory of work unit design. Focusing on job satisfaction rather than efficiency, results show an improvement over a previous study that addressed efficiency. Suggestions are made as to the extension of the systems approach and its further refinement.
At the heart of all contingency theory lies the basic proposition that high performance is the result of a "fit" between contextual elements (e.g. environment, task, technology) and internal organizational arrangements. Poorer performance, conversely, is felt to be the consequence of "misfit." Despite the centrality of the notion of "fit" in organization research, few scholars have explicitly examined or elaborated its implications in the development and empirical testing of contingency theories (Schoonhoven, 1981; Tosi and Slocum, 1984; Van de Ven and Drazin, 1985). While propelling many of the models and theories of the last two decades, the "fit" concept itself has been largely relegated to a metatheoretical background issue.

The apparent instability of contingency theory findings (Pennings, 1975; Tosi and Slocum, 1984; Van de Ven and Drazin, 1985) however, has led to greater attention being devoted to the concept of "fit," and a variety of alternative approaches and formulations have been developed to test for it. In their review of the fit concept in contingency theory, Van de Ven and Drazin (1985) point out that at least three distinct approaches have been developed, which they have termed Selection, Interaction and Systems. In the Selection approach, fit is an assumed premise in causal models relating context and structure. The causal mechanism is generally viewed as natural and/or managerial selection. Methods generally involve the test for significant correlations or regression coefficients of context on structure, though in current views variables subject to universal switching rules should exhibit higher correlations than more particularistic variables.

The Interaction approach generally defines fit as an interaction of pairs of organizational context-structure factors on performance.
Consequently, research employs MANOVA or regression to assess the significance of context-structure interaction terms. In a current variant of the Interaction approach, fit is viewed as conformity to a linear relationship between context and design. Residuals from the hypothesized linear relationship, when regressed on performance, should be significant.

Van de Ven and Drazin (1985) have suggested a third approach which they term the Systems approach. The Systems approach conceives of fit as the internal consistency of multiple contingencies, structural, and performance characteristics. Given a contingency formulation, a certain ideal-type design will be appropriate, deviations from which result in poorer performance.

Drazin and Van de Ven (1984) compared and tested the three approaches on a single set of data and found the Systems approach performed well, relative to the others. Given these results, it is felt that the Systems approach deserves further development and extension. While including job satisfaction as a performance variable, the focus of their analysis was on work unit efficiency. In an attempt to replicate and extend their findings, the research applies the Systems approach primarily to the performance variable of job satisfaction. The Systems approach will be described in greater detail, followed by a presentation of a task contingent theory of work unit design and satisfaction. The results of the Systems approach test of the theory will be followed by conclusions regarding this particular approach to fit studies and speculations regarding directions for future research.
The Systems Approach to Fit

The Systems approach to fit is holistic, as opposed to reductionistic, in formulation. Reductionistic approaches treat the design of an organization as decomposable into parts whose implications for performance can be assessed separately, with the assumption that the knowledge derived is then easily reaggregated in an additive fashion. Systems theorists, on the other hand, conceive of organizations as wholes that are more than simple sums of parts -- the pattern of relations between parts is an additional element that logically contributes to an understanding of the whole. Consequently, examination of the pattern of coherence between design components is a crucial feature that distinguishes the Systems approach to fit analysis from other alternatives. Thus, this approach posits that high performance results both from fits between design components, as well as fits of individual components to context alone (Child, 1975; Tushman and Nadler, 1978).

In Van de Ven and Drazin's (1985) formulation, a coherent pattern of design components that "fits" a particular context is construed as an "ideal pattern." Focusing then on the multi-variate nature of design, they hypothesized that departures or deviations from the ideal pattern along any or several dimensions will result in lower performance. An important feature assumed here is that departure or deviation in any direction results in a similar performance penalty. Thus, deviation is an "omnidirectional" possibility, so long as the component score in the ideal pattern lies within the observed range along that dimension. Thus, the Systems approach avoids the "More (or less) is better" characterization of many other formulations.
Van de Ven and Drazin (1985) suggest a three-step procedure to test this approach to fit. First, ideal patterns of design scores are generated either theoretically, or empirically (as in Ferry, 1979). Second, distances from actual organizations to their respective ideal types are calculated according to the following euclidean distance formula:

$$\text{DIST}_{ij} = \sqrt{\sum_{s=1}^{N} (x_{is} - x_{js})^2}$$

where \(\text{DIST}_{ij}\) = euclidean distance from the \(j^{th}\) focal organization to its ideal type \(i\), and,

\(x_{is}\) = score of the ideal type organization on the \(s^{th}\) structural dimension, and,

\(x_{js}\) = score of the \(j^{th}\) unit on the \(s^{th}\) structural dimension.

The final step lies in the actual test of the contingency theory by correlating the derived distance with the selected performance variable. The fit proposition is demonstrated if lack of fit or "misfit" (observed as euclidean distance from the relevant ideal type) correlates significantly and negatively with performance.

Finally, it should be noted that the Systems approach is conceptually distinct from contingency notions. It is possible, especially in the case where ideal types are derived empirically, to observe a strong negative relationship between distance and performance and yet not have a contingency factor that results in radically different ideal types. The extent of the difference between ideal types is assessed with MANOVA and ANOVA, as will be shown in the course of the analysis.
The Task Contingent Model of Work Unit Design

The Systems approach can fruitfully be applied to a test of a task contingent model of work unit design developed by Van de Ven and associates (Van de Ven and Delbecq, 1974; Van de Ven, Delbecq and Koenig, 1976; Van de Ven, 1976a, 1976b; Van de Ven and Drazin, 1978). This model has been extended and incorporated as a core part of the larger Organizational Assessment (OA) framework and instruments (Van de Ven and Ferry, 1980; Ferry, 1983). The OA research program aims to develop a conceptual framework and related measurement instruments for assessing the performance of jobs, work groups, inter-unit relationships, and organizations on the basis of how they are organized and the environments in which they operate. At the heart of the OA research effort is a contingency theory of job, work unit, and organizational design. Here the focus is specifically on the OA task contingent theory of work unit design. By definition, the work unit is the smallest collective group in the organization and consists of a supervisor and all personnel who report directly to that supervisor.

OA task contingency theory in part proposes that high-performing units which undertake work at low or high levels of difficulty and variability will adopt systematized or developmental programs or modes of structure to organize repetitive activities. Figure 1 shows the underlying structure and process dimensions that distinguish between these programs.

The structural elements of these programs are defined in terms of: (1) specialization, the number of different work activities performed by a unit, (2) standardization, the procedures and pacing rules that are followed in task performance; (3) discretion, the amount of work-related
decision making that the supervisor and employees exercise; and (4) personnel expertise, the skills required of personnel to operate the program. Process is defined as the coordination pattern among unit personnel who execute the work program. Coordination is indicated by the frequency of verbal and written communication, as well as the frequency of conflict and the methods used to resolve that conflict among unit personnel.

Unit efficiency (output per person) and the average level of job satisfaction of unit personnel are hypothesized in this model to be a function of the fit between the level of task uncertainty faced by the unit and its internal pattern of structure and process.

---

Insert Figure 1 about here

---

This analysis focuses primarily on job satisfaction as a performance indicator. Dewar and Werbel (1979) noted that satisfaction allows "a better comparison of universalistic and contingency predications because internal organizational characteristics such as structure and control styles, are more likely to determine satisfaction ... then they are other performance variables, such as growth and profit" (p. 427). The primary focus of Drazin and Van de Ven's (1984) earlier Systems tests of the OA task contingency model was on unit efficiency. A worthwhile replication effort should focus on a Systems analysis of job satisfaction, especially since the predictions the model makes for satisfaction equate to those for unit efficiency.
Figure 1

Hypotheses in Task Contingent Model of Work Unit Design

<table>
<thead>
<tr>
<th>Task Contingent Factor</th>
<th>If Low</th>
<th>If High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Uncertainty (Difficulty and Variability)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit Structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Unit Specialization</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>2. Unit Standardization</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>3. Personnel Expertise</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>4. Supervisory Discretion</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>5. Employee Discretion</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Unit Processes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Verbal Communication</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>7. Written Communication</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>8. Frequency of Conflict</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>9. Conflict Resolution By:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Avoidance</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>b. Smoothing</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>c. Authority</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>d. Confrontation</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

Performance (With Above Pattern):

<table>
<thead>
<tr>
<th></th>
<th>If Low</th>
<th>If High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Satiation</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Unit Efficiency</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

Performance (With a Different Pattern):

<table>
<thead>
<tr>
<th></th>
<th>If Low</th>
<th>If High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Satiation</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Unit Efficiency</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>
Sample and Measurement Procedures

Data were obtained from 629 employment security units in 60 offices located throughout California and Wisconsin in 1975 and 1978. These units administer the Department of Labor's Job Services, Unemployment Insurance, Workman's Compensation, and Work Incentive programs at the local community level.

With the exception of unit efficiency, all the dimensions in Figure 1 were measured with the Organization Assessment Instrument (OAI), as developed and evaluated by Van de Ven and Ferry (1980). Questionnaires were completed by all unit members and supervisors during business hours after an OAI research team member explained the purpose and use of the study. The data reported here are at the unit level and were the result of an aggregation procedure which gave equal weight to the response of the unit supervisor and the average of all responses of the unit personnel reporting to the supervisor. Measures of efficiency were obtained from organizational performance records for each unit and consist of the amount of output produced per full-time equivalent position.

The 473 units for which scores were obtained on the satisfaction and task uncertainty scales are used in the analysis. Units scoring in the middle third on task uncertainty were dropped from the analysis, in order to better demarcate the distinction between high and low task uncertainty and the systematized and developmental modes of organizing.

A task contingency theory is in essence a theory of organization modes, rather than a collection of individual task-design hypotheses. As logically coherent patterns of structure and process, the systematized and developmental modes are expected to be associated, respectively, with low and high levels of task uncertainty. Lack of correlation should
LIST 2
OPNAV

Deputy Chief of Naval Operations
(Manpower, Personnel, and Training)
Head, Research, Development, and
Studies Branch (OP-01B7)
1812 Arlington Annex
Washington, DC 20350

Director
Civilian Personnel Division (OP-14)
Department of the Navy
1803 Arlington Annex
Washington, DC 20350

Deputy Chief of Naval Operations
(Manpower, Personnel, and Training)
Director, Human Resource Management Division
(OP-95)
Department of the Navy
Washington, DC 20350

Chief of Naval Operations
Head, Manpower, Personnel, Training
and Reserves Team (Op-964D)
The Pentagon, 4A478
Washington, DC 20350

Chief of Naval Operations
Assistant, Personnel Logistics
Planning (Op-987H)
The Pentagon, 5D772
Washington, DC 20350
LIST 1
MANDATORY

Defense Technical Information Center (12 copies)
ATTN: DTIC DDA-2
Selection and Preliminary Cataloging Section
Cameron Station
Alexandria, VA 22314

Library of Congress
Science and Technology Division
Washington, D.C. 20540

Office of Naval Research (3 copies)
Code 4420E
800 N. Quincy Street
Arlington, VA 22217

Naval Research Laboratory (6 copies)
Code 2627
Washington, D.C. 20375

Office of Naval Research
Director, Technology Programs
Code 200
800 N. Quincy Street
Arlington, VA 22217

Psychologist
Office of Naval Research
Detachment, Pasadena
1030 East Green Street
Pasadena, CA 91106
4420E DISTRIBUTION LIST


REFERENCES

Carroll, J. D. and J. J. Chang
1970 "Analysis of Individual Differences in Multidimensional Scaling
Via an N-Way Generalization of Eckart-Young Decomposition,"

Child, J.
1975 "Managerial and Organization Factors Associated with Company
Performance -- Part II: A Contingency Analysis," Journal of
Management Studies, 12: 12-27.

Dewar, R. and J. Werbel
1979 "Universalistic and Contingency Predictions of Employee Satisfaction

Drazin, Robert and Andrew H. Van de Ven

Ferry, Diane L.
1979 A Test of a Task Contingent Model of Unit Structure and Efficiency,

1983 "The Organization Assessment Instrument: An Evaluation of Intrinsic
Validity," Paper presented at 43rd Annual Meeting of Academy of
Management, Dallas (August).

Pennings, J. M.
1975 "The Relevance of the Structural-Contingency Model of Organizational

Schoonhoven, C. B.
1981 "Problems with Contingency Theory: Testing Assumptions Hidden
Within the Language of Contingency Theory," Administrative Science

Tosi, H. and J. Slocum
1984 "Contingency Theory: Some Suggested Directions," Journal of

Tushman, M. L. and D. A. Nadler
1978 "Information Processing as an Integrating Concept in

Van de Ven, Andrew H.
Review, 1, 1: 64-78 (January).
Footnotes

1Because a sizable number of the one-way ANOVAs mentioned above were not significant, an additional analysis was conducted to determine whether contingency effects (represented by those variables for which the ANOVAs were significant) versus universalistic effects (represented by those for which differences were not significant) predominated. Dewar and Werbel (1979) found both universalistic and contingency effects in their analysis of the effect of technological routiness (equivalent to task variability) and structure on satisfaction outcomes. The structure and process variables with significant ANOVAs were separated to create a "contingent" distance measure. "Contingent" distance correlated significantly at -.17 with both satisfaction (p < .007) and efficiency (p < .066). This result leads to the conclusion that over the range of this set of data anyway, contingent effects on satisfaction were not predominant.
performance contours do not retain the same slope over the range of the data, or where ideal points are negative (implying the worst possible performance, with deviation resulting in improvement) rather than positive (Carroll and Chang, 1970). For these reasons, the search for innovative methodologies is likely to continue, possibly outside the scope of those methods currently in vogue among organizational scholars.

Despite these caveats, it is evident that the Systems approach (in whatever form) should be extended both to different classes of data and to a wider class of contingency propositions. One obvious conclusion from this research is that the body of contingent propositions that has entered into the "folk wisdom" of organizational research with little empirical support is still amenable to rigorous empirical investigation. A program of research guided by the Systems approach holds the promise of a tremendous accumulation of replicable findings. Further, such a body of findings will simultaneously fulfill demands for both descriptive and normative theories, since any analysis involving the identification and test of ideal patterns implies both the development of descriptive theory and the documentation of normative propositions.
importance of using multiple performance variables in fit analyses. It may very well be possible, as Dewar and Werbel (1979) have suggested, that task uncertainty-design variable combinations have a more immediate and binding effect on outcomes such as satisfaction than on more objective performance indicators such as growth, profit, or efficiency. On the other hand, it may very well be the case that in social service organizations of the type represented in this data base, the goals and objectives that guide overall design choices are geared more to the optimization of employee satisfaction than that of other performance indicators.

It should be noted that the assumptions employed by this particular approach to systems analysis somewhat restrict the attempt to analyze and discriminate between ideal patterns. First, deviation from ideal pattern is assumed to be related linearly to lower performance, i.e. penalties in the form of lower performance are proportionally constant regardless of the magnitude of the deviation. Second, ideal patterns are viewed as being optimal only (there is, given a particular context, no one "worst way to organize" only a best one). Third, ideal types are singular. The approach does not provide for the possibility of multiple ideal types, or equifinality, given a particular context. In fact, should an equifinality principle be operative, there would be a tendency for correlations between distance and performance to be lower. More sophisticated refinement of the methodology is required, in order to be able to identify the operations of equifinality in the presence of multiple ideal types. In addition, the restrictive assumption of a linear relationship between distance from ideal type and lower performance may not be entirely justified. It is possible to envisage instances where
TABLE 2

Correlations of Distance Measure With Job Satisfaction and Unit Efficiency

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Satisfaction</td>
<td>-.503&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Unit Efficiency</td>
<td>-.314&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>_p < .0001, N = 248

<sup>b</sup>_p < .0008, N = 114
These results compare favorably with those obtained by Drazin and Van de Ven (1984), who obtained significant correlations of -.14 (p < .003) for satisfaction and -.25 (p < .0001) for efficiency, in an analysis in which high performers were identified on the basis of unit efficiency, as opposed to job satisfaction.

---

Insert Table 2 about here

---

Summary and Conclusions

This paper has argued that the concept of fit is central to the development and testing of contingency theory models. While several approaches to fit have been advanced in recent years, the Systems approach developed by Van de Ven and Drazin (1985) and Drazin and Van de Ven (1984) appears to hold great promise. This observation holds particularly for tests of theories that are essentially models of organizing modes, such as the OA contingency of work unit design. Because it focuses on ideal types and multivariate deviation from them, the Systems approach appears well suited to explore propositions that involve not only individual decision-context interactions, but patterns of coherence between them. As such it recognizes both the multivariate nature of design and the concept of fit that is its essence.

The present research has extended the results obtained by Drazin and Van de Ven (1984), as well as providing some cross-validation for the systems approach itself. When high performers were identified and ideal patterns derived on the basis of job satisfaction rather than unit efficiency, the correlations of the distance measure with both performance variables was markedly improved. The results highlight the
<table>
<thead>
<tr>
<th>Task Uncertainty</th>
<th>Low</th>
<th>High</th>
<th>F</th>
<th>p &lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UNIT STRUCTURE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit Specialization</td>
<td>3.167</td>
<td>2.938</td>
<td>0.11</td>
<td>.744</td>
</tr>
<tr>
<td>Unit Standardization</td>
<td>3.721</td>
<td>3.150</td>
<td>5.84</td>
<td>.0205</td>
</tr>
<tr>
<td>Personnel Expertise</td>
<td>2.853</td>
<td>3.004</td>
<td>2.75</td>
<td>.106</td>
</tr>
<tr>
<td>Supervisory Discretion</td>
<td>3.200</td>
<td>2.858</td>
<td>1.87</td>
<td>.179</td>
</tr>
<tr>
<td>Employee Discretion</td>
<td>3.253</td>
<td>3.879</td>
<td>12.29</td>
<td>.0012</td>
</tr>
<tr>
<td><strong>UNIT PROCESS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Written Communication</td>
<td>1.447</td>
<td>2.012</td>
<td>14.42</td>
<td>.0005</td>
</tr>
<tr>
<td>Verbal Communication</td>
<td>1.881</td>
<td>2.721</td>
<td>27.67</td>
<td>.0001</td>
</tr>
<tr>
<td>Frequency of Conflict</td>
<td>1.444</td>
<td>1.750</td>
<td>1.28</td>
<td>.264</td>
</tr>
<tr>
<td>Conflict Resolution by:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidance</td>
<td>1.556</td>
<td>1.826</td>
<td>0.77</td>
<td>.387</td>
</tr>
<tr>
<td>Smoothing</td>
<td>2.556</td>
<td>2.304</td>
<td>0.56</td>
<td>.456</td>
</tr>
<tr>
<td>Authority</td>
<td>3.222</td>
<td>2.957</td>
<td>0.25</td>
<td>.620</td>
</tr>
<tr>
<td>Confrontation</td>
<td>3.611</td>
<td>4.043</td>
<td>2.64</td>
<td>.1125</td>
</tr>
</tbody>
</table>

*An overall MANOVA using all 12 variables produced an F = 2.99 (p < .0089).*
The last column indicates the results of one-way ANOVAs to determine if the means of the profiles on each dimension were different. Differences in means for four of the structure and process dimensions were significant, and an overall MANOVA using all twelve variables was also significant ($F = 2.99, p < .009$). Further, it is worthwhile noting that in all but one case (the exception being conflict resolution by authority) the differences were in the same direction as that hypothesized in the OA contingency model presented in Figure 1. Thus the high performing profiles present fair approximations of the systematized and developmental modes posited in the theory.

The second step of the analysis involved the calculation of the difference between design profiles of individual units and their respective ideal pattern. This was done according to the euclidean distance formula presented above. Lack of fit, or deviation from ideal pattern, should result in poorer performance; hence, the distance measure should correlate negatively and significantly with the two performance measures, job satisfaction and unit efficiency. In order to avoid the possible tautology of testing the same high performing units from which the ideal patterns were initially derived and to be certain that the results would not be influenced by these units, the high performers were dropped from the final step of the analysis. Thus the final step involved the correlation of the distance measure for the remaining units with their respective performance scores. As Table 2 shows, distance correlated with job satisfaction $- .50 (p < .0001)$ and with unit efficiency $- .31$.
The Systems approach first identifies ideal patterns appropriate to different levels of context. These patterns are depicted as points (here, I and II) in \( n \)-dimensional space, where \( n \) is the number of structure and process dimensions. Distance from the ideal point results in proportionally lower performance, regardless of the direction of the deviation involved. The circles can be conceived of as iso-performance contours. Thus, any two units on a circle (and therefore equidistant from the ideal point) will have the same performance, despite the fact that their structure and process scores may be fairly similar (A and B) or very different (C and D). In this example, A and B, C and D have equal performance, but the proximities of E and F to their respective ideal points give them superior performance.
result a lower performance, regardless of the direction in which departure from ideal-type pattern occurs. (See Exhibit 1.)

Data and Results

Conceptually, the Systems approach is similar to the deviation score analysis referred to in the brief description of the Interaction approach above. However, with the Systems approach deviation is measured as the distance from a point in a twelve-dimensional, geometric profile rather than as the distance from a single linear equation line. Thus, systems analysis focuses on differences in pattern profiles and accounts for the full set of all twelve unit structure and process variables. In contrast, the Interaction approach analyzes the fit between task uncertainty and each of the unit design characteristics only one dimension at a time.

The three-step procedure described above was used to analyze the pattern form of fit in relation to job satisfaction. Pattern profiles were generated for the highest performing units (based on the satisfaction measure) under conditions of low and high task uncertainty. The mean scores on these 12 structure and process dimensions were considered as empirically derived "ideal" types representing the systematized and developmental modes. ANOVA and MANOVA tests were run on these ideal types to determine if their profiles actually differed and a comparison was made between the profiles generated and the theory shown in Figure 1 to determine if the derived values matched the predicted ordinal relationships of the OA task contingency theory.

Table 1 shows the unit design profiles of highly satisfied (hence high-performing) units under conditions of low and high task uncertainty.
LIST 3

NAVMAT & NPRDC

NAVMAT

Program Administrator for Manpower, Personnel, and Training
MAT-0722
800 N. Quincy Street
Arlington, VA 22217

Naval Material Command
Management Training Center
NAVMAT 09M32
Jefferson Plaza, Bldg #2, Rm 150
1421 Jefferson Davis Highway
Arlington, VA 20360

Naval Material Command
Director, Productivity Management Office
MAT-00K
Crystal Plaza #5
Room 632
Washington, DC 20360

Naval Material Command
Deputy Chief of Naval Material, MAT-03
Crystal Plaza #5
Room 236
Washington, DC 20360

Naval Personnel R&D Center
Technical Director
Director, Manpower & Personnel Laboratory, Code 06
Director, System Laboratory, Code 07
Director, Future Technology, Code 41
San Diego, CA 92152

Naval Personnel R&D Center
Washington Liaison Office
Ballston Tower #3, Room 93
Arlington, VA 22217

(4 copies)
LIST 4
MEDICAL

Commanding Officer
Naval Health Research Center
San Diego, CA 92152

Psychology Department
Naval Regional Medical Center
San Diego, CA 92134

Commanding Officer
Naval Submarine Medical Research Laboratory
Naval Submarine Base
New London, Box 900
Groton, CT 06349

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

Program Manager for Human Performance (Code 44)
Naval Medical R&D Command
National Naval Medical Center
Bethesda, MD 20014

Navy Health Research Center
Technical Director
P.O. Box 85122
San Diego, CA 92138
LIST 5
NAVAL ACADEMY AND NAVAL POSTGRADUATE SCHOOL

Naval Postgraduate School  (3 copies)
ATTN: Chairman, Dept. of
   Administrative Science
Department of Administrative Sciences
Monterey, CA 93940

U.S. Naval Academy
ATTN: Chairman, Department
   of Leadership and Law
Stop 7-B
Annapolis, MD 21402

Superintendent
ATTN: Director of Research
Naval Academy, U.S.
Annapolis, MD 21402
LIST 6

HRM

Commanding Officer
Organizational Effectiveness Center
Naval Air Station
Alameda, CA 94591

Commanding Officer
Organizational Effectiveness Center
Naval Training Center
San Diego, CA 92133

Commanding Officer
Organizational Effectiveness Center
Naval Submarine Base New London
P.O. Box 81
Groton, CT 06349

Commanding Officer
Organizational Effectiveness Center
Naval Air Station
Mayport, FL 32228

Commanding Officer
Organizational Effectiveness Center
Pearl Harbor, HI 96860

Commanding Officer
Organizational Effectiveness Center
Naval Base (Clcg. PH-46)
Charleston, SC 29408

Commanding Officer
Organizational Effectiveness Center
Naval Air Station Memphis
Millington, TN 38054

Commanding Officer
Organizational Effectiveness Center
1300 Wilson Boulevard, rm 114A8
Arlington, VA 22209
Commanding Officer
Organizational Effectiveness Center
5621-23 Tidewater Drive
Norfolk, VA 23509

Commander
Organizational Effectiveness Center
5621 Tidewater Drive
Norfolk, VA 23509

Commanding Officer
Organizational Effectiveness Center
Naval Air Station Whidbey Island
Oak Harbor, WA 98278

Commanding Officer
Organizational Effectiveness Center
Box 23
FPO New York 09510

Commanding Officer
Organizational Effectiveness Center
Box 41
FPO New York 09540

Commanding Officer
Organizational Effectiveness Center
Box 60
FPO San Francisco 96651

Commanding Officer
Organizational Effectiveness System, Pacific
Pearl Harbor, HI 96860

Commanding Officer
Organizational Effectiveness System, Atlantic
5621 Tidewater Drive
Norfolk, VA 23509

Commanding Officer
U.S. Navy Organizational Effectiveness System, Europe
FPO New York 09510

Commanding Officer
U.S. Navy Organizational Effectiveness Center
Box 4
FPO Seattle 98762
LIST 7
NAVY MISCELLANEOUS

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

Naval Training Analysis
and Evaluation Group
Orlando, FL 32813

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

Chief of Naval Education
and Training (N-5)
Director, Research Development,
Test and Evaluation
Naval Air Station
Pensacola, FL 32508

Chief of Naval Technical Training
ATTN: Code D17
NAS Memphis (75)
Millington, TN 38D54

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

Navy Recruiting Command
Director, Recruiting Advertising Dept.
Code 40
801 North Randolph Street
Arlington, VA 22203

Navel Weapons Center
Code C94
China Lake, CA 93555
LIST 8
USMC

Headquarters, U.S. Marine Corps
Code MPI-20
Washington, DC  20380

Headquarters, U.S. Marine Corps
ATTN: Scientific Adviser,
   Code RD-1
Washington, DC  20380

Education Advisor
Education Center (E031)
MCDEC
Quantico, VA  22134

Commanding Officer
Education Center (E031)
MCDEC
Quantico, VA  22134

Commanding Officer
U.S. Marine Corps
Command and Staff College
Quantico, VA  22134
LIST 9
OTHER FEDERAL GOVERNMENT

Defense Advanced Research Projects Agency
Director, Cybernetics
Technology Office
1400 Wilson Blvd, Rm 625
Arlington, VA 22209

Dr. Douglas Hunter
Defense Intelligence School
Washington, DC 20374

Dr. Brian Usilaner
GAO
Washington, DC 20548

National Institute of Education
EOLC/SMO
1200 19th Street, N.W.
Washington, DC 20208

National Institute of Mental Health
Division of Extramural Research Programs
5600 Fishers Lane
Rockville, MD 20852

National Institute of Mental Health
Minority Group Mental Health Programs
Room 7 - 102
5600 Fishers Lane
Rockville, MD 20852

Office of Personnel Management
Office of Planning and Evaluation
Research Management Division
1900 E Street, N.W.
Washington, DC 20415

Chief, Psychological Research Branch
U.S. Coast Guard (G-P-1/2/TP42)
Washington, D.C. 20593

Social and Developmental Psychology Program
National Science Foundation
Washington, D.C. 20550
Dr. Earl Potter  
U.S. Coast Guard Academy  
New London, CT  06320  

Division of Industrial Science  
& Technological Innovation  
Productivity Improvement Research  
National Science Foundation  
Washington, D.C.  20550  

Douglas B. Blackburn, Director  
National Defense University  
Mobilization Concepts Development Center  
Washington, D.C.  20319  

Chairman, Dept. of Medical Psychology  
School of Medicine  
Uniformed Services University of the Health Sciences  
4301 Jones Bridge Road  
Bethesda, MD  20814
LIST 10
ARNY

Headquarters, FORSCOM
ATTN: AFPR-HR
Ft. McPherson, GA 30330

Army Research Institute
Field Unit - Leavenworth
P.O. Box 3122
Fort Leavenworth, KS 66027

Technical Director
Army Research Institute
5001 Eisenhower Avenue
Alexandria, VA 22333

Head, Department of Behavior
Science and Leadership
U.S. Military Academy, New York 10996

Walter Reed Army Medical Center
W. R. Army Institute of Research
Division of Neuropsychiatry
Forest Glen
Washington, D.C. 20012

Army Military Personnel Command
Atttn: DAPC-OE
200 Stovall Street
Alexandria, VA 22322

Research Psychologist
Selection and Classification Performance
Measurement Team
Army Research Institute
Attention: PERI-SF (Mr. Dennis Leedcm)
5001 Eisenhower Avenue
Alexandria, VA 22333

Commanding Officer
Organizational Effectiveness Center I School
Fort Ord, CA 93941
LIST 11
AIR FORCE

Air University Library
LSE 76-443
Maxwell AFB, AL 36112

Head, Department of Behavioral
Science and Leadership
U.S. Air Force Academy, CO 80840

MAJ Robert Gregory
USAFA/DFBL
U.S. Air Force Academy, CO 80840

AFOSR/NL
Building 410
Bolling AFB
Washington, DC 20332

Department of the Air Force
HOU.SAF/MPXHL
Pentagon
Washington, DC 20330

Technical Director
AFHRL/MO(T)
Brooks AFB
San Antonio, TX 78235

AFMPC/MPCYPR
Randolph AFB, TX 78150
LIST 12
MISCELLANEOUS

Australian Embassy
Office of the Air Attache (S3B)
1601 Massachusetts Avenue, N.W.
Washington, D.C. 20036

British Embassy
Scientific Information Officer
Room 509
3100 Massachusetts Avenue, N.W.
Washington, DC 20008

Canadian Defense Liaison Staff,
Washington
ATTN: CDRD
2450 Massachusetts Avenue, N.W.
Washington, DC 20008

Commandant, Royal Military
College of Canada
ATTN: Department of Military
Leadership and Management
Kingston, Ontario K7L 2W3

National Defence Headquarters
DPAR
Ottawa, Ontario K1A OK2

Mr. Luigi Petrullo
2431 North Edgewood Street
Arlington, VA 22207
Sequential by Principal Investigator

LIST 13
CURRENT CONTRACTORS

Dr. Clayton P. Alderfer
Yale University
School of Organization and Management
New Haven, Connecticut 06520

Dr. Janet L. Barnes-Farrell
Department of Psychology
University of Hawaii
2430 Campus Road
Honolulu, HI 96822

Dr. Jomills Braddock
John Hopkins University
Center for the Social Organization
of Schools
3505 N. Charles Street
Baltimore, MD 21218

Dr. Sara Yogev
Northwestern University
Graduate School of Management
2001 Sheridan Road
Evanston, IL 60201

Dr. Terry Connolly
University of Arizona
Department of Psychology, Rm. 312
Tucson, AZ 85721

Dr. Richard Daft
Texas A&M University
Department of Management
College Station, TX 77843

Dr. Randy Dunham
University of Wisconsin
Graduate School of Business
Madison, WI 53706
List 13 (continued)

Dr. J. Richard Hackman  
School of Organization  
and Management  
Box 1A, Yale University  
New Haven, CT 06520

Dr. Wayne Holder  
American Humane Association  
P.O. Box 1266  
Denver, CO 80201

Dr. Daniel Ilgen  
Department of Psychology  
Michigan State University  
East Lansing, MI 48824

Dr. David Johnson  
Professor, Educational Psychology  
190 Pillsbury Drive, S.E.  
University of Minnesota  
Minneapolis, MN 55455

Dr. Dan Landis  
The University of Mississippi  
College of Liberal Arts  
University, MS 38677

Dr. Frank J. Landy  
The Pennsylvania State University  
Department of Psychology  
417 Bruce V. Moore Building  
University Park, PA 16802

Dr. Bibb Latane  
The University of North Carolina  
at Chapel Hill  
Manning Hall 026A  
Chapel Hill, NC 27514

Dr. Cynthia D. Fisher  
College of Business Administration  
Texas A&M University  
College Station, TX 77843
Dr. Anne S. Tsui
Duke University
The Fuqua School of Business
Durham, NC 27706

Dr. Andrew H. Van de Ven
University of Minnesota
Office of Research Administration
1919 University Avenue
St. Paul, MN 55104

Dr. Sabra Woolley
SRA Corporation
901 South Highland Street
Arlington, VA 22204
Copies of papers can be obtained by writing to the Strategic Management Research Center, 832 Management and Economics Building, University of Minnesota, 271-19th Avenue South, Minneapolis, Minnesota 55455, or by calling (612) 376-1502.

1. Andrew H. Van de Ven, John M. Bryson, and Robert King, "Visions for the Strategic Management Research Center at the University of Minnesota" (March 1984)

2. Andrew H. Van de Ven and R. Edward Freeman, "Three R's of administrative behavior: Rational, random and reasonable...and the greatest of these is reason" (February 1984)


4. John M. Bryson and Kimberly B. Boal, "Strategic management in a metropolitan area; the implementation of Minnesota's Metropolitan Land Act of 1976" (February 1984)

5. Kimberly B. Boal and John M. Bryson, "Representation, testing, and policy implications of procedural planning methods" (February 1984)

6. John M. Bryson, "The role of forums, arenas, and courts in organizational design and change" (February 1984)


8. Ian Maitland, John Bryson, and Andrew H. Van de Ven, "Sociologists, economists, and opportunism" (March 1984)

9. Andrew Van de Ven and Roger Hudson, "Managing attention to strategic choices" (April 1984)

10. Andrew Van de Ven and Associates, "The Minnesota innovation research program" (April 1984)

(12) Michael A. Rappa, "Capital financing strategies of Japanese semiconductor manufacturers and the cost of capital in Japan" (May 1984)

(13) Daniel R. Gilbert, Jr. and Nancy C. Roberts, "The leader and organization culture: navigating the tricky currents" (July 1984)

(14)**Andrew H. Van de Ven and Gordon Walker, "Dynamics of interorganizational coordination" (July 1984)


(17) John J. Mauriel, "Major strategic issues facing public school executives" (August 1984)

(18) R. Edward Freeman and Shannon Shipp, "Stakeholder management and industrial marketing" (August 1984)

(19)**Andrew H. Van de Ven and Robert Drazin, "The concept of fit in contingency theory" (August 1984)

(20) Robert Drazin and Andrew H. Van de Ven, "An examination of alternative forms of fit in contingency theory" (August 1984)

(21) Andrew H. Van de Ven, "Central Problems in the Management of Innovation" (December, 1984)

(22) Daniel R. Gilbert and R. Edward Freeman, "Strategic management and responsibility: A game theoretic approach" (January 1985)


* Currently Unavailable.

** Published.