Disciplinary Philosophy of First-Line Supervisors as a Function of Work-Unit Technology and Personal Values.

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Louisiana State University and Agricultural & Mechanical College

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The Louisiana State University and Agricultural and Mechanical College, Ph.D., 1978.
DISCIPLINARY PHILOSOPHY OF FIRST-LINE SUPERVISORS

AS A FUNCTION OF

WORK-UNIT TECHNOLOGY AND PERSONAL VALUES

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Management

by

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B.S., Louisiana State University, 1967
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# TABLE OF CONTENTS

## CHAPTER

| TITLE PAGE | i |
| ACKNOWLEDGEMENT | ii |
| TABLE OF CONTENTS | iv |
| LIST OF TABLES | vi |
| LIST OF FIGURES | viii |
| LIST OF EXHIBITS | ix |
| ABSTRACT | x |

### I. INTRODUCTION AND DEVELOPMENT OF HYPOTHESES 1

- Overview of the Study 1
- Orientation 3
- Justification for the Study 22
- Purpose of the Study 26
- Scope and Limitations of the Study 46
- Summary and Hypotheses 48

### II. METHODOLOGY 50

- Sample Design 51
- Instruments Used in Data Collection 65
- Data Collection Procedure 83

### III. RESULTS OF THE STUDY 94

- Results for the Distribution of Philosophies of Discipline 94
- Results on Discipline for the Main Independent Variable 101
- Results for Work-Unit Technology Compared to Discipline 117
- Results for Disciplinary Philosophies and Personal Values 125
- Results for the Ordering of Values and Discipline 127
- Results Including Biographical Data Elements 129

### IV. INTERPRETATIONS AND CONCLUSIONS 137

- Theoretical Implications 137
- Practical Implications of Results 153

### V. IMPLICATIONS FOR FUTURE RESEARCH AND SUMMARY 160

- Implications for Future Research 160
- Summary of the Study 163
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS (continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SELECTED BIBLIOGRAPHY</td>
</tr>
<tr>
<td>APPENDIX A: Cover Letter for Questionnaire</td>
</tr>
<tr>
<td>APPENDIX B: Biographical Data Sheet</td>
</tr>
<tr>
<td>APPENDIX C: Disciplinary Style Questionnaire</td>
</tr>
<tr>
<td>APPENDIX D: Task Analyzability Questionnaire</td>
</tr>
<tr>
<td>APPENDIX E: Task Variability Questionnaire</td>
</tr>
<tr>
<td>GLOSSARY</td>
</tr>
<tr>
<td>VITA</td>
</tr>
</tbody>
</table>
LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Biographical Data Elements for Total Sample</td>
<td>56</td>
</tr>
<tr>
<td>II. Biographical Data Elements for the Systematized Mode</td>
<td>61</td>
</tr>
<tr>
<td>III. Biographical Data Elements for the Service Mode</td>
<td>62</td>
</tr>
<tr>
<td>IV. Biographical Data Elements for the Group Mode</td>
<td>63</td>
</tr>
<tr>
<td>V. Results for Pretest Sample on Discipline</td>
<td>85</td>
</tr>
<tr>
<td>VI. Results for Pretest Sample on Task Analyzability</td>
<td>86</td>
</tr>
<tr>
<td>VII. Results for Pretest Sample on Task Variability</td>
<td>87</td>
</tr>
<tr>
<td>VIII. Results for Pretest Sample on Values Inventory</td>
<td>88</td>
</tr>
<tr>
<td>IX. Results for Pretest Sample on Technology Classification</td>
<td>90</td>
</tr>
<tr>
<td>X. Results on Discipline for Total Sample</td>
<td>96</td>
</tr>
<tr>
<td>XI. Results on Discipline by Organization</td>
<td>98</td>
</tr>
<tr>
<td>XII. Correlation Matrix on Discipline for Total Sample Using Single Technology</td>
<td>104</td>
</tr>
<tr>
<td>XIII. Results on Stepwise Regression Using Technology Total and Values</td>
<td>107</td>
</tr>
<tr>
<td>XIV. Correlation Matrix on Discipline for Total Sample—Standardized Scores</td>
<td>109</td>
</tr>
<tr>
<td>XV. Results on Stepwise Regression Using Standardized Components of Technology and Values</td>
<td>111</td>
</tr>
<tr>
<td>XVI. Results on Stepwise Regression Using Raw Scores for Significant Variables</td>
<td>113</td>
</tr>
<tr>
<td>TABLE</td>
<td>PAGE</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>XVII. Results on Stepwise Regression Using Only Standardized Significant Variables</td>
<td>114</td>
</tr>
<tr>
<td>XVIII. Variance Explained by Total Equation</td>
<td>116</td>
</tr>
<tr>
<td>XIX. Two-Way Anova with Interaction</td>
<td>119</td>
</tr>
<tr>
<td>XX. Rankings of Means on Discipline by Technology and Values</td>
<td>120</td>
</tr>
<tr>
<td>XXI. One-Way Anova on Technology Groups</td>
<td>122</td>
</tr>
<tr>
<td>XXII. Statistics on Discipline for Each Technology Mode</td>
<td>123</td>
</tr>
<tr>
<td>XXIII. One-Way Anova on Discipline for Highest Deviation Score Per Value</td>
<td>124</td>
</tr>
<tr>
<td>XXIV. Discipline Statistics for Supervisors Classified by Highest Deviation Score Per Value</td>
<td>126</td>
</tr>
<tr>
<td>XXV. Order of Values from Humanitarian to Legalistic Philosophies of Discipline</td>
<td>128</td>
</tr>
<tr>
<td>XXVI. Results Using Work-Unit Technology, Personal Values, and All Biographical Data Elements</td>
<td>131</td>
</tr>
<tr>
<td>XXVII. Results on Significant Work-Unit Technology, Personal Values, and Biographical Data Elements</td>
<td>133</td>
</tr>
<tr>
<td>XXVIII. Variance Explained by Saturated Equation</td>
<td>134</td>
</tr>
<tr>
<td>XXIX. Discipline Matrix Relating Work-Unit Technology and Personal Values</td>
<td>144</td>
</tr>
<tr>
<td>XXX. Values Related to Generalized Regression Equation</td>
<td>147</td>
</tr>
<tr>
<td>XXXI. Variations Above or Below the Generalized Regression Line</td>
<td>151</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Frequencies on Discipline for Total Sample</td>
<td>97</td>
</tr>
<tr>
<td>2. Generalized Relationship of Discipline to Work-Unit Technology</td>
<td>141</td>
</tr>
<tr>
<td>3. Discipline Means for Each Value Within Work-Unit Technology</td>
<td>145</td>
</tr>
<tr>
<td>4. Discipline as a Function of Work-Unit Technology Modified by Personal Values</td>
<td>149</td>
</tr>
<tr>
<td>EXHIBIT</td>
<td>PAGE</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>I. Disciplinary Style Questionnaire</td>
<td>67</td>
</tr>
<tr>
<td>II. Questionnaire on Task Analyzability</td>
<td>71</td>
</tr>
<tr>
<td>III. Questionnaire of Task Variability</td>
<td>73</td>
</tr>
<tr>
<td>IV. Scale 1. Theoretical</td>
<td>77</td>
</tr>
<tr>
<td>V. Scale 2. Power</td>
<td>78</td>
</tr>
<tr>
<td>VI. Scale 3. Achievement</td>
<td>79</td>
</tr>
<tr>
<td>VII. Scale 4. Human</td>
<td>80</td>
</tr>
<tr>
<td>VIII. Scale 5. Industry</td>
<td>81</td>
</tr>
<tr>
<td>IX. Scale 6. Financial</td>
<td>82</td>
</tr>
</tbody>
</table>
ABSTRACT

A study was performed to test the effects structural and behavioral dimensions have on the application of discipline in organizations. A questionnaire was designed to elicit responses from first-line supervisors on their choice of the appropriate disciplinary action to be taken in each of four cases. These cases were taken from actual company experiences and involved theft, sleeping on the job, drinking on the job, and fighting. The responses to these cases were scored and placed on a continuum of philosophies of discipline which ranged from a pure legalistic approach to a pure humanitarian approach. The structural dimension of organizations, one of two independent variables, was defined as the work-unit technology used in the transformation of inputs to outputs within the work unit. Three classifications were used—systematized mode, service mode, and group mode. These classifications were measured by the summation on the task variability and task analyzability questionnaires.

The second major independent variable, personal values of supervisors, was obtained by the use of a commercially available management values inventory, published by Organizational Test, Ltd. Theoretical, power, achievement, human, industry, and financial values of the supervisors were related to the practice of discipline.
The sample of 92 first-line supervisors was obtained from nine organizations in the midwestern United States. The organizations roughly corresponded to the three work-unit technology modes and included chemical processors, banks, universities, government agencies, heavy manufacturing firms, etc. These organizations were randomly selected from a Chamber of Commerce list and then asked to participate.

The responses from the first-line supervisors were analyzed using a step-wise multiple regression procedure. The choice of the disciplinary action applied was the dependent variable which was then related to the two independent variables—work-unit technology and personal values. All major hypotheses were supported beyond the .01 level of statistical significance. It was concluded that the choice of a disciplinary philosophy by first-line supervisors is dependent upon the work-unit technology and the supervisor's personal values. The strongest relationship existed between discipline and work-unit technology, although the supervisor's personal values moderated the application of discipline within each of the technology classifications. The results were related to different elements in supervisory training, organizing work-units, planning, and controlling.
CHAPTER 1

INTRODUCTION AND DEVELOPMENT OF HYPOTHESES

Overview of the Study

Although discipline in the industrial setting has received much attention in the past, it is usually investigated as one of many independent variables. As an independent variable, discipline in conjunction with other variables has been used to explain differences in turnover rates, absenteeism, and productivity. More abstract constructs such as motivation, leadership, and organizational climate have also been related to various prescriptive statements concerning discipline. Is discipline really an independent variable? Or, could the most effective style of discipline be itself a dependent variable? These questions turn the investigation around and changes the direction of inquiry from finding the principles of discipline and their application, to finding the best match between an organizational structure and the choice among various styles of discipline.

The present study purports to investigate discipline in various organizational settings and will attempt to measure the effect certain variables have on the application of discipline in those settings. In this chapter an orientation to the relevant literature concerning discipline and two of the major variables to be investigated will be presented from the literature on discipline. A justification
will be developed relative to some of the neglected areas concerning discipline in the industrial setting. Further, the hypotheses to be tested statistically will be presented in the purpose section of this chapter. Finally, the scope of the study and some of its limitations will be presented.

From the framework presented in Chapter 1, the remainder of the study will explain how the study was conducted and results and conclusions will be presented. Chapter 2 will present the methodology used in the study. Included in Chapter 2 will be major sub-sections in which the sample, the instruments, and the procedure followed in investigating the hypotheses stated in Chapter 1 are discussed.

Chapter 3 will present the results reached in this study. The breakdown will be by the effect the two main variables--work unit technology and individual values--have on the application of discipline in the industrial setting. Also presented will be the variation of supervisors expressed philosophies of discipline within each work-unit technology and within individual supervisory value system. The effect of biographical data elements on the implication of discipline will also be investigated and presented in Chapter 3.

The interpretation of the results obtained in the present study will comprise the material for Chapter 4. The basic outline will be that presented in Chapter 3. However, the emphasis in Chapter 4 will be on the interpretation of those results relative to their impact on management practice and organizational design.
Chapter 5 is a summary and conclusions section. The direction for future research in this area will also be discussed.

Orientation

Almost every text book written in the field of management today contains some reference to discipline. Historically, as well as currently, the function of discipline is to provide the basis for order within groups and to structure an individual's behavior toward or away from described activities. Most writings in early periods were related to either matters of state or religion. However, as industrialization began in the 19th century the prescriptions became more specific to the industrial setting. Contemporary thought on industrial discipline had its genesis in the early 1900's as the new objectivism "Scientific Management" gained considerable force and adherents. Writers of this school emphasized the replacement of arbitrary actions with a set of principles to guide the supervisor in disciplinary actions. A planned system of rules, detailed records, consistency, and the use of a shop disciplinarian were some of the particular characteristics of the Scientific Management School.

---

The essence of discipline under the Scientific Management philosophy can be gleaned from the writings of several authors classified as applying the scientific management method. These still form the basis for designing a discipline system for many companies today. Some of the representative statements on discipline from the scientific management school follow:

Some method of disciplining the men is unfortunately a necessary element of all systems of management. It is important that a consistent, carefully considered plan should be adopted for this as for all other details of the art. No system of discipline is at all complete which is not sufficiently broad to cover the great variety in the character and disposition of the various men to be found in a shop.²

The disciplinarian should be a trained specialist who holds his job during good and efficient behavior. He should be free from the politics of election by a self-governing body. He should also be of the management in selecting employees, fixing base rates for wages, and determining promotion of deserving workers and foremen.³

The greatest power in Germany in the past has been that of their autocratic rulers who not only encouraged scientific development, but demanded it.⁴


⁴Henry Lawrence Gantt, Industrial Leadership (Yale University Press, New Haven, Conn., 1916), p. 15
On the other hand, the results obtained under democratic methods are far more permanent and less liable to be perverted to false ends.\(^5\)

The general policy of the past has been to drive. But the era of force must give way to that of knowledge. In the future the policy will be to teach and to lead to the advantage of all concerned.\(^6\)

There is the discipline of life which leads us, almost compels us, to follow the teaching that comes to us from intimate contact with the existing order.\(^7\)

Because the success of the whole plant depends not on its wealth or its men or its product, but on its spirit and rule, penalties for persistent infraction should be relentlessly severe.\(^8\)

Although seemingly harsh by current standards, discipline under the principles of scientific management was a very humanitarian change from the disciplinary procedures prevalent prior to the turn of the century. Some of the characteristics of discipline which have had a profound influence on business establishments would include a planned system of rules, a detailed system of records,  

\(^5\)Ibid., p. 16.  
\(^8\)Ibid., p. 140.
consistent, judicial, fair application of disciplinary actions, and leading workers in the benefits of good discipline. Although advocated by most writers in the scientific management school, the use of a shop disciplinarian has never been widely accepted in modern practice. The other characteristics of the above writers are found to be pervasive in today's modern organizational climate. Thus, we have the foundations of modern disciplinary action rooted in writings published around the turn of the century.

Developing almost concurrently with the Scientific Management school, the Management Process school was prescribing essentially the same system of discipline for industry to follow. Formal and mutually arrived agreements between employer and employee constituted the system of rules. Consistent and unflinching application of penalties for infraction was tempered by considering the intent of the offending individual. One major point was different. The writers of the Management Process school disagreed with the use of a shop disciplinarian; rather they advocated penalties be imposed by the worker's immediate superior.

Differing from the approach used by the Scientific Management school, the writers of the Management Process school used a more deductive approach to formulating a managerial theory. Viewing management as a universal process inherent in all organized activity, writers of this school sought to analyze the firm in terms of the framework provided by management functions. Discipline was one of
those functions. The following are representative quotes from several writers in the Management Process school:

Discipline is in essence obedience, application, energy, behavior, and outward marks of respect observed in accordance with the standing agreements between the firm and its employees, whether the agreements have been freely debated or accepted without prior discussion, whether they be written or implicit, whether they derive from the wish of the parties to them or from the rules and customs, it is these agreements which determine the formalities of discipline.\(^9\)

The well being of the concern does not permit, in cases of offense against discipline, of the neglect of certain sanctions capable of preventing or minimizing their recurrence.\(^10\)

Community of understanding based upon order and justice applied to the principles or organization is the foundation of faithful discipline in modern industry.\(^11\)

Obedience as a necessary factor in discipline rests on superior power and is disrupted easily. Rather discipline should be based on the power of faith—the superior and subordinate should be indoctrinated to the ideals of the company, believe in them, and are bound alike by its requirements.\(^12\)

---


\(^10\) Ibid., p. 23.


\(^12\) Ibid., p. 179.
It is some action that is taken for the
purpose of conditioning behavior to the end
that a repetition of undesirable behavior
will be prevented, a better unification of
organizational and personal interest will
be developed, and greater assurance of
correct action by the individual or group
in the future will result.13

The discipline that is afflicted must
be just, but sufficiently severe to meet
the requirements of the situation.14

In determining the nature and degree
of disciplinary action that is made nec­
essary by some improper act of a subordinate
the intent of the individual should be
considered.15

Consistency in disciplinary action is
extremely important. In general, it is
more important than the degree of severity.16

The writings of authors in the Process School of
Management indicate that they thought discipline was a
logical extension of other management principles. Other
important points discussed by these authors included
explicitly or implicitly negotiated agreements between
employer and employee, mutual consent to a standard of
acceptable behavior, and a consistent application of the
agreed upon penalties after a mutually derived set of
agreements between the organization and its employees.

13Ralph C. Davis, The Principles of Factory Organi­
zation and Management (Harper and Bros., New York, 1928).
14Ibid., p. 312.
15Ibid., p. 312-313.
16Ibid., p. 313.
Built on the success of the classical school, a new movement in management literature began with the Hawthorne experiments. 17 The Neoclassical school of management thought focused increasing awareness on another component of the organization in addition to the bureaucratic structure—the individual and his social relationships. Although other writers 18, 19 predated the Hawthorne experiments, the work of Mayo 20 set the stage for Neoclassical thought. Pursuing the job satisfaction leads to increased productivity relationship, many improvements were made in the employee/employer relationship. The basic premise was that a company was considered to be "a social system and that the employees were largely motivated and controlled by the human relationships in that system." 21 Workers who were members of this social system were responsible for the cooperative effort made toward attainment of company objectives.

18 Hugo Munsterberg, Psychology and Industrial Efficiency (Houghton Mifflin, New York, 1913).
19 Oliver Sheldon, The Philosophy of Management (Sir Isaac Pitman and Sons, Lt., London, 1930).
Also they were responsible for any dysfunctional actions. Specifically regarding discipline, the responsibility for setting rules and penalties became a joint function of management and workers. These agreements were theoretically acceptable to the general community, the peer group of workers, and management. Some movement was also made toward the concept of self-discipline commensurate with a declining use of authority to insure compliance.

As examples of discipline under the Neoclassical school of management thought, two authors will be discussed whose work typifies the wide range of literature found classified under this school. The first, Oliver Sheldon, actually predated the Hawthorne experiments. However, his works foreshadow the writings under the Neoclassical school. Sheldon advocated the firm be structured according to the concept of service to the community or in modern context, be socially responsible. Management, an integral part of the firm, should share the responsibility with workers and be guided in their actions by the overriding consideration of service to the community. Perceiving that the employer/employee relationship was the most immediate link between the company and the community, Sheldon thought it logically followed that the workers should share in decisions concerning their work environment.

As evidence of Sheldon's philosophy the following quote exemplifies the logical extension from community
structure and company action:

In the determination of the laws arising from this principle "justice", and in the settlement of particular cases coming under such laws, the workers themselves may take a share. In social life, the individual is governed by laws of his own and tried by juries of his peers. There is no reason why a similar course should not be followed in industry.22

Following from the preceding statement regarding discipline, Sheldon calls for the establishment of a disciplinary action committee comprised of the workers' peers. Two things were to be decided by this committee -- the rules to be in effect and the penalty to be applied. Certain circumstances surrounding the offense, such as age, length of service, and character of service were to be considered in deciding the application of a penalty.

The benefits of such a democratic system were many. Sheldon emphasized the goodwill generated among the company's employees and the general community. The following quote is an example of his thoughts on the benefits accruing to a disciplinary procedure such as advocated above:

As for discharges for purely personal reasons such as those connected with discipline, the employee may legitimately claim that his case shall be considered by his fellow workers as well as by his management. Management will lose nothing, but will rather be reinforced by the

22 Oliver Sheldon, op. cit., p. 168
support given to its actions by the public opinion of the factory.\textsuperscript{23}

From the preceding two quotes the system of rules and penalties governing the firms operations are formulated by a method similar to which laws and penalties are written in society. When an infraction occurred a committee of the worker's peers would consider extenuating circumstances and apply the appropriate penalty.

Consistent with the Neoclassical school of management thought, the group norms of the workers rather than the norms of management were considered to be the standard by which behavior was judged.

The second author to be discussed under the Neoclassical school of management thought is Douglas McGregor. Although McGregor advocated that increased participation by the worker would have significant impact on the successful attainment of company objectives, his work had a much wider application than other writers in the field. McGregor is probably best known for his Theory X and Theory Y assumptions about people. These assumptions were believed to be the basis for designing organizations dependent upon how a manager viewed his employees. Theory Y was the ultimate goal that managers should strive for, however there are circumstances

\textsuperscript{23}Ibid., p. 169.
according to McGregor which dictate the use of a Theory X
approach. This is evident as McGregor states:

Authority is perfectly appropriate
as a means of influencing behavior under
certain circumstances. There is nothing
inherently wrong or bad about giving
an order or making a utilitarian decision.\textsuperscript{24}

Continuing further to qualify the preceding
statement McGregor says "There are many circumstances,
however, when the exercise of authority fails to achieve
the desired results."\textsuperscript{25}

Although strongly advocating that authority
is not inherently bad, McGregor recognizes and asks that
the manager also be cognizant that there are other
means of controlling behavior. The following quote makes
that point clear:

The first thing to be noted about
authority is that it is but one of several
forms of social influence or control.\textsuperscript{26}

All these methods of social control
are relative; none is absolute. The
appropriateness of a given form of control
is a function of several other variables.
Effective control consists in 'selective
adaptations' to these variables.\textsuperscript{27}

\textsuperscript{24}Douglas McGregor, The Human Side of Enterprise
\textsuperscript{25}Ibid., p. 31.
\textsuperscript{26}Ibid., p. 18.
\textsuperscript{27}Ibid., p. 28.
The power to influence others is not a function of the amount of authority one can exert; it is, rather, a function of the appropriate selection of the means of influence which the particular circumstances require.\textsuperscript{28}

Other forms of social influence were physical coercion, persuasion, and influence of professional "help" with reliance on knowledge. Specifically considering this McGregor considered the most important variable to be the extent of a worker's dependence created and maintained by the use of authoritarian controls. These types of controls have diminished from earlier periods. Today managers have been forced to choose other means of control such as persuasion to insure compliance with rules. Looking even further McGregor felt self control and self direction would increase as the workers commitment to company objectives increased. Therefore the extent to which a company can satisfy the self-actualization needs of the individual through the types of jobs offered could do much to decrease the dependence on authoritarian controls in the supervision of workers. McGregor reminds us, however, that complete permissiveness in dealing with employees is probably not feasible in the vast number of circumstances in the industrial setting:

\textsuperscript{28}Ibid., p. 31.
The use of physical coercion can never be discarded completely, but used only in certain circumstances. 29

Although recognizing the necessity for including authority as a form of control, McGregor advocates the general postulate of the Neoclassical school by proposing that discipline be basically self-discipline where the circumstances of the situation will permit. After the initial acceptance of a minimum standard of conduct at the time of employment the employee thereafter sets his own rules and methods of control. Even so, the power to insure compliance remains firmly in the hands of management.

Comparing the principal characteristics of discipline under the Classical and Neoclassical schools one important difference is illuminated. Whereas in the Classical school the responsibility for setting rules and penalties were the exclusive province of management, under the Neoclassical approach to management such responsibilities were to be shared by the management and the workers. This change in management thought was the direct result of viewing the organization as a social system. Management thought specifically recognized the workers' power to influence the attainment of organizational objectives by means which were beyond the control of management. Driving workers to comply with company regulations was found to be

29 Ibid., p. 32.
in some circumstances counterproductive. Mutually derived agreements with shared responsibilities and self discipline were considered to be more conducive to obtaining compliance than the exclusive use of authoritarian types of control.

From writings external to business-oriented publications the basis for modern theories relating to organization was formulated. Korzybski, whose classic work dealt with general semantics, postulated that the investigation of complex systems could be more effectively pursued if scientists could release themselves from the confining logic of Aristotle.\(^{30}\) Without the restrictions of scientific inquiry having to fit within an either-or context investigators could apply non-aristotelian techniques and thereby begin to formulate hypotheses which centered around the degrees of relationships which exist in complex systems. Another writer, Norbert Wiener, made a significant contribution in his classic work on cybernetics.\(^{31}\) Viewing an organization as a cybernetic system with the component parts being inputs, transformation processes, outputs, and negative feedback loops through a dynamic environment, Weiner pointed the way toward investigation of organizations


as a total system comprised of sub-systems. General systems theory made significant inroads into scientific inquiry following the work of Ludwig von Bertalanffy.\textsuperscript{32} Although initially applied in the life sciences, the concept of general systems theory quickly became the foundation for further inquiry into complex human organizations. The contributions of the above three authors generated much research in organizational theory and management. In conjunction with the insights provided by Chester Barnard, Mary Parker Follette, and Kenneth Boulding, these authors helped to bridge the transition from the relatively deterministic models prescribed by the classical and neoclassical schools to the more dynamic approach utilized today.\textsuperscript{33-35} Specifically, organization structures and management concepts were no longer considered unidimensional. Rather, cause and effect relationships could be the result of numerous interrelated factors. For instance, the most effective organizational structure could no longer be

\begin{itemize}
\item \textsuperscript{33}Chester I. Barnard, The Functions of the Executive (Harvard University Press, Cambridge, Mass., 1938).
\item \textsuperscript{34}Henry C. Metcalf and L. Urwick, eds., \textit{Dynamic Administration: The Collected Papers of Mary Parker Follett} (Harper, New York, 1940).
\end{itemize}
specified without first considering the interrelationship between the sub-systems of the organization and the relevant sub-systems in the appropriate dynamic environment. In other words, there was no one best way to design organization structures nor manage its component parts.

The application of discipline in modern organizations has not escaped the changes in management practice that resulted from viewing an organization as a system. Some changes have been made in the prescriptive statements about discipline as modern authors attempt to integrate new findings about the relationship between organizational structure and human behavior into their writings. Discipline in modern practice approaches the mandate given by research on systems and contingency theory. Most modern writers\textsuperscript{36-43} prescribe similar treatments to deal with

\begin{itemize}
\item \textsuperscript{38} Michael J. Jucius, \textit{Personnel Management} (Irwin, Homewood, Ill., 1975).
\item \textsuperscript{40} Herbert G. Hicks, \textit{The Management of Organizations: A Systems and Human Resources Approach} (McGraw-Hill, New York, 1972).
\item \textsuperscript{41} Herbert J. Chruden and Arthur W. Sherman, Jr., \textit{Personnel Management} (South-Western, Cincinnati, Ohio, 1972).
\end{itemize}
behavior not consistent with company policy. Flippo, for example, suggests that:

1. Disciplinary action should be taken in private.

2. An application of a penalty should always carry with it a constructive element.

3. Disciplinary action should be applied by the immediate supervisor.

4. Promptness is important in the taking of disciplinary action.

5. Consistency in the administration of disciplinary action is highly essential.

6. An immediate supervisor should never be disciplined in the presence of his own subordinates.

7. After the disciplinary action has been taken, the manager should attempt to assume a normal attitude toward the employee. 44

Lists like the one above are usually accompanied by a suggested step-wise format for applying progressively more severe penalties for serious or persistent infractions. Minor infractions which do not have serious consequences may have four steps in the enforcement procedure. The first step is an informal warning by the first-line supervisor. The second step is a warning in the


43Henry L. Sisk, Management and Organization (South-Western, Cincinnati, Ohio, 1973).

presence of a union representative. The third step is a written reprimand by some higher supervision that the employee's immediate supervisor. Suspension could result at this step. The last step for a minor infraction which occurs within a certain time period could be handled as a major offense and may result in immediate discharge. Major offenses which are defined as those that interfere with production or damage morale usually result in more drastic enforcement procedures. For the first offense, the employee could be removed from the job or given a suspension plus a written reprimand. In cases involving the second major offense the employee could be removed from the job and a written final warning given to him. Suspension of a longer period of time could also accompany this final warning. In the case of a third offense, the employee could be immediately discharged. Special offenses such as those of a criminal nature could be dealt with in a more drastic manner by immediately discharging the employee from his job.  

The above prescriptions concerning the application of discipline in the industrial setting, plus the step-wise procedure for applying penalties comprise the major portion of the disciplinary procedures found in modern organizations. In most cases, the supervisor is told to consider certain

45 For more specific format see Walter Collins and Herman Harrow, "Does the Penalty Match the Offense?" Supervisory Management, Vol. 3, No. 9 (September, 1958), p.20.
variables in applying disciplinary action. Some of these would include the degree of severity, intent to violate the rules, and extenuating circumstances. Also, there is usually an appeal to emphasize the positive aspects of discipline, particularly in regard to fostering a desire for self-discipline on the part of the employee.

A comparison across most of the modern writers in management and personnel management leads to the following conclusion—the prescriptive statements concerning discipline follow a very similar path in prescribing to supervisors in organizations a procedure which supposedly fits most situations. No one can really quarrel with the outline of general principles presented by Flippo. Promptness and consistency in the administration of disciplinary action are very important. Extenuating circumstances should be considered in the application of a penalty by the employee's immediate supervisor. However, the prescribed method or procedure for dealing with infractions has changed very little from the writings of the Neoclassical school of management thought. Most of the variables considered in modern writings are behavioral in nature and have not been investigated with any degree of diligence. Although the modern writings in other areas of organizational design and management theory have included the concepts of systems theory and contingency theory, literature dealing with discipline has not.
Justification for the Study

The release from confining prescriptive principles by the systems and contingency approaches has not been without mixed consequences. Although systems theory provides the researcher with the framework to consider the total organization, study of component elements become increasingly difficult. Contingency theory also presents opportunities matched with new methodological problems. A wide degree of latitude exists in the phrase, "It depends." But the logical question follows--"On what?" The problems in applying discipline follow from the above, as the present research will attempt to examine. The supervisor operating under the above approach to discipline is in an unenviable "Catch-22" situation. While being encouraged to emphasize positive aspects or constructive discipline, he or she is also being warned against inconsistency in applying disciplinary action. Promptness is important, but the supervisor is cautioned to take the time to consider other variables. The supervisor, faced with conflicting aims, usually ignores "ninety-five percent of the violations and only tends to the big ones."\(^{46}\) This may place the supervisor in a guilt-producing position, since most organizations publish rules because they expect them

\(^{46}\)Private communication
to be observed. How is the supervisor to decide on the proper balance between maintaining the integrity of his work unit by applying the penalties specified in a company rule and the realities of behavioral reactions by his employees if he should apply those penalties?

The main problem with modern theory and practice on discipline is that it prescribes a course of action which supposedly covers most industrial situations. Because it is so general it provides little in the way of specific guidance to the supervisor in his particular situation. Also, the almost universal appeal to practice constructive discipline does not consider situations in which punitive discipline may be necessary and desirable to the principal elements in the organization—the company, the supervisor, and the employee. Some research has been conducted which sought to explore, not the similarities in disciplinary practice as presented in modern writing, but the differences among supervisors and managers. One of the first was an article by Shull and Cummings which reported a bimodal distribution across the following five philosophies of discipline:

1. Pure Legalistic
   a. The supervisor holds that a "rule is a rule, is a rule..."
   b. The standards are necessary to control and rules are used to give predictability and harmony to organizations.
   c. Individual judgments by supervisors open the way for a charge of discrimination.
2. Legalistic-Judicial
   a. Concern is with maintaining the administrative effectiveness.
   b. There must be consistent application of discipline.
   c. The supervisor retains the right to invoke the exception principle.

3. Judicial-Clinical
   a. The supervisor should evaluate certain aspects of the violation such as intent and degree.
   b. Varying degrees of the penalty may be applied for each infraction.

4. Clinical-Humanitarian
   a. The supervisor believes that most violations are chance or accidental deviations that don't seriously affect the functioning of the system and the employee is not usually at fault.
   b. There are some employees that violate the rules for selfish reasons and must be punished.

5. Pure Humanitarian
   a. Rules are established more for guidance and development of subordinates than for short-term administrative efficiency.
   b. Employees are by nature individuals who accept rules and honestly try to live up to them.
   c. Control can be achieved through self-or social discipline.47

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Further differences were reported by Scott. Differences were found between companies by Shaak and Schwartz. Other authors have either found differences or described situations where differences have caused turmoil.

In comparison, the prescriptive statements by modern authors who have used a deductive approach to the study of discipline greatly outweigh the reporting of empirical findings. However, these differences do exist as evidenced by the research presented thus far. In spite of the almost universal similarity of modern authors' writings on discipline, when the application of discipline in the industrial setting is subjected to investigation there does not seem to be any consistent pattern of findings. Also, despite the almost universal appeal for non-punitive styles of discipline, the application of this theory is rarely observed in the industrial setting. Thus, one must conclude that there exists no firm theoretical underpinning for modern disciplinary action. The diversity of findings in opposition to similar prescriptions proposed by modern writers suggests that perhaps further refinement of the implementation process of discipline may not yield significant improvement; examination of the variables in the


situation and the characteristics of the people involved may be more productive. Two major classes of variables which may have a significant impact on the application of disciplinary action are discussed in the next section. These will form the basis for the present study.

Purpose of the Study

As suggested in the preceding section, there has been very little systematic investigation of how discipline is applied in the industrial setting. Findings are at best sketchy and rarely relate to the theoretical models presented by modern writers. Research is needed which will empirically test not only the general philosophy of disciplinary action but will also attempt to explore the relationships that exist between two broad concepts—organizational structure and human behavior. The present study has the following purposes:

1. To determine from a wide range of organizations the most prevalent disciplinary philosophy of first-line supervisors.

2. To determine which broad conceptual variable—organizational structure or human values—has the greatest impact on the application of discipline in the industrial setting.

3. To determine to what extent biographical data elements impact on the application of discipline.
The remainder of this section will develop the specific investigations in relation to the stated purposes. First, the descriptive part of the study will be presented—the part in which the most prevalent disciplinary philosophy from a wide range of organizations will be determined. Second, the structural dimension of work-unit technology and its effect on discipline will be discussed. Third, the hypotheses generated concerning the effect personal values of supervisors have on discipline will be stated. Finally, the relationships that are hypothesized to exist between discipline and biographical data elements will be formally stated.

Although the present study of the most prevalent disciplinary philosophy in the industrial setting is basically exploratory and descriptive in nature, some hypothesized results can be proposed using the research findings quoted earlier in this chapter. Although Shaak and Schwartz\(^{50}\) dealt exclusively with utility companies, they found extreme variances in the application of disciplinary penalties using the same case as a measurement device. In other words, an employee committing the same infraction could be severely punished in one utility company while receiving a mild reprimand in another utility company. Scott\(^{51}\) found a wide range of hierarchical and non-hierarchical systems used in industry to deal with

\(^{50}\)Loc. cit.

\(^{51}\)Loc. cit.
disciplinary infractions. Again there were no consistent patterns which could be ascertained. As reported previously, Schull and Cummings\textsuperscript{52} reported a bimodal distribution of responses from managers deciding on specific disciplinary penalties to be applied to a specific infraction. In a previous study the present writer found that the application of discipline displayed a wide range although responses were confined to two industries.\textsuperscript{53} All of these findings point to a great diversity of disciplinary action in organizations. Considering the above findings, the relatively large sample to be used, and the wide diversity of situations, supervisors, and employees within the sample, the following hypothesis will be tested:

Hypothesis 1: The distribution of scores for disciplinary action will be a normal one. The mean of the distribution will occur approximately half way between the two extreme positions on the questionnaire—ignoring the infraction and discharging the employee.

Contingency is a concept relatively recent to the study of management and organization theory, although it has made significant inroads into prescriptive statements about management practice. The usual interpretation of contingency theory is a product of an increasing awareness that prescriptive statements or principles of management

\begin{itemize}
\item[52] Loc. cit.
\end{itemize}
are effective only within given situations. The effectiveness of a specific managerial action often depends on how well that action matches the characteristics of the people involved and the specific elements of the situation. Numerous research studies have made a substantial case for the above proposition, the major ones being described below.

Contingency theory as it applies to organization theory derives its current impetus in the research work of Woodward. This extensive work explored the effect different complexities of production technology had on the dependent variable—organization structure. "Organizational success," was defined as the composite results of the investigators' classifications of each company on the basis of success or lack of success after reviewing their annual reports, stock price fluctuations, share of the relevant market, and extent of expansion in the industry. The firms were also classified as to one of three technologies:

1. Unit or small batch
2. Large batch and mass production
3. Long-run process production

"Successful" firms within each of these classifications exhibited similar characteristics over such dimensions as definition of duties, delegation of authority, managerial leadership style, line-staff distinction, control procedures, written communication, and disciplinary sanctions. "Unsuccessful" firms reported characteristics

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which were much more varied on these dimensions. The conclusion of Woodward was that successful firms had organizational structures which matched the particular type of technology used in the production of goods and services. Thus, the effectiveness of a particular organization structure "depends" more on the situation to which it is applied rather than how well a manager follows the prescriptive statements of any particular school of organization theory.

Following Woodward's landmark work the field of organization theory has been vigorously researched for further evidence of the relationship between technology and organizational structure. Contingency theory has also been extensively applied to investigations which explore the relationship between the firm's external environment and internal structural elements. Representative propositions on organizational structure which have resulted from this research would include:

Where technology is either of the unit, small batch type, or long run process, the most effective organizational structure will be less according to the concepts of classical organization theory. Conversely, if the technology is of the large batch or mass production type an organizational design will be more effective if it follows the prescriptions of the classical theory.⁵⁵

⁵⁵J. Woodward, op. cit.
Sub-systems within larger systems..."develop particular attributes in relation to the requirements posed by the relevant external environment."56

"The organization operating in a stable environment can rely upon the hierarchial structure and establish procedures to ensure coordination, whereas elaborate integrating mechanisms may be needed with an unstable environment."57

"...technology is a determinant of the human input required by an organization, and thus, indirectly, of the pre-disposition of employees."58

"...technology is a determinant of certain gross features of organizational structure and procedure."59

"...technology is an immediate determinant of individual and group job designs and therefore indirectly a determinant of social structure and norms."60

"The fact that organizational characteristics, technology, and success were linked together in this way suggested that not only was the system of production an important variable in the determination of organizational structure, but also that one particular form of organization was most appropriate to each system of production."61


58 P. R. Lawrence, "Technical Inputs," Systems Analysis in Organizational Behavior, J. Seiler (Ed.)
Similar hypotheses and results have been obtained by other researchers on organizational structure. Much of the above research concentrated on the organization in a total context, examining the organization's relation to its external environment and certain large sub-systems within the organization. The purpose was to demonstrate that general propositions from the classical or bureaucratic model were not applicable in all situations. Most recent research has been undertaken to determine how contingency theory applies to smaller sub-systems within organizations. The rationale for a more definitive approach is that if whole organizations can be classified according to the type of technology used and there exists differences in their levels of success, then the relative "success" of a work-unit within an organization should conform to the established pattern.


59 Ibid.
60 Ibid.

The flow from a macro to a micro approach in research is appealing since most organizations attain broad-based objectives such as return on investment and profit by a means-end chain of sub-objectives. The production of a good or service is linked together in a series of steps which sum to define the total output. Therefore, the "success" of an organization in reaching its stated objectives depends to a large degree on the "success" of the sub-units within its contextual boundaries. One of the important elements in determining successful performance of a work-unit is the relationship between the supervisor and his subordinates. More specifically, this relationship is at least partly determined by the style of discipline used by the supervisor. Contrary to classical or bureaucratic models which call for a consistent, stated, and impersonal style of discipline, contingency theory would have no prescription until the variables in the situation were specified. One of those variables is the technological process used by the work-unit in the transformation process from inputs to specified outputs.

Leavitt described technology as "direct problem-solving inventions" but other writers have expanded that

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definition to include "knowledge of how to do something." Pursuing the macro to micro reasoning, other writers have attempted to classify types of technology, usually concentrating on the transformation process between inputs and outputs. Some of the major classification schemes are:

Joan Woodward:
1. Unit or small batch
2. Large batch or mass production
3. Continuous process

Charles Perrow:
1. Routine
2. Engineering
3. Craft
4. Non-routine

Tom Burns and G. M. Stalker:
1. Mechanistic
2. Organic

Kast and Rosenweig:
1. Craft
2. Machine tending
3. Mass production/assembly line
4. Continuous process
5. Advanced

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65 J. Woodward, op. cit.
Obviously, there are as many classification schemes as there are writers. However, some commonalities are evident if the definition of the classifications are examined. Although most use some variant of Woodward's classification, two of the above deviate to a substantial degree—Burns/Stalker

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and Van de Ven/Delbecq. The distinction between mechanistic and organic organizations by Burns and Stalker is a powerful discriminator as evidenced by the amount of research generated by their work. The problem with this typology is that it is basically a macro approach which is inappropriate for use in the present study.

The scheme proposed by Van de Ven and Delbecq presents the best discriminator among work-units for use here. It was developed as a micro approach and has demonstrated validity in discriminating among work-units using different modes of technology. The specific method of measuring these classes of technology will be discussed later, but the following are the different classifications matched with operationalizing descriptions:

System Mode:

1. links a series of productive components "men and machines" into an interdependent processing system with a systematized program
2. usually capital-intensive
3. attainment of a unitary, non-variable goal at high volume capacity
4. dominant rationality is efficiency and economies of scale due to centrality of capital-intensive hardware (machinery) or software (program packages)

Service Mode:

1. labor-intensive for organizing work activities of personnel with a "discretionary program"
2. limited volume of output
3. personnel trained in a repertoire of work programs
4. output a function of skill and capacity of individuals
5. unit members are basically independent actors; output of one member does not effect the output of others
6. close proximity of work-unit members in a centralized location is not a factor in productivity
7. output is a summation of the independent work-unit members

Group Mode:

1. task so highly variable that each case encountered is novel and unique
2. state of knowledge required to do the task is not contained within one individual
3. tasks usually are temporary and center on the solution to specific problems
4. high interdependency between individual work-unit members
5. output is a team product

The above classifications will be used to discriminate between work-unit technologies. The assignment of a work-unit to a specific mode is a function of an additive index including two constructs—task analyzability and task variability. After the classification process is completed comparisons will be made between work-unit technologies on the differences in philosophies of discipline held by supervisors. The primary and collateral hypotheses concerning
discipline and work-unit technologies are as follows:

\[ H_2: \text{there is no significant difference between philosophies of discipline held by supervisors in the three work-unit modes of technology.} \]

\[ H_{2A}: \text{there is a significant difference between philosophies of discipline held by supervisors in the three work-unit modes of technology.} \]

Assuming that \( H_2 \) which is stated in the null form is rejected and hypothesis are \( H_{2A} \) stated in the alternate form can be accepted other sub-hypotheses can be formulated. These hypotheses refer specifically to the comparison of disciplinary philosophies between the three classifications of work-unit technology. These hypotheses are as follows:

\[ H_{2A}(1): \text{the disciplinary philosophy in the system mode will be significantly more legalistic than the disciplinary philosophy of the service mode and the group mode.} \]

\[ H_{2A}(2): \text{the disciplinary philosophy of the service mode will be significantly more legalistic than the group mode but more humanitarian than the system mode.} \]

The above hypotheses refer to the relationship of the work-unit technology to the dependent variable, disciplinary philosophy. Also included are the relationships that exist within the classifications of the work-unit technology. Thus, one broad major variable—organizational structure—can be empirically tested to determine its effect on the application of discipline in the industrial setting.

As stated previously, the research on discipline has mainly been focused on its use as an independent
variable. Very little research has been generated to seek the variables which may explain differences among practitioners in applying discipline. Since any deviation from published rules and penalties denotes something beyond the bureaucratic structure, the person applying those rules should be the logical focus of an inquiry. It has been amply demonstrated that an employee's attitudes will influence the employee's behavior. Values, which are "an enduring belief that a specific mode of conduct or end state of existence is personally and socially preferable to alternative modes of conduct or end states of existence," have also been related to specific behavioral actions. Value systems, which are a hierarchial arrangement or rank-ordering of values, have been related to behavioral consequences. Probably the genesis of the current emphasis on human values could be found in the work of Milton Rokeach. This well-known investigator has contributed greatly to both the measurement of human values and the possible behavioral consequences of those values.

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Andrew F. Sikula has used different measuring devices to ascertain the values and value systems of two distinct groups of managers—governmental executives and personnel managers. One interesting finding by Sikula was that there was no significant difference between the values and value systems of governmental executives when compared to managers in the private sector. Richard D. Peterson and D. A. Ondrack described the values of people in different settings—the former a cross-cultural prospective and the latter occupational values. The preceding five studies cited are basically descriptive in nature in that few relationships between values and behavior were noted.

Some of the studies which deal with the behavioral implications of value systems include Guth and Tagiuri, Tagiuri, MacMurray, White and Ruh, Hage and Dewar, and England.

Most of the above research has been accomplished using the typology of value systems proposed by either England or Rokeach. Following the macro to micro rationale presented in the previous section this study will attempt to relate specific values to the choice of a disciplinary philosophy by supervisors. Since the present study emphasizes business organizations, the scale of values used should reflect the sample to which it is applied. The following list of values and the typology it represents is from a standardized test which has been validated in the business environment and seems to be more easily understood on an intuitive basis. The supervisory values to be ascertained are:

1. Theoretical--an individual who is interested in ordering and systematizing knowledge, likes to reason and think and is rational and analytical.

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2. Power—an individual who is interested in the utilization or implication and manifestations of power.

3. Achievement—managers who are efficient, practical, and concerned with obtaining results.

4. Human—an individual who views man and his relationships in a humanitarian manner.

5. Industry—an individual who likes the idea of work and sees it as an end in itself.

6. Financial—an individual who indicates an interest in the power of money and in reward for effort and personal gain. 87

The above scales have been shown to be powerful discriminators on several dimensions. Considering the research results that have indicated the impact values and value systems have on observed behavior, the following set of hypotheses concerning values and disciplinary philosophy can be postulated:

\[ H_3: \] there is no significant difference between disciplinary philosophies held by supervisors according to their personal values.

\[ H_{3A}: \] there is a significant relationship between disciplinary philosophies held by supervisors and their personal values.

Assuming the rejection of the null hypothesis and acceptance of the alternate hypothesis there should be

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87 W. J. Reddin, Managerial Values Inventory, (Organizational Tests, Ltd., Fredericton, New Brunswick, Canada, 1974).
differences of disciplinary philosophy according to the personal values of the supervisors. For example, an individual whose score was high on human values would have a more humanitarian philosophy of discipline than someone who scores high on the financial value scale. Therefore, the following hypothesis is stated for investigatory purposes:

\[ H_4: \text{more legalistic progressing to more humanitarian philosophies of discipline will be exhibited by supervisors who scored the highest on the value scales and in the following order:} \]

1. theoretical
2. financial
3. industry
4. power
5. achievement
6. human

Hypothesis 3 and 4 with their sub-hypotheses form the basis for investigating the relationship between values and the dependent variable, disciplinary philosophy. Within value and value system comparisons are also postulated. Since values are considered to be foundations of behavior, this side of the investigation should yield significant improvement in our knowledge concerning the impact individual supervisory behavior has on the application of discipline.

The two broad dimensions of the study thus far discussed have been the structural and behavioral elements. The structural element is operationally defined in relationship to the task-technology used by the work-unit. The
behavioral dimension is operationally defined as the values and value systems of supervisors who are the direct link between company policy and disciplinary action. Several hypotheses have been generated concerning the internal mechanisms of these two broad variables. However, it remains to consider these two broad variables in relationship to each other and in their relationship to the dependent variable disciplinary philosophy. As discussed previously, the research dealing with discipline in the industrial setting is inadequate to convey the highly subjective nature of discipline to practitioners. Most companies continue to design disciplinary systems as if there were a theoretical ideal toward which to strive. Neglected in their prescriptions are instances where a great variety of disciplinary action have resulted from consideration of the same set of circumstances. Much research in related fields gives an indication that a contingency relationship could possibly exist between some of the variables surrounding disciplinary action. An example would be Fiedler's landmark research on effective leadership styles. Fiedler

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postulated three dimensions which structure the leader's role. These are:

1. Leader-member relations—the extent to which the leader enjoys the confidence and loyalty of his men and is regarded as personally attractive by them.

2. Task-structure—the extent to which the task represents an order "from above."

3. Position-power—the extent to which power is inherent in the position of the leader and includes the rewards and punishments which are traditionally at his disposal, his official authority, and the organizational support on which he can depend.

The results of this study yield a basis for predicting that disciplinary actions will also be a function of certain variables in the situation. Two of those variables which, incidently are similar to dimensions one and two on the Fiedler scale, are hypothesized to have an effect on how personalized supervisors apply discipline. Holding the position power constant (first-line supervisors only are to be included in the sample) an attempt to determine which variable has more explanatory power—task-structure or personal values—will be investigated. The following hypotheses are proposed:

H$_5$: there is no significant relationship between the application of discipline and task-structure or personal values.
H5(А): there is a significant relationship between application of discipline and task-structure combined with personal values.

The above hypotheses point to a basic question. Which of two variables explains the most variance in the disciplinary philosophies exhibited by supervisors? Rather than being unidimensional the relationship between disciplinary philosophy in the industrial setting and other variables which occur within that setting could exhibit aspects of multidimensionality. Therefore the above hypotheses will test the possibility that an interaction between task-structure and personal values may exist in explaining the variance in disciplinary action.

Scope and Limitations of the Study

As the research design will indicate, this paper intends to examine the effect two variables have on the choice of a disciplinary style by first-line supervisors. These two variables are work-unit technology and supervisory values. The first variable is structurally based; it relates to an important consideration in organizational design. Although technology processes are broad in context a micro approach is used here since the focus of study is the work-unit and the respective first-line supervisors.

The second variable, supervisory values, brings a behavioral dimension to the study. While it is believed by the writer that other behavioral variables may relate to the choice of a disciplinary style, the value system of a
supervisor could be the originating force behind his observable behavior. Thus, the value system was chosen as the main behavioral variable for inclusion in this investigation.

To research one area of an organization is to slight other areas. The present study would have several limitations. One limitation is the sample itself. Because they are comprised of responses from first-line supervisors only, the data generated could lead to erroneous assumptions relative to the autonomy in deciding disciplinary actions, if in fact directives from higher level managers were unmeasured constraints. This limitation is reduced somewhat by the research design itself as it relates supervisory values to supervisor disciplinary styles.

A second limitation is the geographic area from which data can be collected. Supervisors in organizations located in the Midwest may or may not be typical of all first-line supervisors. Since values are an integral part of this study and may be subject to geographical differences, conclusions reached would be applicable only to businesses within this region.

Time is always a factor in limiting an investigation. The constraints on the investigator's time must always be considered. However, the time frame of reference should also be carefully noted. Although some evidence exists that values and value systems do not change
significantly over time, this evidence may be an artifact of the environment in which it was obtained. There are certain indications that values have been changing in American society. Therefore, any attempt to transfer the results of this study concerning values to other time periods should be approached with caution.

Summary and Hypotheses

To summarize the critical elements of the present study, a recap of the hypotheses to be tested is presented in tabular form. These hypotheses originated from the examination of the relevant literature dealing with discipline. A brief historical sketch from the classical to the modern approach was presented. Although many authors and studies were cited, the lack of empirical research on the differences in disciplinary action, contrary to prescriptive statements by modern writers, would seem to justify the undertaking of an investigation which explores the structural and behavioral dimensions surrounding the situation in which discipline is applied. The following hypotheses were generated from the examination of the relevant literature:

H1: the distribution of scores on disciplinary action will be a normal one. The mean of the distribution will occur approximately half way between the two extreme positions on the questionnaire—ignoring the infraction and discharging the employee.
$H_2$: there is no significant difference between philosophies of discipline held by supervisors in the three work-unit modes of technology.

$H_{2A}$: there is a significant difference between philosophies of discipline held by supervisors in the three work-unit modes of technology.

$H_{2A}(1)$: the disciplinary philosophy in the system mode will be significantly more legalistic than the disciplinary philosophy of the service mode and the group mode.

$H_{2A}(2)$: the disciplinary philosophy of the service mode will be significantly more legalistic than the group mode but more humanitarian than the system mode.

$H_3$: there is no significant difference between disciplinary philosophies held by supervisors according to their personal values.

$H_{3A}$: there is a significant relationship between disciplinary philosophies held by supervisors and their personal values.

$H_4$: more legalistic progressing to more humanitarian philosophies of discipline will be exhibited by supervisors who scored the highest on the value scales and in the following order:

1. theoretical
2. financial
3. industry
4. power
5. achievement
6. human

$H_5$: there is no significant relationship between the application of discipline and task-structure or personal values.

$H_{5A}$: there is a significant relationship between application of discipline and task structure combined with personal values.
CHAPTER II

METHODOLOGY

The rationale for the present study was developed in the previous chapter. Essentially the study seeks to determine the distribution of disciplinary action of first-line supervisors within varied organizational settings. Further analysis will comprise a more definitive look at the characteristics of the job situation and the personal values of the first-line supervisors to determine the effect these two broad variables have on the application of discipline.

Discipline practices by first-line supervisors were measured by the case method in which supervisors were asked to respond to certain disciplinary situations. As such discipline was used as the dependent variable in this study. Two broad variables were used as independent variables. The first variable—technology of the operating unit (the method of transforming input into output)—was measured by the summation of two components of technology. The measure—task analyzability referred to the extent to which the supervisor was placed in a job situation with varying degrees of organizationally prescribed actions which can be understood and predicted by the supervisor. The second measure, task variability, on the other hand, referred to the extent to which a supervisor faced on a day-to-day basis work-related stimuli which could not be predicted. The other independent variable used in this study was the personal
value system of the supervisor. The personal value system is comprised of six value scales measured by a commercially available measurement instrument.

With this overview in mind, this chapter will discuss the methodology used in the present study. Biographical and organizational characteristics of the sample will be presented. A discussion of the instruments used to measure the dependent and independent variables will be examined. Finally, the procedure used in gathering the data will complete the methodology section.

A. Sample Design

The sample used was from the population of first-line supervisors employed in three work-unit technologies—systematized mode, service mode, and group mode. Four areas of measurement were obtained from these supervisors. First, biographical data elements were collected to determine if extreme deviations from the normal population were present. Second, the type of work-unit technology was obtained by the use of an instrument comprised of fourteen Likert-type scales. Third, the value system of the supervisor was obtained by the Values Inventory questionnaire. Finally, decisions by first-line supervisors on the disciplinary action they felt appropriate to a given situation was obtained by the use of a case-oriented instrument.

The sample size necessary to achieve a reliable confidence interval for estimating the population mean of
disciplinary styles for all first-line supervisors were determined by the standard formula using deviation from the mean. An estimate of the standard deviation was obtained from a previous style which was conducted using the same discipline instrument with 166 supervisors. The standard deviation obtained in that study of 2.33 scale points was taken as closely approximating the population standard deviation of disciplinary action for first-line supervisors. Also, a 95 percent level of confidence was chosen for testing all hypotheses since this commonly accepted level would present a true test for the analysis of variables related to discipline. Finally, the amount of allowable error in the estimate of the population mean was selected as .5 scale points. This represented a plus or minus 3 percent error within the 16 point scale used in the previous study. Also, it was assumed that a one-half scale point would make very little difference in the classification of scheme since each disciplinary style category contained from 2 to 4 scaled points. Further, since the present study attempted to deemphasize classification schemes of disciplinary philosophy and instead related disciplinary action of supervisors on an interval type scale, the .5 scale points allowable error was considered to be extremely tight for behavioral research.

1D. H. Hovey, loc. cit.
Since the distribution of sample scores obtained previously\(^2\) was approximately normal, the sample size needed for the present study was calculated using the following formula:\(^3\)

\[
n = \frac{Z^2 x s^2}{E^2}
\]

where: 
- \(n\) = sample size
- \(Z\) = standard deviates  
  (95\% = 1.96)
- \(s\) = standard deviation of the sample
- \(E\) = amount of allowable error (\(\bar{X} - \mu\))

\[
83 = \frac{1.96^2 x 2.33^2}{.5^2}
\]

Using this formula, a sample size of 83 supervisors was obtained as a minimum number which would yield the necessary precision for estimating the population parameter of disciplinary actions.

Certain biographical data elements were asked of the first-line supervisors used as subjects in the present study. These elements appear in Table I which shows the breakdown of biographical data obtained from the 92 subjects. These supervisors were obtained from organizations in the Terre Haute, Indiana area. Also, some subjects were from Indianapolis, Indiana, a city approximately 70 miles from the primary geographic region used in the sample design.

\(^2\)Ibid.

Since the area of primary focus in the proposed study was on the work-unit within the companies, a close adherence to SIC industry codes was not necessary. However, some industries were judged by the writer as more likely to include some work-unit modes rather than others. Primary modes together with their representative industries within the geographic region are as follows:

Systematized Mode—heavy farm equipment, glass manufacturers, container manufacturers, consumer chemical products, industrial supplies manufacturer.

Service Mode—banks, computer centers, insurance companies, government agencies, educational institutions, record clubs.

Group Mode—firefighters, emergency facilities, hospitals, research and development groups in industry, project organizations, television stations, and advertising agencies.

An attempt was made to equalize the number of supervisors sampled from each mode. Thus, the number of supervisors in each classification was approximately 30. As a result of the Central Limit Theorem, this number makes further statistical investigation into individual cells possible with less restricting assumptions than would otherwise be the case with small samples from each of the different modes.

The total sample consisted of 92 first-line supervisors obtained from organizations in a midwestern state. One hundred and twenty-one (121) questionnaires were distributed to ten organizations within the geographic region mentioned. Ninety-six (96) were returned to the writer;
92 usable and 4 were unusable. Of the ten organizations to which questionnaires were delivered, responses were obtained from nine organizations. Only one organization failed to return any of the questionnaires. With 92 usable responses out of 121 questionnaires distributed, the response rate for this study was 76 percent. Such a high response rate precluded the necessity for follow-up action to ascertain if there are differences between respondents and non-respondents.

Examination of Table I reveals biographical data elements which characterize the total sample obtained in this study. The distribution between male and female first-line supervisors was heavily weighted toward the male side. There were 72 male supervisors compared to only 20 female supervisors. Such a wide disparity was not unexpected due to the type of organizations included in the sample, the distribution of female supervisors in the total population, and the particular characteristics of organizations in the midwest. Thus, there is no reason to conclude that estimators of the population parameters included in this study would be adversely affected. Rather, this sex distribution would yield estimators closely approximating parameters that would be obtained if there were a complete numeration of the total population.

Reflecting the stable and well-established organizational characteristics of the sample, the age characteristics include a mean of 39.25 years and a range of 22 to 64 years of age. A value of 0.36 was obtained for the
Table I
BIOGRAPHICAL DATA ELEMENTS
FOR TOTAL SAMPLE
(n=92)

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex Distribution</td>
<td>72</td>
<td>20</td>
</tr>
<tr>
<td>Age Characteristics</td>
<td>Mean 39.25</td>
<td>Range 22-64</td>
</tr>
<tr>
<td>Education (Yrs.)</td>
<td>Mean 15.12</td>
<td>Range 12-19</td>
</tr>
<tr>
<td>Major</td>
<td>Business 37</td>
<td>Non-Business 55</td>
</tr>
<tr>
<td>Experience in Present Position (Yrs.)</td>
<td>Mean 9.30</td>
<td>Range .75-31</td>
</tr>
<tr>
<td>Total Work Experience (Yrs.)</td>
<td>Mean 17.13</td>
<td>Range 1.5-45</td>
</tr>
<tr>
<td>Number Supervised</td>
<td>Mean 11.64</td>
<td>Range 2-85</td>
</tr>
</tbody>
</table>
third moment around the mean (skewness), which denotes that values for the age characteristic were clustered more toward the lower end of the distribution than toward the higher end. The sample mean of approximately 40 years of age is within the range of normal expectations for the population. Although somewhat higher than expected, the skewness of the distribution toward the lower end reflects the restricting of the sample to first-line supervisors in the sampled organizations.

The educational characteristics of the sample were obtained by asking the first-line supervisor to indicate how many years of formal education he had completed. A coding system was established which roughly corresponds to the years of formal education with 12 representing a high-school degree and 16 years as representing a college degree. The mean years of education for supervisors in the sample was a little over 15 years. The range was from 12 to 19 years. These two figures represent a higher than average educational level unless the characteristics of the sample are considered. The sample included a range of supervisors from manufacturing units to first-line supervisors in a university setting with the latter being comprised mainly of department chairmen who possessed the Ph.D. degree. The standard deviation for the educational characteristic was 2.08 years and the skewness coefficient was 0.14. These two statistics indicate that the educational characteristic was almost normally distributed between the 12 and 19 year
range figures. Another statistic which reflects the normal distribution is the mode which calculated to be 16 years. Therefore, the education characteristics of the total sample were considered to be representative of the total population parameter. Another educational characteristic of the sample was the split between business and non-business training and development. Surprisingly there were 37 out of 92 respondents who indicated that they possessed a business related educational background. This seems to be a higher proportion of business degrees than were expected. Since in the previous study by the writer the type of degree approached significance in correlating with disciplinary philosophy, some small amount of bias may appear in the present study. However, this high proportion of business degrees is not that unusual considering that most of the organizations included in the sample were profit-oriented private enterprises and recruited from universities.

Two other biographical data elements which are presented in Table I include the experience the supervisors have in their present positions and their total work experience. A mean of 9.3 years experience in their present positions was reported for the first-line supervisors included in the sample. The range was .75 to 31 years. These two figures seem unusually high but again reflect a stable and established nature of the organizations included in the sample. Correspondingly the total work experience of the supervisors indicated a mean of 17.13 years and a
range of 1.5 to 45 years. Taken together, the responses on these two variables indicate a wide diversity of experience possessed by the 92 subjects.

One of the most interesting biographical data elements reported for the total sample was the number of employees supervised by the subjects. The mean was calculated as 11.64 persons; however, the range included a minimum of 2 to a maximum of 85. The skewness coefficient of 2.865 indicates a distribution of scores which cluster toward the lower end of the continuum. The subject cluster occurs with supervisors reporting three, four, five, and six employees supervised. This conforms to the expectations which follow from generally accepted spans of management in organizations. Also the wide range of spans reflects the wide diversity of organizations included in the sample—from manufacturing to purely service industries.

In summary, the biographical data elements of the total sample are within the expected range of responses. Considering the wide diversity of organizations and first-line supervisors in those organizations, the sex, age, education, work experience, and span of management descriptive statistics are not unusually distributed. The absence of extreme deviations from expected central tendencies lends intuitive support to the acceptance of sample estimators closely matching the appropriate population parameter.
The biographical data elements which correspond to the three types of conversion technologies appear in Tables II, III, and IV. Breaking the total group of 92 subjects into the three technology modes follows from one of the stated objectives of the study. The 92 subjects are evenly distributed across the three technology modes. The systematized mode is comprised of 30 subjects obtained from three organizations which fit the description contained in Chapter I. The service mode is also comprised of three organizations which yielded 31 respondents. The group mode contains 31 as a sub-grouping and represented supervisors from three organizations which fit the characteristics cited previously.

There are some distinguishing characteristics which exist between the modes of technology within the total sample. For example, there are more male supervisors in the systematized and service modes than there are in the group mode. The relative proportions were expected due to the past sex bias patterns of supervisory selection except for the low number of female supervisors in the service mode grouping. The mean age for each of the modes is in the expected direction with the younger supervisors occurring in the group mode. Somewhat surprising was the almost identical mean age of the systematized and service mode supervisors. The mean years of formal education for each of the modes is presented in the tables. Again, the means are in the projected directions with the group mode having the highest mean years of formal education. In comparing between business and non-business training, the figures approximate
<table>
<thead>
<tr>
<th>Table II</th>
</tr>
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<tbody>
<tr>
<td>BIOGRAPHICAL DATA ELEMENTS</td>
</tr>
<tr>
<td>FOR THE SYSTEMATIZED MODE</td>
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<tr>
<td>(n=30)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Sex Distribution</th>
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<th>Female 1</th>
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<tbody>
<tr>
<td>Age Characteristics</td>
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<tr>
<td>Education (Yrs.)</td>
<td>Mean 14.30</td>
<td>Range 12-18</td>
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<tr>
<td>Major</td>
<td>Business 15</td>
<td>Non-Business 15</td>
</tr>
<tr>
<td>Experience in Present</td>
<td>Mean 11.075</td>
<td>Range .75-30</td>
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<tr>
<td>Position (Yrs.)</td>
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<td></td>
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<tr>
<td>Total Work: Experience</td>
<td>Mean 19.667</td>
<td>Range 1.5-42</td>
</tr>
<tr>
<td>(Yrs.)</td>
<td></td>
<td></td>
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<td>Mean 18.93</td>
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Table III

BIOGRAPHICAL DATA ELEMENTS
FOR THE SERVICE MODE

(n=31)

<table>
<thead>
<tr>
<th>Category</th>
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<td>Range 27-64</td>
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<td>Education (Yrs.)</td>
<td>Mean 14.95</td>
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<td>Major</td>
<td>Business 15</td>
<td>Non-Business 16</td>
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<tr>
<td>Experience in Present Position (Yrs.)</td>
<td>Mean 9.79</td>
<td>Range 1-31</td>
<td></td>
</tr>
<tr>
<td>Total Work Experience (Yrs.)</td>
<td>Mean 19.17</td>
<td>Range 2-45</td>
<td></td>
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<td>Number Supervised</td>
<td>Mean 10</td>
<td>Range 2-20</td>
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Table IV

BIOGRAPHICAL DATA ELEMENTS
FOR THE GROUP MODE
(n=31)

<table>
<thead>
<tr>
<th>Sex Distribution</th>
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<td>16</td>
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<table>
<thead>
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<th>Age Characteristics</th>
<th>Mean</th>
<th>Range</th>
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<table>
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<th>Education (Yrs.)</th>
<th>Mean</th>
<th>Range</th>
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<td>12-19</td>
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</table>

<table>
<thead>
<tr>
<th>Major</th>
<th>Business</th>
<th>Non-Business</th>
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<td>24</td>
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</table>

<table>
<thead>
<tr>
<th>Experience in Present Position (Yrs.)</th>
<th>Mean</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.09</td>
<td>2-17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Work Experience (Yrs.)</th>
<th>Mean</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.62</td>
<td>3-36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number Supervised</th>
<th>Mean</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6.22</td>
<td>2-26</td>
</tr>
</tbody>
</table>
the distribution across the three modes. An almost equal split occurs in the systematized and service modes and a large proportion of non-business majors occur in the group mode.

Three of the biographical data elements which refer more to the job situation are the experience in the present job, the total work experience, and the number of employees supervised. All of the means for each of these variables are in the predicted direction for the three technology modes. Supervisors in the systematized mode exhibited more years experience in their present job than did the service mode which in turn was more than the group mode. Correspondingly, the mean total years of work experience followed the above pattern with the group mode supervisors reporting less total work experience than the service mode or systematized mode supervisors. Supporting other research results, the number of employees supervised within each of the technology modes was in the predicted direction. The mean number supervised for the service mode was ten employees and the mean number for the group mode was approximately six employees. This direction of means for the number of employees supervised follows from some of the research studies cited in the previous chapter--more systematized production technologies allow a larger span of management for the first-line supervisor.
B. Instruments Used in Data Collection

Although a complete example of the questionnaire used in the present study is not included in the Appendix, the major portions of the questionnaire are presented for discussion in this section. The description of the questionnaire and the means by which it was developed will be discussed according to the order in which the subjects received the questionnaire. The first two parts are a cover letter and biographical data sheet. The next section is the questionnaire on discipline, followed by the scales used to measure work technology.

A cover letter was attached to the top of the questionnaire and was typed on Indiana State University letterhead. It was printed and then personally signed by the writer. The major portions of the cover letter included an opening statement presenting the reason why these questions are being asked, a description of the questionnaire itself, and instructions on how to complete the questionnaire. The participant was assured that while the company had approved this research, his responses would be held in strict confidence and not available to his organization or immediate supervisor except in an aggregate form. This procedure was followed to enhance the validity of the self-report measures.

The second part of the questionnaire was a biographical data sheet. The respondent's age, sex, education, and
working experience were among several biographical data elements which were asked. These responses were used to assess whether or not the sample obtained approximated the characteristics of the total first-line supervisor population.

The next three pages of the questionnaire measured the subject's response on the dependent variable used in this study--style of discipline. This part of the questionnaire contained instructions, a stated rule in regard to a particular offense, a short case, and a series of alternative actions which could be applied by the supervisor. There are four cases which relate to different aspects of discipline. The first case involves the unauthorized possession of company property and carries a penalty of immediate discharge. The second case involves sleeping or reading during company time. The penalty for violating this rule is a three-day suspension. The third case involves excessive drinking of alcoholic beverages and provides for a five day suspension for the first offense. The final case involves horseplay or fighting, which could result in a three day suspension for the first offense. These cases were developed as part of the study cited previously in which 16 cases were presented to 166 supervisors. Both the cases and the accompanying penalties were checked for appropriateness of the penalty and applicability in the industrial setting. Further validation of the present instrument occurred in the pretest portion of the study and will be described in the procedure section.
Exhibit I

DISCIPLINARY STYLE QUESTIONNAIRE

Company or Organization ________________________________

INSTRUCTIONS: Please read the following cases and check the action you would take in each instance. Disregard your present company's policy as I wish to measure only individual responses. All responses are confidential and will not be available to anyone in your company.

"The unauthorized possession of company property is an offense which will result in the immediate discharge of the offending employee."

While taking inventory and matching the orders to repair invoices, it was found that Walker, one of the mechanics was ordering more parts than were needed to fix the cars that he was repairing. After talking with Walker, the supervisor learned that the mechanic was taking the parts and using them to fix cars at his house, thus picking up a little extra money.

What would you do as a supervisor?

_____ Ignore the infraction this time
_____ Informal oral warning
_____ Oral warning which goes on employee's record
_____ Written warning which goes on employee's record
_____ Suspension with pay for remainder of day
_____ Suspension without pay for remainder of day
_____ Suspension with pay for longer than one day
_____ Suspension without pay for longer than one day
_____ Discharge employee
Exhibit I (continued)

"Sleeping, reading, etc., during company time is expressly prohibited. An employee guilty of the above will be subject to a three (3) day suspension for the first offense."

Reed had a history of minor violations during his three years of employment with the firm although he was a hard worker and the violations never amounted to enough to result in a formal disciplinary action. One day as he was waiting to pick up a crew of men out working, Reed became drowsy and fell asleep in the truck. This caused the work crew to call a man from the plant to come and get them. Reed was discovered asleep about three miles from the work crew.

What would you do as supervisor?

_____ Ignore the infraction this time
_____ Informal oral warning
_____ Oral warning which goes on employee's record
_____ Written warning which goes on employee's record
_____ Suspension with pay for remainder of day
_____ Suspension without pay for remainder of day
_____ Suspension with pay for period specified in rule
_____ Discharge employee

"Any employee found by his supervisor to be unfit for the performance of his duties as a result of excessive drinking of alcoholic beverages will be suspended for five (5) days for the first offense."

Lyons, one of the workmen in the telephone repair department, was building a house with the help of his friends. Many times Lyons would provide beer and drinks after they had finished working on the house. The department supervisor noticed that since the house had been started, Lyons' work had suffered due to the excessive amount of drinking he was doing plus the added physical labor. The supervisor had jokingly referred to the problem one time because he knew Lyons was a good worker and was not accustomed to drinking so much. However, one day Lyons could not climb a high power pole safely because the night before he had stayed up too late drinking.
Exhibit I (continued)

What would you do as supervisor?

_____ Ignore the infraction this time

_____ Informal oral warning

_____ Oral warning which goes on employee's record

_____ Written warning which goes on employee's record

_____ Suspension with pay for remainder of day

_____ Suspension without pay for remainder of day

_____ Suspension with pay for period specified in rule

_____ Suspension without pay for period specified in rule

_____ Discharge employee

"Any employee guilty of disorderly conduct, including horseplay, fighting, etc., during working hours will be suspended for three (3) days for the first offense."

Davis and Williams, both machinists, worked in the same general area under one supervisor. Monday morning, about 10:30, Williams walked over to Davis and without saying a word, began hitting him. The supervisor learned in the interview that the two men had had a fight Saturday afternoon in a local bar. The fight had been broken up and seemingly forgotten, until Williams attacked David on Monday.

What would you do as supervisor about Williams?

_____ Ignore the infraction this time

_____ Informal oral warning

_____ Oral warning which goes on employee's record

_____ Written warning which goes on employee's record

_____ Suspension with pay for remainder of day

_____ Suspension without pay for remainder of day

_____ Suspension with pay for period specified in rule

_____ Suspension without pay for period specified in rule

_____ Discharge employee
Although the rule stated before the case carried an explicit penalty for infraction of that rule, data from the previous study indicated a range of actions which could be taken by the supervisor. Therefore, nine possible disciplinary actions were provided for the subject to consider. Regardless of the rule of an accompanying penalty the same nine possibilities were included for each of the four cases. The possibilities ranged from ignoring the infraction to discharging the employee. This was done to allow the supervisor to express his own individual preference.

Following the questionnaire on disciplinary style the respondent was asked to describe his job-related activities on two dimensions. Exhibits II and III depict the two components of work-unit technology. Both the questionnaire on task analyzability and the questionnaire on task variability contain a set of instructions the respondent is to follow in answering the questions asked, and seven Likert-type scales.

The questionnaire on task analyzability refers to the extent to which the process followed in the work unit is well documented and involves following clearly prescribed procedures. The questions asked on task analyzability refer mainly to the supervisor's job but include a strong relationship with the work-unit technology utilized by his subordinates. The range of possibilities are from zero percent to 90 percent. Scale items one, two, and six, were
Exhibit II

QUESTIONNAIRE ON TASK ANALYZABILITY

Company or Organization ____________________________________________

INSTRUCTIONS: Please place an X on the scales by each question according to the following guidelines:

0 = 0%, to no extent
3 = 30%, to little extent
5 = 50%, to some extent
7 = 70%, to a great extent
9 = 90%, to a very great extent

1. To what extent is there a clearly defined body of knowledge or subject matter which can guide you in doing your work. 0 3 5 7 9

2. To what extent is there an understandable sequence of steps that can be followed in doing your work? 0 3 5 7 9

3. During the course of your work, how often do you come across specific but difficult problems that you don't know how to solve, and you have to take some time to think them through by yourself or with others before you can take any action? 0 3 5 7 9

4. In general, how much actual "thinking" and/or discussion time do you usually spend trying to solve such specific problems? 0 3 5 7 9

5. If there is something that you don't know how to handle in your work, to what extent is it likely to be something that no one really knows much about? 0 3 5 7 9

6. In some jobs things are fairly predictable. In others, you are often not sure what the outcome will be. What percent of the time would you say that you are generally sure what the results of your efforts will be? 0 3 5 7 9

7. In terms of the major tasks you are assigned, to what extent does time pass before you know whether your work effort is successful? 0 3 5 7 9
reverse scored to make them consistent with the other instruments in the questionnaire. Therefore, a low score on any scale would indicate a job related technology which corresponds to a systematized mode. Generally speaking this would be a work-unit technology which has a clearly defined body of knowledge, an understandable sequence of steps, less time thinking or discussing, and outcomes which are fairly predictable and occur within a short time frame after completion. A high score on any one of the scales would indicate a work-unit technology which corresponds to the group mode. This transformation process from inputs to outputs would be accomplished without a clearly defined body of knowledge or an understandable sequence of steps supplied by the organization. Also, there would be more thinking or discussion time devoted to the performance of this job and the outcomes would not be generally known nor forthcoming until a relatively long period of time had passed since job completion. The task analyzability component was derived by summing the seven individual scales. Thus, the range of scores on task analyzability were from zero to 630.

The questionnaire on task variability asked the respondent to answer questions which refer to the extent he and his subordinates encounter a great deal of variability in performing the task assigned to them in their work unit. The same general pattern as for task analyzability is apparent in the questionnaire on task variability. Items two, three, four, and five are reverse scored to make them
Exhibit III

QUESTIONNAIRE OF TASK VARIABILITY

Company or Organization _______________________________________

INSTRUCTIONS: Please place an X on the scales by questions
1 - 7 according to the following guidelines:
0 = 0%, to no extent
3 = 30%, to little extent
5 = 50%, to some extent
7 = 70%, to a great extent
9 = 90%, to a very great extent

1. How much variety in cases, claims, or things do you generally encounter
   in your normal working day? 0 3 5 7 9

2. Regardless of the variety of cases, claims, or clients, to what extent
   are the activities or methods you follow in your work about the same
   for dealing with classes or categories of cases, claims or clients? 0 3 5 7 9

3. Would you describe your work as being routine? 0 3 5 7 9

4. Do people in this unit do about the same job in the same way most of the
   time? 0 3 5 7 9

5. To what extent do unit members perform repetitive activities in
   performing their jobs? 0 3 5 7 9

6. Generally, how much do unit members have to adopt different methods or
   procedures in performing their jobs from day to day? 0 3 5 7 9

7. Are there different types or kinds of work to do every day in this job? 0 3 5 7 9
consistent with the classification scheme of technology modes. In a similar fashion, a low score in task variability indicates a job related activity which corresponds to the systematized mode. A high score on any of the scales indicates a work-unit technology that corresponds more closely to the group mode. A score somewhere between the two extremes indicates work-unit technologies classified as service modes. The scores on each scale could range from zero to 90 and the summation of those scales could range from zero to 630.

An overall measure of the technology variable was obtained by adding the scores obtained on the task analyzability scales to scores on task variability scales. The summation, entitled Technology, follows the general pattern of the two component elements—a low score corresponds to a systematized mode, a high score corresponds to a group mode. The range of scores for the total technology variable was from zero to 1,260.

The above scales used in the present study were developed by Van de Ven and Delbecq\(^4\) to discriminate among work units within organizations. Since it was developed as a micro approach and used repeatedly by these authors in investigating work-unit technologies, substantial data has been collected concerning the reliability and validity of these two instruments. Split-half reliability figures are

\(^4\)Loc. cit.
reported by Van de Ven and Delbecq as being in the high .80's. Although no hard figures exist for validity coefficients, the face validity of the two instruments is extremely appealing. Also, the fact that the two authors have used these two instruments in a series of research studies concerning work-unit technologies lend support to the decision to utilize these instruments in the present study.

Perhaps the most time consuming portion of the questionnaire is the last section on individual values. It consists of 29 items of three statements each. The subject is to read the three statements per item and assign a total of three points to those three statements according to the extent to which he agrees with each. The extreme possibility exists that the subject would weight one particular statement three and the other two zero. The other extreme is evidenced by a subject weighting each statement as one. Other combinations exist between those two extremes. The Values Inventory is designed so the possibility exists for self-scoring as the respondents' weights are recorded automatically on a scoring sheet between the two pages of the questionnaire. As this questionnaire is a forced-choice technique, all scores total to 84. Thus, a respondent is

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5 Private communication.
forced to choose among competing values within the total value system and ensures a relative ranking among those values.

According to the Values Inventory manual, the sample of test subjects used in constructing this questionnaire was comprised of 648 supervisors and managers from a wide diversity of industries and organizations. A test-retest study was conducted with 107 first and second level managers. The correlations range from .62 to .76, a reasonable correlation for behavioral research. Scale intercorrelations reported in the manual are reasonably low. This suggests the measures of individual values are relatively independent. The validity data presented in the manual is based upon between group comparisons of managers with different characteristics. Almost all comparisons were reported as significantly different from other groupings. Some of the groups tested were supervisors and managers from personnel, production, finance-accounting, marketing, and engineering. The reasonably high reliability coefficient plus the business-oriented sample were the two main reasons why this instrument was chosen for use in the present study.

The scales corresponding to each of the six values appear in Exhibits IV through IX. As can be seen from the exhibits, each value is measured with 14 individual statements. These are intermixed in the Values Inventory to yield the necessary forced-choice comparisons.
Exhibit IV

Scale 1. Theoretical

A high score identifies an individual who is interested in ordering and systematizing knowledge, likes to reason and think, and is rational and analytical.

(1A) Examples and events of history press down upon the mind the weight of truth.

(5A) Truth is always strange - stranger than fiction.

(6A) The smallest atom of truth represents some man's bitter toil and agony.

(8A) All truths begin as blasphemies.

(9A) Disinterested intellectual curiosity is the life blood of real civilization.

(12A) The only means of strengthening one's intellect is to make up one's mind about nothing.

(14A) The highest intellects, like the tops of mountains, are the first to catch and reflect the dawn.

(16C) Irrationally held truths may be more harmful than reasoned errors.

(17C) To think is to live.

(20C) Knowledge is capable of being its own end.

(21C) Ill blows the wind that profits nobody.

(24C) A good catch word can obscure analysis for fifty years.

(25C) Make a model before building.

(26C) It requires a very unusual mind to undertake the analysis of the obvious.
Exhibit V

Scale 2. Power

A high score identifies an individual who is interested in the utilization, implications, and manifestations of power.

(1B) As wealth is power so all power will draw wealth to itself.

(2A) By what means can the man please who has no power to confer benefits?

(4A) Everything includes itself in power.

(7A) The father aims at power, the son at independence.

(10A) God gives to some men despotic power over other men.

(12B) To know the pains of power we must go to those who have it.

(13A) The prize of the general is not a bigger tent, but command.

(15C) Wherever I found a living creature, there I found the will to power.

(17B) To know the pleasure of power we must go to those who are seeking it.

(18C) Guns will make us power: butter will only make us fat.

(20B) The highest duty is to respect authority.

(23C) He that has the longest sword is the leader.

(26B) In the country of the blind, the one-eyed man is king.

(28C) Power is a grand objective.
Exhibit VI

Scale 3. Achievement

A high score identifies an individual who is efficient, practical and concerned with obtaining results.

(1C) Success is always achievement.

(2B) A manager's only job is to be effective.

(5B) It's not enough to do good. One must do it well.

(6B) We never do anything well till we cease to think about the manner of doing it.

(10B) He who attempts to do all will waste his life doing little.

(11A) A man of words and not of deeds is like a garden full of weeds.

(13B) The reasonable man adapts himself to the world; the unreasonable tries to adapt the world to himself.

(15B) Actions speak louder than words.

(16B) The shortest answer is doing.

(18B) The great end in life is not knowledge but action.

(19C) Life is not long, and too much of it must not pass in idle deliberation how it shall be spent.

(22C) Bustle is not industry.

(27C) Whatever is worth doing at all is worth doing well.

(25B) Every man is the architect of his own future.
Exhibit VII

Scale 4. Human

A high score identifies an individual who tends to view man and his relationships in a humanitarian manner.

(3A) The worst of faces is still human.

(4B) Life teaches us to be less severe with ourselves and others.

(7B) The only way to have a friend is to be one.

(8B) The ornament of a house is the friend who frequents it.

(10C) Instead of loving your enemies, treat your friends a little better.

(12C) If you have one true friend, you have more than your share.

(14B) A man should keep his friendship in constant repair.

(15A) Man is a social animal.

(16A) There are many wonderful things in nature, but the most wonderful of all is man.

(22B) The true science and study of mankind is man.

(23B) Human existence is always irrational and often painful, but in the last analysis it remains interesting.

(24B) To cultivate kindness is a valuable part of life.

(27B) It is more blessed to give than to receive.

(28B) To err is human, to forgive divine.
Exhibit VIII

Scale 5. Industry

A high score identifies an individual who likes to work and sees it an end in itself.

(3B) Never put off tomorrow what you can do today.

(5C) Work keeps at bay three great evils; boredom, vice, and need.

(6C) All work is noble; work is alone noble.

(9B) Labor conquers everything.

(11B) Man's happiness is to do a man's true work.

(13C) No man is born into the world whose work is not born with him.

(14C) Work brings its own relief; he who most idle has most of grief.

(17A) Every man's work is a portrait of himself.

(18A) Go to your work and be strong.

(19B) All work is as seed sown, it grows and spreads, and sows itself anew.

(20A) There is no substitute for hard work.

(21B) Genius is one per cent inspiration and ninety-nine per cent perspiration.

(27A) What we have to learn to do, we learn by doing.

(28A) Doubt can be ended by work alone.
Exhibit IX

Scale 6. Financial

A high score identifies an individual who is interested in the power of money and in reward for effort and personal gain.

(2C) What will money not do?
(3C) Money answerest all things.
(4C) It is pretty to see what money will do.
(7C) Money is indeed the most important thing in the world.
(8C) There are few sorrows, in which a good income is of no avail.
(9C) Money is like a sixth sense - and you can't make use of the other five without it.
(11C) If you mean to profit you are wise.
(19A) The mind of man is cheered and refreshed by profiting in small things.
(21A) Ill blows the wind that profits nobody.
(22A) Time is money.
(23A) In all labor there is profit.
(24A) Money speaks in a language all nations understand.
(25A) They say knowledge is power but they meant money.
(26A) It is a bad bargain where nobody gains.
C. Data Collection Procedure

Using the data collection instruments and the sampling design discussed previously, 92 subjects were obtained for the present study. This does not include 34 subjects obtained for a pretest of the instruments. In the following paragraph, the data collection procedure followed in the present study is discussed and corresponds closely to the chronological order in which the steps were performed.

Prior to the actual data collection from the total sample, a pretest of the instruments used in this study was performed within the same geographic and organizational framework. There were a total of 34 subjects used in the pretest. Sixteen of those subjects were graduate students in a strategy and policy course at Indiana State University. The other 18 subjects in the pretest were selected from organizations which the writer felt typified the three different types of work-unit technologies. For example, six supervisors from a manufacturing organization were asked to take the questionnaire and discuss their reactions with the writer. This company represented the systematic mode of work-unit technology. Another five supervisors were asked to respond to the questionnaire and represented the service mode. Seven supervisors from the emergency unit at a local hospital were selected as representing the group mode. The results of this pretest appear in Tables V, VI, VII, VIII, and IX. These results for the pretest sample were not included as part of the responses reported for the total sample.
Table V presents the results of the pretest sample on the discipline variable. The means reported for the separate infractions follow closely the predicted direction with two exceptions. The standard deviations within each type of infraction indicated a tight, but varying response to each infraction. The mean value of 26 scale points for the total of the four cases indicates a disciplinary philosophy in the pretest sample somewhat closer toward the legalistic end of the continuum. This conclusion is supported by the skewness value having a negative sign although the magnitude was not considered damaging.

Tables VI, VII, and VIII present the results for the pretest sample on the work-unit technology. Task analyzability and task variability seem to be approximately equal although the standard deviation for task analyzability indicates more variance within those seven scales. The results for the pretest sample on the Values Inventories are presented in Table VIII. The means for each of the values measured by the instrument follow the predicted direction suggested by the statistics reported in the user's manual. Power and Finance values are very low compared to the Achievement and Human values. Falling somewhere in between those two are the Theoretical and Industry values. Also expected was the substantial variability within the value scale responses. Although each of the value scales show a certain amount of skewness, only one--Finance--could be substantial enough to violate some statistical assumptions.
<table>
<thead>
<tr>
<th></th>
<th>Stealing</th>
<th>Sleeping</th>
<th>Drinking</th>
<th>Fighting</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>7.944</td>
<td>6.056</td>
<td>5.222</td>
<td>6.833</td>
<td>26.056</td>
</tr>
<tr>
<td>S. D.</td>
<td>2.182</td>
<td>1.984</td>
<td>2.130</td>
<td>1.855</td>
<td>4.412</td>
</tr>
<tr>
<td>Minimum</td>
<td>2.000</td>
<td>3.000</td>
<td>2.000</td>
<td>2.000</td>
<td>17.000</td>
</tr>
<tr>
<td>Maximum</td>
<td>9.000</td>
<td>8.000</td>
<td>8.000</td>
<td>8.000</td>
<td>33.000</td>
</tr>
<tr>
<td>Skewness</td>
<td>-1.798</td>
<td>-0.176</td>
<td>-0.075</td>
<td>-1.471</td>
<td>-0.448</td>
</tr>
<tr>
<td></td>
<td>ALZ1</td>
<td>ALZ2</td>
<td>ALZ3</td>
<td>ALZ4</td>
<td>ALZ5</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Mean</td>
<td>38.000</td>
<td>40.000</td>
<td>45.278</td>
<td>53.000</td>
<td>46.889</td>
</tr>
<tr>
<td>Minimum</td>
<td>10.000</td>
<td>10.000</td>
<td>28.000</td>
<td>30.000</td>
<td>10.000</td>
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<td>Maximum</td>
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<td>72.000</td>
<td>70.000</td>
<td>90.000</td>
<td>90.000</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.206</td>
<td>0.029</td>
<td>0.430</td>
<td>0.505</td>
<td>0.192</td>
</tr>
</tbody>
</table>
TABLE VII

RESULTS FOR PRETEST SAMPLE ON TASK VARIABILITY

(n=18)

<table>
<thead>
<tr>
<th></th>
<th>VAR1</th>
<th>VAR2</th>
<th>VAR3</th>
<th>VAR4</th>
<th>VAR5</th>
<th>VAR6</th>
<th>VAR7</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>56.667</td>
<td>50.444</td>
<td>44.833</td>
<td>33.556</td>
<td>30.667</td>
<td>46.111</td>
<td>50.778</td>
<td>313.055</td>
</tr>
<tr>
<td>Minimum</td>
<td>28.000</td>
<td>28.000</td>
<td>10.000</td>
<td>10.000</td>
<td>10.000</td>
<td>10.000</td>
<td>10.000</td>
<td>206.000</td>
</tr>
<tr>
<td>Maximum</td>
<td>90.000</td>
<td>90.000</td>
<td>72.000</td>
<td>70.000</td>
<td>50.000</td>
<td>72.000</td>
<td>90.000</td>
<td>450.000</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.018</td>
<td>0.503</td>
<td>-0.420</td>
<td>0.576</td>
<td>-0.207</td>
<td>-0.170</td>
<td>-0.130</td>
<td>0.147</td>
</tr>
</tbody>
</table>
TABLE VIII

RESULTS FOR PRETEST SAMPLE ON VALUES INVENTORY

(n=18)

<table>
<thead>
<tr>
<th></th>
<th>Theoretical</th>
<th>Power</th>
<th>Achievement</th>
<th>Human</th>
<th>Industry</th>
<th>Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>11.833</td>
<td>7.611</td>
<td>18.611</td>
<td>21.833</td>
<td>15.944</td>
<td>8.444</td>
</tr>
<tr>
<td>Minimum</td>
<td>3.000</td>
<td>2.000</td>
<td>11.000</td>
<td>16.000</td>
<td>9.000</td>
<td>5.000</td>
</tr>
<tr>
<td>Maximum</td>
<td>22.000</td>
<td>13.000</td>
<td>30.000</td>
<td>30.000</td>
<td>23.000</td>
<td>18.000</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.403</td>
<td>0.025</td>
<td>0.544</td>
<td>0.439</td>
<td>-0.361</td>
<td>1.436</td>
</tr>
</tbody>
</table>
To test the classification scheme on work-unit technology, the results of the pretest sample were compared relative to the directions of the means on discipline, analyzability, variability, and technology. The results appear in Table IX. Considering the very small sample within each of the technology modes, the results were surprisingly good. The total technology component yielded means for the three different modes in the predicted direction. For example, the mean for technology in the systematized mode was lower than the mean for the service mode which was lower than the group mode. Also, the means for the dependent variable, discipline, were in the predicted direction. The systematized mode had a value closer to the pure legalistic end of the dimension with the service mode more toward the humanitarian end and the group mode more toward the humanitarian end than the service mode. The means on task analyzability were the only major component which did not follow the predicted pattern. In the discussions with the pretest supervisors, two of the seven scales on the task analyzability questionnaire seemed to be giving them trouble. As a result of this information, scales 5 and 7 were reworded slightly to make them more understandable. Scale 6 on the task variability questionnaire was also slightly reworded to conform to suggestions made by the pretest subjects.

The 16 graduate students included in the pretest sample were used as a feedback mechanism. Although some students possessed significant business experience, it was
### TABLE IX

**RESULTS FOR PRETEST SAMPLE ON TECHNOLOGY CLASSIFICATION**

*(n=18)*

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Systematic Mode <em>(n=6)</em></th>
<th>Service Mode <em>(n=5)</em></th>
<th>Group Mode <em>(n=7)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>28.333</td>
<td>25.800</td>
<td>24.286</td>
</tr>
<tr>
<td><strong>S. D.</strong></td>
<td>3.983</td>
<td>2.387</td>
<td>5.407</td>
</tr>
<tr>
<td><strong>Analzability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>313.333</td>
<td>290.000</td>
<td>316.114</td>
</tr>
<tr>
<td><strong>S. D.</strong></td>
<td>111.250</td>
<td>43.635</td>
<td>90.234</td>
</tr>
<tr>
<td><strong>Variability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>274.000</td>
<td>319.000</td>
<td>342.286</td>
</tr>
<tr>
<td><strong>S. D.</strong></td>
<td>63.334</td>
<td>54.323</td>
<td>71.306</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>586.333</td>
<td>609.000</td>
<td>659.000</td>
</tr>
<tr>
<td><strong>S. D.</strong></td>
<td>166.091</td>
<td>71.007</td>
<td>131.865</td>
</tr>
</tbody>
</table>
decided that the responses should not be included in the statistical analysis. This decision was made on the basis of the wide disparity between the characteristics of the graduate students and the characteristics of first-line supervisors in the population. More education and less accountability for their actions were two major reasons why this decision was made. However, the comments and suggestions from the graduate students relative to the wording of some of the questions was considered in the changing of the previously mentioned scale items.

The second major step in the procedure involved selecting the companies to be surveyed. A listing was obtained from the local Chamber of Commerce. Using the list of mode characteristics the writer separated the companies into four groupings on the basis of personal knowledge relative to the companies' operations. One group was the companies which the writer thought would closely resemble the characteristics of the systematized mode. Another group corresponded to the service mode. The third group corresponded to the group mode. A fourth category was labeled unknown. From the companies within each of the first three categories, five were selected as possible participants.

The writer approached each of the organizations which were selected within the categories. Contact was made with a company officer, usually the personnel manager, and approval was obtained prior to the distribution of the questionnaires with the organization. Eleven companies were contacted and ten agreed to participate. The writer
then delivered the questionnaires to the company officer or supervisors. Thereafter, they were distributed either by the company officer or the writer. Those distributed by the company officer usually carried a cover letter from him explaining to the supervisor that this research was approved.

The final steps in the data collection procedure consisted of the process by which the completed questionnaires were returned to the writer. The questionnaires were designed so that the subject could complete each section without any help other than the instructions carried at the top of each section. The questionnaires were stapled together and given to the subject in a stamped, self-addressed envelope. He was instructed to seal the envelope and return the completed questionnaire directly to the writer. As the questionnaires were returned the responses were scored by the writer and coded according to the organizational affiliation of the supervisor. The coding allowed the writer to follow-up to companies desiring feedback on the results of the study.

In summary, the data was collected from 92 first-line supervisors representing nine organizations in a midwest state. The questionnaire consisted of five major sections, each self-contained with appropriate instructions for completion. Completion time varied from 30 minutes to an hour. A pretest was performed on 18 first-line supervisors in the relevant geographic and organizational setting plus 16 graduate students registered in a policy course at
Indiana State University. Companies were randomly selected within work-unit technology classifications and approval to participate in this study was obtained from a company officer. The questionnaires were delivered either by the company officer or the writer, completed by the first-line supervisor, and returned directly by postage-paid envelope to the writer. The scoring was done by the writer and coding was completed to allow follow-up to companies desiring the results of the study.
CHAPTER III

Results of the Study

The results of the present study are presented in this chapter. Both descriptive and inferential statistics are presented which relate to a particular hypothesis.

There are five main working hypotheses developed in Chapter I. Although an inductive approach was used in the development of these hypotheses, the statistical test necessitates a re-ordering of those hypotheses for presenting the results. Therefore, the descriptive statistics relative to determining the distribution of the disciplinary philosophies in the industrial setting are discussed first. The next major section encompasses the statistical test corresponding to the main purpose of this study—determining the extent to which work-unit technology and values affect the application of discipline. An overall test of the significance of these two variables is reported and followed by more definitive examinations of the two independent variables used in this study. The last section of this chapter examines the relationship between a supervisor's highest value score and his disciplinary philosophy. A summary of the results follows these three main sections.

A. Results for the Distribution of Philosophies of Discipline

The starting point for the present study was the relationship contained in hypothesis 1. It stated that the
distribution of scores on disciplinary action would be normally distributed and that the mean of the distribution would occur approximately halfway between the two extreme positions on the questionnaire. Table X describes the statistics obtained from the 92 supervisors who responded to the questionnaire. Although the midpoint for the total disciplinary score on the four cases is 20.5, the sample mean for the present study is 24.826. The mode and median are also around the 24 or 25 scale point. These statistics indicate that the mean on disciplinary action of the present sample is more closely related to the pure legalistic end of the continuum rather than the midpoint. This result is graphically presented in Figure 1. Further evidence indicating that the mean of disciplinary action is more legalistic comes from the statistics reported for the third and fourth moment around the mean. The skewness or third moment statistic is -0.464 where a value of zero indicates a perfectly symmetrical normal distribution. The negative value for the skewness statistic connotes a distribution which clusters to the right of the mean. The fourth moment around the mean or kurtosis for the sample distribution is a -0.228 which indicates a flatter distribution rather than a normal distribution.

The results reported in Table XI provides further support for a negatively skewed distribution of disciplinary philosophies. The means on disciplinary action by each of
TABLE X

RESULTS ON DISCIPLINE
FOR TOTAL SAMPLE

(n=92)

<table>
<thead>
<tr>
<th>STATISTIC</th>
<th>VALUE</th>
</tr>
</thead>
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<tr>
<td>Mean</td>
<td>24.826</td>
</tr>
<tr>
<td>Mode</td>
<td>24.000</td>
</tr>
<tr>
<td>Median</td>
<td>25.333</td>
</tr>
<tr>
<td>Minimum</td>
<td>10.000</td>
</tr>
<tr>
<td>Maximum</td>
<td>33.000</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>5.061</td>
</tr>
<tr>
<td>Variance</td>
<td>25.618</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-0.228</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.464</td>
</tr>
</tbody>
</table>
FIGURE 1
FREQUENCIES ON DISCIPLINE
FOR TOTAL SAMPLE
(n=92)
### TABLE XI

RESULTS ON DISCIPLINE BY ORGANIZATION

(n=92)

<table>
<thead>
<tr>
<th>Organization</th>
<th>n</th>
<th>Mean</th>
<th>S.D.</th>
<th>Skewness</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Manufacturer</td>
<td>11</td>
<td>28.636</td>
<td>2.618</td>
<td>0.330</td>
<td>24-33</td>
</tr>
<tr>
<td>Gasket Manufacturer</td>
<td>12</td>
<td>29.917</td>
<td>2.539</td>
<td>-1.040</td>
<td>24-33</td>
</tr>
<tr>
<td>Container Manufacturer</td>
<td>7</td>
<td>28.286</td>
<td>3.200</td>
<td>-0.136</td>
<td>23-33</td>
</tr>
<tr>
<td>Veterans Agency</td>
<td>16</td>
<td>24.938</td>
<td>2.839</td>
<td>-0.007</td>
<td>20-30</td>
</tr>
<tr>
<td>Independent Government Agency</td>
<td>4</td>
<td>25.000</td>
<td>3.266</td>
<td>0.000</td>
<td>21-29</td>
</tr>
<tr>
<td>National Bank</td>
<td>11</td>
<td>25.000</td>
<td>3.821</td>
<td>0.441</td>
<td>19-33</td>
</tr>
<tr>
<td>Regional Hospital</td>
<td>15</td>
<td>22.267</td>
<td>5.092</td>
<td>0.348</td>
<td>15-33</td>
</tr>
<tr>
<td>Computer Service</td>
<td>8</td>
<td>20.875</td>
<td>3.980</td>
<td>-0.425</td>
<td>14-26</td>
</tr>
<tr>
<td>State University</td>
<td>8</td>
<td>17.125</td>
<td>3.871</td>
<td>-0.523</td>
<td>10-22</td>
</tr>
</tbody>
</table>
the nine organizations included in the sample are approximately from most legalistic to most humanitarian. A major observation is that only one of the nine organizations has a mean on disciplinary philosophy which is toward the humanitarian end of the continuum from the expected midpoint of the distribution. Another striking result is that the ranges reported for these organizations did not include one supervisor who chose the most extreme humanitarian position.

To statistically test whether the reported sample mean differed from the expected mean, a t-test was calculated using 20.5 as the midpoint. The t value calculated was 8.16. Since the critical value for t with 91 degrees of freedom is 1.98, the hypothesis that the distribution would be normally distributed within the range of the questionnaire must be rejected. The distribution in the present sample is clustered more toward the legalistic end of the continuum than would be expected if the population were normally distributed.

To analyze the above results further a comparison was made between the results from the present study and the results from a previous study using a similar disciplinary action questionnaire. In the previous study the range of possibilities was 16 scale points and the obtained mean of 9.45 indicated a legalistic philosophy of discipline. In order to compare the results of the two studies the scale points of the previous study were adjusted to yield the same physical distance as the present study and the mean of
9.45 was reverse scored to correspond to the present study's methodology. This yielded a value of 29.10 scale points as the mean disciplinary philosophy which would be expected had the two scales been arithmetically identical. The calculated value of 29.10 indicates a legalistic philosophy of discipline which is 4.274 scale points different from the 24.826 reported mean for the present study. Since the previous study included only supervisors from the petro-chemical and insurance industries, this more legalistic philosophy is consistent with the exclusion of supervisors from a group mode work-unit technology in the previous study. Therefore, if the combined results of 258 supervisors from two different sections of the country and from varied organizational settings are distributed more toward the legalistic end of the scale, then the argument for a normally distributed population parameter concerning disciplinary actions is considerably at odds with the empirical results. Following this line of reasoning a confidence interval for the population parameter can be calculated using the statistics from the present study. With a mean of 24.826 and a standard error of the mean equal to .53 the 95 percent confidence interval for the population mean is from 23.786 to 25.866 scale points. Actually, this is a very tight interval for the population parameter as it encompasses only a little over one scale point within a range of 32 possible scale points.

The results for hypothesis 1 are both positive and negative. The distribution of scores of the sample was
found not to be normally distributed around the midpoint of the questionnaire scale. The positive aspect was that the results are extremely close to those found in a previous study, and the 95 percent confidence interval for the population mean was quite small.

B. Results on Discipline for The Main Independent Variables

Hypotheses 2, 3, and 5 will be examined in this section of the Results Chapter. This aggregation of hypotheses follow from the pattern of statistical tests necessary to determine the acceptance or rejection of a particular hypothesis. That is, an overall test will be made on the effect the two broad independent variables--work-unit technology and personal values--have on the dependent variable--disciplinary philosophy. Then a segregation of the component elements in the independent variables will allow a more definitive test of their relationship to disciplinary philosophy.

Tables XII through XVIII present the results for the overall test for significant effects of the independent variables on the dependent variables. The overall model to be tested is:

\[
\text{Discipline} = a + bx_1 + bx_2 + bx_3 + bx_4 + bx_5 + bx_6 + bx_7
\]

where:
- discipline = Total score on discipline questionnaire
- \( a \) = constant
- \( x_1 \) = task-unit technology
- \( x_2 \) = score on theory value
\[ x_3 = \text{score on power value} \]
\[ x_4 = \text{score on achievement value} \]
\[ x_5 = \text{score on human value} \]
\[ x_6 = \text{score on industry value} \]
\[ x_7 = \text{score on finance value} \]

This multi-variable model for explaining discipline will be tested using a step-wise multiple regression technique. The individual variables included in the equation follow from the instrument used in the present study. The score on discipline for an individual respondent was calculated by adding his score on the four cases together. The technology variable was derived by adding together the seven scales for task analyzability and the seven scales for task variability. The scores on the individual values are obtained from the scales comprising the Values Inventory. The presentation of the results follow a logical pattern from the most general to the more specific components of the variables. Working initially with the raw scores the correlation matrix and the results on the regression equation are presented. Then the correlation matrix and the step-wise regression results are shown for the standardized scores for all variables in the equation. The next series of tables narrow the equation to only those significant variables using both standardized and raw scores. Finally, the variance explained by the total equation and the coefficients corresponding to the remaining independent variables in the equation are presented in Table XVIII.
The overall test for the effect work-unit technology and supervisory personal values have on the application of discipline is contained in Tables XII and XIII. The correlation matrix for the relationship between the independent and dependent variables indicate varying degrees of relationship. By far the largest correlation with the dependent variable is the technology variable. The correlation of -0.465 indicates a strong negative relationship; as work-unit technology becomes increasingly less analyzable and more variable disciplinary action by supervisors tends more toward the humanitarian end of the continuum. Similar relationships exist for the theory, power, industry, and finance value structures of the supervisors. Two values, achievement and human, are positively correlated with the dependent variable. Such a relationship means that as achievement and human values become more important to the supervisor, he tends to practice a more legalistic philosophy of discipline. Conversely as theoretical, power, industry, and finance values become more important to the supervisor, he tends to practice a more humanitarian philosophy of discipline. Some interesting inter-correlations between the independent variables exist. Most of the correlations are quite small; however, the correlations between theory and industry and between finance and human values are over .5 and are negative.

The results for the step-wise multiple regression on discipline using the technology total and the values as independent variables are presented in Table XIII. The
### TABLE XII

**CORRELATION MATRIX ON DISCIPLINE FOR TOTAL SAMPLE USING SINGLE TECHNOLOGY VARIABLE AND RAW SCORES**

\((n=92)\)

<table>
<thead>
<tr>
<th></th>
<th>DISC</th>
<th>TECH</th>
<th>THEORY</th>
<th>POWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISC</td>
<td>1.000</td>
<td>-0.465</td>
<td>-0.173</td>
<td>-0.107</td>
</tr>
<tr>
<td>TECH</td>
<td>-0.465</td>
<td>1.000</td>
<td>0.173</td>
<td>0.236</td>
</tr>
<tr>
<td>THEORY</td>
<td>-0.173</td>
<td>0.173</td>
<td>1.000</td>
<td>0.054</td>
</tr>
<tr>
<td>POWER</td>
<td>-0.107</td>
<td>0.236</td>
<td>0.054</td>
<td>1.000</td>
</tr>
<tr>
<td>ACHMT</td>
<td>0.201</td>
<td>-0.263</td>
<td>-0.369</td>
<td>-0.394</td>
</tr>
<tr>
<td>HUMAN</td>
<td>0.096</td>
<td>-0.141</td>
<td>-0.079</td>
<td>-0.492</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td>-0.016</td>
<td>0.044</td>
<td>-0.621</td>
<td>-0.281</td>
</tr>
<tr>
<td>FINANCE</td>
<td>-0.078</td>
<td>0.009</td>
<td>-0.110</td>
<td>0.349</td>
</tr>
<tr>
<td></td>
<td>ACHMT</td>
<td>HUMAN</td>
<td>INDUSTRY</td>
<td>FINANCE</td>
</tr>
<tr>
<td>--------</td>
<td>----------</td>
<td>----------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>DISC</td>
<td>0.201</td>
<td>0.010</td>
<td>-0.016</td>
<td>-0.078</td>
</tr>
<tr>
<td>TECH</td>
<td>-0.263</td>
<td>-0.141</td>
<td>0.044</td>
<td>0.009</td>
</tr>
<tr>
<td>THEORY</td>
<td>-0.369</td>
<td>-0.080</td>
<td>-0.621</td>
<td>-0.110</td>
</tr>
<tr>
<td>POWER</td>
<td>-0.394</td>
<td>-0.492</td>
<td>-0.281</td>
<td>0.349</td>
</tr>
<tr>
<td>ACHMT</td>
<td>1.000</td>
<td>-0.130</td>
<td>0.034</td>
<td>-0.214</td>
</tr>
<tr>
<td>HUMAN</td>
<td>-0.130</td>
<td>1.000</td>
<td>0.112</td>
<td>-0.584</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td>0.034</td>
<td>0.112</td>
<td>1.000</td>
<td>-0.200</td>
</tr>
<tr>
<td>FINANCE</td>
<td>-0.214</td>
<td>-0.584</td>
<td>-0.200</td>
<td>1.000</td>
</tr>
</tbody>
</table>
analysis of variance yielded an F ratio of 4.72899 which is significant beyond a .01 level of confidence with 7 and 84 degrees of freedom. Looking further into the specific independent variables, the F ratios are significant beyond the .01 level of confidence for all 7 independent variables. The variables are ordered in the table according to a descending contribution to the explained variance for the total equation. Task-unit technology contributes the most to the variance explained by the total equation followed by theory, finance, industry, human achievement, and power values. Each of these variables are significantly related to the choice of a disciplinary style practiced by first-line supervisors and all have negative coefficients.

Tables XIV and XV follow the same general pattern as the previous discussion. However, two modifications of the data have been made to enhance further analysis. The responses by the supervisors on all variables have been standardized to yield a unit normal distribution which has a mean of zero and a standard deviation of 1. Also the two components of technology have been separated to yield further information about how work-unit technologies effect discipline. Task analyzability and task variability are now separate independent variables to be included in the step-wise multiple regression procedure. The same general pattern discussed previously for correlations with the dependent variable and intercorrelations exist using the standardized scores. Negative correlations with discipline
### TABLE XIII

RESULTS ON STEPWISE REGRESSION USING TECHNOLOGY TOTAL AND VALUES

(n=92)

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>DF</th>
<th>S.S.</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>7</td>
<td>658.99414</td>
<td>94.14202</td>
<td>4.72899**</td>
</tr>
<tr>
<td>Residual</td>
<td>84</td>
<td>1672.22325</td>
<td>19.90742</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>B</th>
<th>BETA</th>
<th>STD. ERROR</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>TECH</td>
<td>-0.137</td>
<td>-0.410</td>
<td>0.034</td>
<td>16.469**</td>
</tr>
<tr>
<td>THEORY</td>
<td>-1.350</td>
<td>-1.164</td>
<td>0.551</td>
<td>6.000**</td>
</tr>
<tr>
<td>FINANCE</td>
<td>-1.329</td>
<td>-0.880</td>
<td>0.556</td>
<td>5.703**</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td>-1.275</td>
<td>-0.965</td>
<td>0.543</td>
<td>5.509**</td>
</tr>
<tr>
<td>HUMAN</td>
<td>-1.191</td>
<td>-0.932</td>
<td>0.561</td>
<td>4.502**</td>
</tr>
<tr>
<td>ACHIEVEMENT</td>
<td>-1.155</td>
<td>-0.900</td>
<td>0.562</td>
<td>4.227**</td>
</tr>
<tr>
<td>POWER</td>
<td>-1.154</td>
<td>-0.724</td>
<td>0.578</td>
<td>3.990**</td>
</tr>
<tr>
<td>(CONSTANT)</td>
<td>138.052</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p ≤ .01
still exist for the two technology components and four of the six value scales. Achievement and human values maintain their positive correlation with disciplinary philosophy.

The step-wise multiple regression procedure for the relationship between disciplinary philosophy and eight independent variables are given in Table XV. The analysis of variance yielded an F ratio of 4.91649 which is significant beyond the .01 level of confidence with 8 and 83 degrees of freedom. Since the overall equation is significant statistically, further investigation into the significance of the independent variables was warranted. The step-wise multiple regression procedure orders the variables according to their contribution to the explained variance and appears in the bottom portion of Table XV. All of the variables except one were significant statistically above the .01 level of confidence. The order of independent variables is essentially the same as previously reported except for the two components of the work-unit technology variable. While the standardized scores on task variability were shown to be highly significant, the standardized scores for analyzability did not approach any acceptable level of statistical significance. This indicates that the significance of the technology variable in explaining the variance in disciplinary philosophy can be attributed solely to the task variability component.

The next procedure in step-wise regression was to return to the last step in which a significant variable was
TABLE XIV

CORRELATION MATRIX ON DISCIPLINE
FOR TOTAL SAMPLE—STANDARDIZED SCORES
(n=92)

<table>
<thead>
<tr>
<th></th>
<th>DISCZ</th>
<th>ALZCZ (^1)</th>
<th>VARCZ (^1)</th>
<th>THEORY (^2)</th>
<th>POWER (^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISCZ</td>
<td>1.000</td>
<td>-0.311</td>
<td>-0.504</td>
<td>-0.173</td>
<td>-0.107</td>
</tr>
<tr>
<td>ALZCZ</td>
<td>-0.311</td>
<td>1.000</td>
<td>0.600</td>
<td>0.165</td>
<td>0.273</td>
</tr>
<tr>
<td>VARCZ</td>
<td>-0.504</td>
<td>0.600</td>
<td>1.000</td>
<td>0.147</td>
<td>0.160</td>
</tr>
<tr>
<td>THEORY</td>
<td>-0.173</td>
<td>0.165</td>
<td>0.147</td>
<td>1.000</td>
<td>0.054</td>
</tr>
<tr>
<td>POWER</td>
<td>-0.107</td>
<td>0.273</td>
<td>0.160</td>
<td>0.054</td>
<td>1.000</td>
</tr>
<tr>
<td>ACHMTZ</td>
<td>0.201</td>
<td>-0.265</td>
<td>-0.211</td>
<td>-0.369</td>
<td>-0.394</td>
</tr>
<tr>
<td>HUMANZ</td>
<td>0.096</td>
<td>-0.202</td>
<td>-0.063</td>
<td>-0.079</td>
<td>-0.492</td>
</tr>
<tr>
<td>INDUSTZ</td>
<td>-0.016</td>
<td>0.011</td>
<td>0.064</td>
<td>-0.621</td>
<td>-0.281</td>
</tr>
<tr>
<td>FINANCEZ</td>
<td>-0.078</td>
<td>0.084</td>
<td>-0.055</td>
<td>-0.110</td>
<td>0.349</td>
</tr>
</tbody>
</table>

\(^1\) Components of technology variable
\(^2\) Supervisory values
<table>
<thead>
<tr>
<th></th>
<th>( \text{ACHMTZ}^2 )</th>
<th>( \text{HUMANZ}^2 )</th>
<th>( \text{INDUSTRZ}^2 )</th>
<th>( \text{FINANCEZ}^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{DISCZ} )</td>
<td>0.201</td>
<td>0.096</td>
<td>-0.016</td>
<td>-0.078</td>
</tr>
<tr>
<td>( \text{ALZCZ} )</td>
<td>-0.265</td>
<td>-0.202</td>
<td>0.011</td>
<td>0.084</td>
</tr>
<tr>
<td>( \text{VARCZ} )</td>
<td>-0.211</td>
<td>-0.063</td>
<td>0.064</td>
<td>-0.055</td>
</tr>
<tr>
<td>( \text{THEORYZ} )</td>
<td>-0.369</td>
<td>-0.079</td>
<td>-0.621</td>
<td>-0.110</td>
</tr>
<tr>
<td>( \text{POWERZ} )</td>
<td>-0.394</td>
<td>-0.492</td>
<td>-0.281</td>
<td>0.349</td>
</tr>
<tr>
<td>( \text{ACHMTZ} )</td>
<td>1.000</td>
<td>-0.130</td>
<td>0.034</td>
<td>-0.214</td>
</tr>
<tr>
<td>( \text{HUMANZ} )</td>
<td>-0.130</td>
<td>1.000</td>
<td>0.112</td>
<td>-0.584</td>
</tr>
<tr>
<td>( \text{INDUSTZ} )</td>
<td>0.034</td>
<td>0.112</td>
<td>1.000</td>
<td>-0.200</td>
</tr>
<tr>
<td>( \text{FINANCEZ} )</td>
<td>-0.214</td>
<td>-0.584</td>
<td>-0.200</td>
<td>1.000</td>
</tr>
</tbody>
</table>
TABLE XV

RESULTS ON STEPWISE REGRESSION
USING STANDARDIZED COMPONENTS OF TECHNOLOGY AND VALUES

(n=92)

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>DF</th>
<th>S.S.</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>8</td>
<td>29.25814</td>
<td>3.65727</td>
<td>4.91649**</td>
</tr>
<tr>
<td>Residual</td>
<td>83</td>
<td>61.74184</td>
<td>0.74388</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>B</th>
<th>BETA</th>
<th>STD. ERROR B</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARCZ</td>
<td>-0.465</td>
<td>-0.465</td>
<td>0.116</td>
<td>16.170**</td>
</tr>
<tr>
<td>FINANCEZ</td>
<td>-0.836</td>
<td>-0.836</td>
<td>0.361</td>
<td>5.353**</td>
</tr>
<tr>
<td>THEORY</td>
<td>-1.900</td>
<td>-1.900</td>
<td>0.466</td>
<td>5.469**</td>
</tr>
<tr>
<td>INDUSTZ</td>
<td>-0.900</td>
<td>-0.900</td>
<td>0.404</td>
<td>4.965**</td>
</tr>
<tr>
<td>HUMANZ</td>
<td>-0.840</td>
<td>-0.840</td>
<td>0.432</td>
<td>3.788**</td>
</tr>
<tr>
<td>ACHMTZ</td>
<td>-0.816</td>
<td>-0.816</td>
<td>0.429</td>
<td>3.622**</td>
</tr>
<tr>
<td>POWERZ</td>
<td>-0.677</td>
<td>-0.677</td>
<td>0.355</td>
<td>3.633**</td>
</tr>
<tr>
<td>ALZC (Constant)</td>
<td>0.026</td>
<td>-0.026</td>
<td>0.118</td>
<td>0.047 N.S.</td>
</tr>
</tbody>
</table>

**p ≤ .01
N.S. = Not significant at .05 level of confidence.
added. This step occurred after all variables were included in the equation except task analyzability. Tables XVI and XVII present the results on the step-wise regression using both raw scores and standardized scores for only the significant variables as determined by the F ratios. The results for the analysis of variance on the two equations should be and are identical. Both are calculated to be 5.67644 which is significant above the .01 level of confidence with 7 and 84 degrees of freedom. The b coefficients for each of the significant variables are included for both raw scores and standardized scores. Both the order and the signs of the coefficient are the same. The same holds true for the F ratios for the significant variables. All are significant above the .01 level of confidence.

The final step in examining the relationship of the independent variables to the dependent variables in a multiple regression procedure is to identify the extent to which each independent variable contributes to the explained variance of the total equation. This information is presented in Table XVIII. The multiple correlation is accumulated for the independent variables. Also included is the multiple coefficient of determination in the column labeled R square. With seven independent variables (one component of technology and six value scales) the multiple correlation is .567. Squaring this value to obtain the coefficient of multiple determination yields a value of .321. This
TABLE XVI
RESULTS ON STEPWISE REGRESSION
USING RAW SCORES FOR SIGNIFICANT VARIABLES
(n=92)

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>DF</th>
<th>S.S.</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>7</td>
<td>748.62464</td>
<td>106.94638</td>
<td>5.67644**</td>
</tr>
<tr>
<td>Residual</td>
<td>84</td>
<td>1582.59275</td>
<td>18.84039</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>B</th>
<th>BETA</th>
<th>STD. ERROR B</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARC</td>
<td>-0.248</td>
<td>-0.451</td>
<td>0.053</td>
<td>22.159**</td>
</tr>
<tr>
<td>FINANCE</td>
<td>-1.264</td>
<td>-0.838</td>
<td>0.542</td>
<td>5.443**</td>
</tr>
<tr>
<td>THEORY</td>
<td>-1.265</td>
<td>-1.091</td>
<td>0.537</td>
<td>5.538**</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td>-1.188</td>
<td>-0.900</td>
<td>0.530</td>
<td>5.027**</td>
</tr>
<tr>
<td>HUMAN</td>
<td>-1.081</td>
<td>-0.846</td>
<td>0.547</td>
<td>3.901**</td>
</tr>
<tr>
<td>ACHMT</td>
<td>-1.057</td>
<td>-0.821</td>
<td>0.548</td>
<td>3.721**</td>
</tr>
<tr>
<td>POWER</td>
<td>-1.078</td>
<td>-0.676</td>
<td>0.563</td>
<td>3.669**</td>
</tr>
<tr>
<td>(Constant)</td>
<td>129.710</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p ≤ .01


**TABLE XVII**

**RESULTS ON STEPWISE REGRESSION USING ONLY STANDARDIZED SIGNIFICANT VARIABLES**

(n=92)

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>DF</th>
<th>S.S.</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>7</td>
<td>29.22285</td>
<td>4.17469</td>
<td>5.67644***</td>
</tr>
<tr>
<td>Residual</td>
<td>84</td>
<td>61.77713</td>
<td>0.73544</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>B</th>
<th>BETA</th>
<th>STD. ERROR B</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARCZ</td>
<td>-0.451</td>
<td>-0.451</td>
<td>0.096</td>
<td>22.159**</td>
</tr>
<tr>
<td>FINANCEZ</td>
<td>-0.838</td>
<td>-0.838</td>
<td>0.359</td>
<td>5.443**</td>
</tr>
<tr>
<td>THEORYZ</td>
<td>-1.090</td>
<td>-1.090</td>
<td>0.463</td>
<td>5.538**</td>
</tr>
<tr>
<td>INDUSTZ</td>
<td>-0.900</td>
<td>-0.900</td>
<td>0.401</td>
<td>5.027**</td>
</tr>
<tr>
<td>HUMANZ</td>
<td>-0.846</td>
<td>-0.846</td>
<td>0.429</td>
<td>3.901**</td>
</tr>
<tr>
<td>ACHMTZ</td>
<td>-0.821</td>
<td>-0.821</td>
<td>0.426</td>
<td>3.721**</td>
</tr>
<tr>
<td>POWERZ</td>
<td>-0.676</td>
<td>-0.676</td>
<td>0.353</td>
<td>3.669**</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p ≤ .01**
indicates that 32 percent of the variance in the application of discipline is explained by the additive effects of the seven independent variables.

The bottom part of Table XVIII presents the total equation for predicting a supervisor's disciplinary style considering the interactive effects of technology and personal values. These coefficients correspond to the coefficients obtained from the raw scores and from the conversion of standard scores to raw scores. The equation starts with a constant of 129.710 and is decreased by each of the seven independent variables included in the equation. Given particular values for the independent variables, a supervisor's probable choice of disciplinary philosophy could be predicted within any given specified confidence interval.

In summarizing the results for hypothesis 5 that there is no significant relationship between the application of discipline and task structure or personal values, the results clearly indicate the statistical significance of these variables and thus hypothesis 5 is rejected. Hypothesis 5A which states that there is a significant relationship between the application of discipline and a task structure combined with personal values is accepted. The significant relationships are included in the preceding tables and appear as the multiple b coefficients in the total equation.
TABLE XVIII
VARIANCE EXPLAINED BY TOTAL EQUATION
(n=92)

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>MULTIPLE R</th>
<th>R SQUARE</th>
<th>RSQ CHANGE</th>
<th>SIMPLE R</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARCZ</td>
<td>0.504</td>
<td>0.254</td>
<td>0.254</td>
<td>-0.504</td>
</tr>
<tr>
<td>FINANCEZ</td>
<td>0.515</td>
<td>0.265</td>
<td>0.011</td>
<td>-0.078</td>
</tr>
<tr>
<td>THEORYZ</td>
<td>0.527</td>
<td>0.278</td>
<td>0.012</td>
<td>-0.173</td>
</tr>
<tr>
<td>INDUSTZ</td>
<td>0.538</td>
<td>0.289</td>
<td>0.012</td>
<td>-0.016</td>
</tr>
<tr>
<td>HUMANZ</td>
<td>0.539</td>
<td>0.290</td>
<td>0.001</td>
<td>0.010</td>
</tr>
<tr>
<td>ACHMTZ</td>
<td>0.540</td>
<td>0.291</td>
<td>0.001</td>
<td>0.201</td>
</tr>
<tr>
<td>POWERZ</td>
<td>0.567</td>
<td>0.321</td>
<td>0.030</td>
<td>-0.107</td>
</tr>
</tbody>
</table>

TOTAL EQUATION

DISCIPLINE = 129.710 - 0.248 VARC - 1.264 FINANCE - 1.265 THEORY - 1.188 INDUSTRY - 1.081 HUMAN - 1.057 ACHIEVEMENT - 1.078 POWER
C. Results for Work-Unit Technology Compared to Discipline

Hypothesis 2 states that there is no significant difference between philosophies of discipline held by supervisors in the three work-unit modes of technology. To test this hypothesis, the organizations and supervisors were classified into one of the three work-unit technologies according to their score on the two task-technology scales. Those supervisors indicating a work-unit technology that had a high degree of analyzability and a low degree of task variability were classified as falling into the systematized mode. Those supervisors who indicated a low degree of analyzability in their jobs and a high variability were classified as the group mode. Subjects reporting scores on the two variables which fall in the middle of those two extremes were classified as the service mode. The systematized mode was labeled, group 1; the service mode, group 2; and the group mode, group 3.

The 92 subjects were also classified into one of the six value scales. After standardizing the scores for each supervisor for each of the six values, the highest positive deviation was chosen as indicating the value most likely to dominate the supervisor's perception of work-related stimuli. Although this particular technique caused an extremely large loss of data, it was necessitated by the construction of the Values Inventory itself. This instrument, as indicated previously, is a zero sum instrument in which all responses
total 84. The relative rankings come from the forced-choice between competing statements within the questionnaire. However, standardizing the scores on each of the six value scales yielded a classification scheme which could be then tested for significant interaction with task-unit technology and discipline. The results of the over-all two way analysis of variance with interaction is depicted in Table XIX. The two-way interactions between technology and value or the relationship among the independent variables themselves approaches an acceptable level of significance. The F value of 1.706 was significant above the .100 level. However, since this interaction is not statistically significant, further investigation into the two independent variables was warranted. The F ratio for the main effects of technology and value combined on disciplinary style was significant beyond the .001 level of confidence.

Hypothesis 2 which stated that there was no significant difference between philosophies of discipline held by supervisors in the three work-unit modes of technology is rejected in favor of hypothesis $2_A$, which states there is a significant difference in philosophies of discipline between the three work-unit modes of technology. This follows from the F ratio of 36.841 calculated on the technology variable in relationship to the philosophies of discipline. This large F ratio indicates statistical
TABLE XIX
TWO-WAY ANOVA WITH INTERACTION
(n=92)

<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>S.S.</th>
<th>DF</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Effects</td>
<td>1128.295</td>
<td>7</td>
<td>161.185</td>
<td>12.201***</td>
</tr>
<tr>
<td>Tech</td>
<td>973.408</td>
<td>2</td>
<td>486.704</td>
<td>36.841***</td>
</tr>
<tr>
<td>Value</td>
<td>29.461</td>
<td>5</td>
<td>5.892</td>
<td>0.446 N.S.</td>
</tr>
<tr>
<td>Two-Way Interactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tech-Value</td>
<td>225.317</td>
<td>10</td>
<td>22.532</td>
<td>1.706 (.10)</td>
</tr>
<tr>
<td>Explained</td>
<td>1353.613</td>
<td>17</td>
<td>79.624</td>
<td>6.027***</td>
</tr>
<tr>
<td>Residual</td>
<td>977.597</td>
<td>74</td>
<td>13.211</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2331.210</td>
<td>91</td>
<td>25.618</td>
<td></td>
</tr>
</tbody>
</table>

***p ≤ .001
(.10) = p ≤ .100
### TABLE XX

**RANKINGS OF MEANS ON DISCIPLINE BY TECHNOLOGY AND VALUES**

(n=92)

<table>
<thead>
<tr>
<th>VALUES</th>
<th>Systematized</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n-92)</td>
<td></td>
</tr>
<tr>
<td>Theoretical</td>
<td>(1)* 29.00 (4)**</td>
<td>(2) 23.67 (4)</td>
</tr>
<tr>
<td>Power</td>
<td>(1) 29.60 (3)</td>
<td>(2) 26.63 (2)</td>
</tr>
<tr>
<td>Achievement</td>
<td>(2) 27.88 (6)</td>
<td>(1) 28.50 (1)</td>
</tr>
<tr>
<td>Human</td>
<td>(1) 28.00 (5)</td>
<td>(2) 24.20 (3)</td>
</tr>
<tr>
<td>Industry</td>
<td>(1) 29.80 (2)</td>
<td>(2) 23.00 (6)</td>
</tr>
<tr>
<td>Finance</td>
<td>(1) 31.00 (1)</td>
<td>(2) 23.25 (5)</td>
</tr>
</tbody>
</table>

---

*Numbers to the left are ranks within rows.
**Numbers to the right are ranks within columns.*
significance beyond the .001 level of significance. Table XX which is the initial ranking of means by rows and columns for analysis of variance utilizing the Friedman test yields identical results.

To test the hypotheses which relate the work-unit technology to a philosophy of discipline, a one-way analysis of variance was run on the technology groups. Again the F ratio for technology as an independent variable on discipline was significant beyond .001 level of confidence. This indicates that within the distribution of the three technology modes there is variation which probably is not due to chance. Using the multiple classification analysis of the SPSS package the three modes were examined to determine if their means were significantly different from each other. The lower part of Table XXI and Table XXII show the statistics on discipline for each of the technology modes. In accordance with two of the sub-hypotheses within hypothesis 2, the means for the different technology modes are in the predicted direction—the systematized mode is more legalistic than the service mode or group mode and the service mode is more legalistic than the group mode. These means are statistically significant from each other beyond the .01 level of confidence. Thus, hypothesis \(^2_{A(1)}\) which states the disciplinary philosophy in the system mode will be significantly more legalistic than the disciplinary philosophy of the service mode and the group mode is accepted. Also,
### TABLE XXI
ONE-WAY ANOVA ON TECHNOLOGY GROUPS

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>S.S.</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETWEEN GROUPS</td>
<td>2</td>
<td>1098.8320</td>
<td>549.4160</td>
<td>39.677***</td>
</tr>
<tr>
<td>WITHIN GROUPS</td>
<td>89</td>
<td>1232.4023</td>
<td>13.8472</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>91</td>
<td>2331.2344</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** ***p ≤ .001

<table>
<thead>
<tr>
<th>SYSTEMATIZED MODE ($\bar{x}$)</th>
<th>SERVICE MODE ($\bar{x}$)</th>
<th>GROUP MODE ($\bar{x}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.0667</td>
<td>24.9677</td>
<td>20.5806</td>
</tr>
</tbody>
</table>
TABLE XXII

STATISTICS ON DISCIPLINE FOR EACH TECHNOLOGY MODE

(\(n=92\))

<table>
<thead>
<tr>
<th>STATISTIC</th>
<th>SYSTEMATIZED MODE</th>
<th>SERVICE MODE</th>
<th>GROUP MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>29.067</td>
<td>24.968</td>
<td>20.581</td>
</tr>
<tr>
<td>Mode</td>
<td>28.000</td>
<td>25.000</td>
<td>17.000</td>
</tr>
<tr>
<td>Median</td>
<td>28.833</td>
<td>25.000</td>
<td>20.250</td>
</tr>
<tr>
<td>Minimum</td>
<td>23.000</td>
<td>19.000</td>
<td>10.000</td>
</tr>
<tr>
<td>Maximum</td>
<td>33.000</td>
<td>33.000</td>
<td>33.000</td>
</tr>
<tr>
<td>S.D.</td>
<td>2.728</td>
<td>3.157</td>
<td>4.891</td>
</tr>
<tr>
<td>Variance</td>
<td>7.444</td>
<td>9.966</td>
<td>23.918</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-0.543</td>
<td>-0.171</td>
<td>-0.093</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.345</td>
<td>0.265</td>
<td>0.237</td>
</tr>
</tbody>
</table>
TABLE XXIII

ONE-WAY ANOVA ON DISCIPLINE FOR HIGHEST DEVIATION SCORE PER VALUE

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>S.S.</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETWEEN GROUPS</td>
<td>5</td>
<td>154.8828</td>
<td>30.9766</td>
<td>1.2241</td>
</tr>
<tr>
<td>WITHIN GROUPS</td>
<td>86</td>
<td>2176.3516</td>
<td>25.3064</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>91</td>
<td>2331.2344</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[p=0.304\]
hypothesis $H_0(2)$ which states the disciplinary philosophy of the service mode will be significantly more legalistic than the group mode but more humanitarian than the systematized mode is accepted.

D. Results for Disciplinary Philosophies and Personal Values

Hypothesis 3 states that there is no significant difference between disciplinary philosophies held by supervisors according to their personal values. From the regression equation and the F ratios presented in Table XVII, the evidence calls for rejection of this hypothesis. All six value scales are statistically related to discipline beyond the .01 level of confidence. To examine this relationship closer, the value system scores were reduced to the highest deviation value scale. If the data in Tables XIX, XXIII, and XXIV, are examined, the results with highest deviation scores indicate an acceptance of the above hypothesis. Both the F ratios from the two-way analysis of variance and the one-way analysis of variance on discipline for the highest deviation score for values do not reach an acceptable level of significance. Therefore, the loss of data necessitated by the structure of the Values Inventory has caused a result which contradicts the significant results yielded by the multiple regression analysis. The statistics presented in Table XXIV are relevant to this issue. Although the distribution across the six value scales is approximately equal, the means do not
TABLE XXIV

DISCIPLINE STATISTICS FOR SUPERVISORS
CLASSIFIED BY HIGHEST DEVIATION SCORE PER VALUE

(n=92)

<table>
<thead>
<tr>
<th>HIGHEST VALUE SCORE</th>
<th>n</th>
<th>MEAN</th>
<th>S.D.</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEORETICAL</td>
<td>12</td>
<td>23.50</td>
<td>5.57</td>
<td>14</td>
<td>33</td>
</tr>
<tr>
<td>POWER</td>
<td>17</td>
<td>25.47</td>
<td>5.78</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>ACHIEVEMENT</td>
<td>14</td>
<td>27.21</td>
<td>3.79</td>
<td>18</td>
<td>33</td>
</tr>
<tr>
<td>HUMAN</td>
<td>14</td>
<td>25.21</td>
<td>4.08</td>
<td>18</td>
<td>33</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td>14</td>
<td>24.57</td>
<td>4.86</td>
<td>17</td>
<td>31</td>
</tr>
<tr>
<td>FINANCE</td>
<td>21</td>
<td>23.38</td>
<td>5.44</td>
<td>14</td>
<td>33</td>
</tr>
<tr>
<td>TOTAL</td>
<td>92</td>
<td>24.83</td>
<td>5.06</td>
<td>10</td>
<td>33</td>
</tr>
</tbody>
</table>
show any discernable pattern. Also the means do not vary significantly from the total mean of 24.83.

E. Results for the Ordering of Values and Discipline

Hypothesis 4 stated that more legalistic philosophies of discipline would be exhibited by supervisors who scored the highest on the value scales in the following order:

1. Theoretical
2. Financial
3. Industry
4. Power
5. Achievement
6. Human

Although the results from the analysis of variance tables indicate that the means for the value scales in relationship to discipline are not statistically significant from each other, the order of the actual mean scores for the value scales is shown in Table XXV. The actual order is almost the exact inverse of the order hypothesized. Supervisors who had the highest deviation scores on achievement value tended to practice a more legalistic philosophy of discipline. Supervisors who indicated that financial values were most important to them tended to practice the most humanitarian philosophy of discipline. The other values were spread between these two extremes.
TABLE XXV

ORDER OF VALUES FROM
HUMANITARIAN TO LEGALISTIC
PHILOSOPHIES OF DISCIPLINE

(n=92)

<table>
<thead>
<tr>
<th>HYPOTHESESIZED</th>
<th>ACTUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Theoretical</td>
<td>1. Achievement</td>
</tr>
<tr>
<td>2. Financial</td>
<td>2. Power</td>
</tr>
<tr>
<td>3. Industry</td>
<td>3. Human</td>
</tr>
<tr>
<td>4. Power</td>
<td>4. Industry</td>
</tr>
<tr>
<td>5. Achievement</td>
<td>5. Theoretical</td>
</tr>
</tbody>
</table>
F. Results Including
Biographical Data Elements

One of the stated purposes of the present study was to determine what effect certain biographical data elements have on the application of discipline in varied organizational settings. Data for these variables was obtained from the biographical data questionnaire and include the following: (1) age; (2) sex of the respondent; (3) years of formal education; (4) years of work experience; (5) major field of study; (6) years work experience in the present job; and (7) number of employees directly disciplined. These variables were added to the equation developed thus far. The results appear in Table XXVI. Although the F ratio for the total equation is significant beyond the .01 level of confidence, only education and number disciplined reached statistical significance. Age, sex, years work experience, years experience in present position, and education major did not reach the .05 level of confidence.

Tables XXVII and XXVIII present the results for all significant independent variables as they relate to the application of discipline in the organizational setting. By excluding all biographical data elements which did not reach statistical significance, the multiple regression equation reaches statistical significance beyond .01 level. The work unit variability scale, all personal values, and years of formal education plus the number employees directly disciplined comprise the saturated equation. This equation
appears in Table XXVIII. The origin of the line at 124 is reduced by 8 of the 9 independent variables. Only the number of employees supervised has a positive coefficient. This equation represents an improvement in explained variance over the equation which included only work-unit technology and personal values. Whereas the previous equation accounted for 32 percent of the variance in discipline, the saturated equation accounts for 40.3 percent of the explained variance. Thus, the overall result of the present study is that discipline is a function of at least 9 independent variables—variability in the work-unit technology, personal values of the supervisors (six value scales), the years of formal education, and the number of employees the supervisor directly disciplines.

Summary for the Results Section

The five hypotheses stated in Chapter I were subjected to various statistical tests to determine the validity of the proposed relationships between work-unit technology, personal values, and disciplinary philosophy. Those results will be summarized in the following paragraphs.

The hypothesis of a normal distribution of disciplinary scores occurring around the midpoint between the two extreme positions on the disciplinary questionnaire was rejected. A t-test between the expected midpoint and the sample mean indicated there was a statistical significant difference between the two. Comparison between the sample mean of the present study and the sample mean from a previous
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>B</th>
<th>BETA</th>
<th>STD ERROR B</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARC</td>
<td>-0.178</td>
<td>-0.325</td>
<td>0.055</td>
<td>10.358**</td>
</tr>
<tr>
<td>ED</td>
<td>-0.380</td>
<td>-0.157</td>
<td>0.253</td>
<td>2.263**</td>
</tr>
<tr>
<td>NUMSUP</td>
<td>0.078</td>
<td>0.216</td>
<td>0.036</td>
<td>4.678**</td>
</tr>
<tr>
<td>MAJOR</td>
<td>-0.761</td>
<td>-0.078</td>
<td>1.105</td>
<td>0.474 N.S.</td>
</tr>
<tr>
<td>FINANCE</td>
<td>-1.276</td>
<td>-0.845</td>
<td>0.555</td>
<td>5.286**</td>
</tr>
<tr>
<td>YEXP</td>
<td>0.090</td>
<td>0.122</td>
<td>0.084</td>
<td>1.148 N.S.</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td>-1.248</td>
<td>-0.945</td>
<td>0.539</td>
<td>5.356**</td>
</tr>
<tr>
<td>VARIABLE</td>
<td>B</td>
<td>BETA</td>
<td>STD_ERROR B</td>
<td>F</td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>-------</td>
<td>-------------</td>
<td>------</td>
</tr>
<tr>
<td>THEORY</td>
<td>-1.255</td>
<td>-1.082</td>
<td>0.549</td>
<td>5.217**</td>
</tr>
<tr>
<td>AGE</td>
<td>-0.074</td>
<td>-0.151</td>
<td>0.095</td>
<td>0.604 N.S.</td>
</tr>
<tr>
<td>SEX</td>
<td>-0.228</td>
<td>-0.019</td>
<td>1.244</td>
<td>0.033 N.S.</td>
</tr>
<tr>
<td>POWER</td>
<td>-1.200</td>
<td>-0.753</td>
<td>0.571</td>
<td>4.416**</td>
</tr>
<tr>
<td>ACHMT</td>
<td>-1.142</td>
<td>-0.887</td>
<td>0.559</td>
<td>4.168**</td>
</tr>
<tr>
<td>HUMAN</td>
<td>-1.134</td>
<td>-0.887</td>
<td>0.562</td>
<td>4.071**</td>
</tr>
<tr>
<td>YWORK</td>
<td>0.045</td>
<td>0.091</td>
<td>0.100</td>
<td>0.202 N.S.</td>
</tr>
<tr>
<td>(Constant)</td>
<td>139.232</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** p ≤ .01
TABLE XXVII
RESULTS ON SIGNIFICANT WORK-UNIT TECHNOLOGY, PERSONAL VALUES, AND BIOGRAPHICAL DATA ELEMENTS

(n=92)

<table>
<thead>
<tr>
<th>ANALYSIS OF VARIANCE</th>
<th>DF</th>
<th>S.S.</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>9</td>
<td>940.32619</td>
<td>104.48069</td>
<td>6.15966**</td>
</tr>
<tr>
<td>Residual</td>
<td>82</td>
<td>1390.89120</td>
<td>16.96209</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>B</th>
<th>BETA</th>
<th>STD ERROR B</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARC</td>
<td>-0.181</td>
<td>-0.329</td>
<td>0.054</td>
<td>11.178**</td>
</tr>
<tr>
<td>ED</td>
<td>-0.438</td>
<td>-0.181</td>
<td>0.237</td>
<td>3.420**</td>
</tr>
<tr>
<td>NUMSUP</td>
<td>0.080</td>
<td>0.222</td>
<td>0.033</td>
<td>5.959**</td>
</tr>
<tr>
<td>FINANCE</td>
<td>-1.145</td>
<td>-0.759</td>
<td>0.520</td>
<td>4.853**</td>
</tr>
<tr>
<td>THEORY</td>
<td>-1.132</td>
<td>-0.976</td>
<td>0.522</td>
<td>4.694**</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td>-1.090</td>
<td>-0.825</td>
<td>0.510</td>
<td>4.554**</td>
</tr>
<tr>
<td>POWER</td>
<td>-1.029</td>
<td>-0.645</td>
<td>0.543</td>
<td>3.589**</td>
</tr>
<tr>
<td>HUMAN</td>
<td>-0.966</td>
<td>-0.756</td>
<td>0.525</td>
<td>3.383**</td>
</tr>
<tr>
<td>ACHMT</td>
<td>-0.962</td>
<td>-0.747</td>
<td>0.529</td>
<td>3.307**</td>
</tr>
<tr>
<td>(Constant)</td>
<td>124.100</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p ≤ .01
TABLE XXVIII
VARIANCE EXPLAINED BY SATURATED EQUATION
(n=92)

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>MULTIPLE R</th>
<th>RSQ</th>
<th>R</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARC</td>
<td>0.504</td>
<td>0.254</td>
<td>-0.504</td>
<td>-0.181</td>
</tr>
<tr>
<td>ED</td>
<td>0.557</td>
<td>0.310</td>
<td>-0.411</td>
<td>-0.438</td>
</tr>
<tr>
<td>NUMSUP</td>
<td>0.591</td>
<td>0.349</td>
<td>0.344</td>
<td>0.080</td>
</tr>
<tr>
<td>FINANCE</td>
<td>0.602</td>
<td>0.362</td>
<td>-0.078</td>
<td>-1.145</td>
</tr>
<tr>
<td>THEORY</td>
<td>0.606</td>
<td>0.368</td>
<td>-0.173</td>
<td>-1.132</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td>0.614</td>
<td>0.377</td>
<td>-0.016</td>
<td>-1.089</td>
</tr>
<tr>
<td>POWER</td>
<td>0.615</td>
<td>0.378</td>
<td>-0.107</td>
<td>-1.029</td>
</tr>
<tr>
<td>HUMAN</td>
<td>0.616</td>
<td>0.379</td>
<td>0.096</td>
<td>-0.966</td>
</tr>
<tr>
<td>ACHMT</td>
<td>0.635</td>
<td>0.403</td>
<td>0.201</td>
<td>-0.962</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
<td></td>
<td>124.100</td>
</tr>
</tbody>
</table>

DISCIPLINE = 124.100 - .181 VARIABILITY - .438 EDUCATION + .080 NUMBER SUPERVISED - 1.145 FINANCE - 1.132 THEORY - 1.089 INDUSTRY - 1.029 POWER - .966 HUMAN - .962 ACHIEVEMENT
study yielded essentially the same results—the disciplinary philosophy as measured by these two similar instruments of first-line supervisors tends to be centered over the position corresponding to a legalistic-judicial view of discipline.

A step-wise multiple regression procedure yielded a statistical significant relationship between the application of discipline and task structure combined with personal values. This significant relationship holds for all six value scales plus the task variability scale of the work-unit technology measurement.

A significant difference between philosophies of discipline held by supervisors in the three work-unit modes of technology was reported as significance beyond the .001 level. Further investigations show that the disciplinary philosophy of the three work-unit modes of technology were significantly different from each other with the systematized mode, more legalistic than the service mode or the group mode, and the service mode more legalistic than the group mode but more humanitarian than the systematized mode.

All value scales were found to be statistically related to discipline. For further investigation, the supervisors were classified according to their highest deviation score on the values scales. The highest standardized deviation score posted by a particular supervisor was then used to determine the relationship between values and disciplinary philosophy. This abbreviated form of
scores on the values questionnaire yielded no statistical
significance between those highest deviation scores and the
philosophy of discipline practices by the supervisors.

Although the statistical tests indicated no signif­
icant difference between the means on discipline and the
highest deviation scores on the values, the ordering of the
value scales was examined. Supervisors who indicated a high
deviation score for achievement tended to practice philoso­
phies of discipline that were more legalistic than any of the
other value scales. Supervisors who indicated financial
values were extremely important to them tended to practice
the most humanitarian philosophy of discipline.
CHAPTER IV
Interpretations and Conclusions

One of the stated purposes of the present study was to ascertain the most prevalent disciplinary philosophy practiced in modern organizational settings. The descriptive results pertaining to this purpose have been identified and discussed in the previous chapter. It remains a function of the following section to relate these findings to the theoretical foundations on which discipline rests. Also, the practical implications for the practice of management in modern organizations must be considered. Thus, the following discussion has two major thrusts. First, the results will be related to the theoretical framework developed to justify the present study and pose the working hypotheses. Second, the implications of the obtained results for the practice of management will be identified and discussed.

Theoretical Implications

Discipline is one of those areas of management theory that has been written about and aluded to in numerous books and articles in the management literature. As developed in the justification for the study, discipline in the prescientific management era was essentially military and religious in nature. The moral obligation of the church and the demanded obedience by the military combine to produce philosophies of discipline which called for not only unflinching application of disciplinary action but also severe penalties.
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The imperative to the subordinate was almost absolute—obey or suffer the consequences. As the industrial revolution began to make inroads into the authority of religious, military, and governmental organizations, discipline in economic organizations began to take on a character of their own. The disciplinary philosophy advocated by the writers of the scientific management school are an example of this change. A planned system of rules, a detailed system of records, consistent, judicial, fair application of disciplinary action and leading workers in the benefits of good discipline were characteristic of the scientific management school which differed from the unplanned, often capricious, but always severe application of penalties for infractions before the turn of the 19th century. If the philosophies of discipline for the pre-scientific management era and the scientific management writings were plotted against the continuum of disciplinary philosophy proposed by Shull and Cummings, the transition from a pure legalistic to a legalistic-judicial category is evident. Under the legalistic-judicial philosophy of discipline the concern is with maintaining the administrative effectiveness of the firm by the consistent application of discipline. However, the supervisor retains the right to invoke the exception principle. The writers of the management process school could also be classified as corresponding to the legalistic-judicial position on the discipline continuum. In general the writers in this school advocated a consistent application of the agreed upon
penalties for infractions of rules by employees. The results of the present study indicate that the practice of discipline in the organizational setting corresponds very closely to the legalistic-judicial position on the continuum. Although the cases and the responses on the discipline questionnaire were designed to provide a wide degree of latitude not only in interpretation but also in applying the rule, supervisors from a wide diversity of organizations chose a position which applied the rule consistently in most cases. The distribution of scores more than amply demonstrates this tendency.

The next position on the discipline continuum is labeled as judicial-clinical. This position corresponds roughly to the supervisor sitting as a judge who is to consider the intent and severity of the infraction as he decides either to apply the penalty specified in the rule or to temper that penalty according to the circumstances that he perceives. The theoretical foundation for a judicial-clinical philosophy of discipline may be found in the writings of authors classified as contributors to the Neoclassical school. Generally this school advocated that the structural or bureaucratic elements of an organization should be recognized as dependent upon the conditions of the social system within the organization. The results of the present study support some measure of validity to the proposition that the social system within the organization does indeed have an effect upon the application of discipline. However, the trend toward behavioral modification of the structural
elements of discipline is not as evident as could have been expected given the voluminous research on behavior variables. It would seem that some theoretical foundation would have been developed which would allow supervisors to explicitly consider the behavioral variables as they relate to the application of discipline. This theoretical underpinning has not yet been developed and the results of the present study confirm this void in behavioral research. From a plus one to a minus one standard deviation, the distribution of scores on discipline almost wholly fall within the pure legalistic, legalistic-judicial, and the judicial-clinical areas of the continuum. There are a few rare individuals who express a philosophy of discipline which would correspond to a clinical-humanitarian philosophy and no one scored in the pure humanitarian range of the continuum. The conclusion is inescapable. The theoretical foundations of discipline, including present day authors, have not provided the framework for effective assimilation of structural and behavioral variables in the consideration of disciplinary philosophy. Thus, the practical expressions of the application of disciplinary actions by the supervisors in the present study reflect the prescriptions contained in the management literature. Because he or she may lack a systematic way of predicting the most appropriate style of discipline, the supervisor may practice a legalistic philosophy of discipline even in circumstances which would benefit from using a philosophy of discipline more attuned to self-discipline.
Figure 2

THEORETICAL RELATIONSHIP OF DISCIPLINE TO WORK-UNIT TECHNOLOGY

Positive Style of Discipline

Punitive Style of Discipline

DISCIPLINE

Increasing Legalistic Approach

Systematized Service Group

WORK-UNIT TECHNOLOGY
Although the present study was designed to test some of the specific variables in discipline, an underlying question seems to pervade the purpose, results, and interpretations. Can the theoretical framework of the classical and neoclassical schools of management thought be melded into a systems and contingency approach more reflective of characteristics in modern organizations? Discipline seems to be standing at the door of systems and contingency theories waiting for a sound foundation of research to structure its acceptance. The results of this study are conducive to the proposal of a generalized relationship of discipline to work-unit technology, personal values, and biographical data elements. By far the strongest result in terms of explaining the variance in disciplinary philosophy was the variable of work-unit technology. Results indicated a level of statistical significance well beyond the .01 level of confidence. Figure 2 presents a schematic of some of the significant findings in the present study. A generalized relationship of discipline to the three modes of work-unit technology is similar to propositions and concepts contained in several contingency theories on various aspects of management and organization. According to the significant findings, as the work-unit technology progresses from a systematized mode to a service mode to a group mode, the style of discipline practiced becomes less legalistic. Thus, the lines separating the punitive style of discipline from the positive style of discipline roughly corresponds to the distribution
of scores across all respondents. Two features of the graph are readily apparent. First, the punitive style of discipline covers considerably more area than the positive style of discipline. Second, the anchor points at each extreme are different—the starting points are not symmetrical. This may be interpreted as meaning that while the positive styles of discipline are more practiced as variability increases in the job situation, the major thrust of discipline decisions will be made according to philosophies of discipline which cluster toward the legalistic end of the continuum.

From the results of the present study, a modification of the generalized relationship of discipline in Figure 2 must occur. The behavioral dimension of the present study—supervisor values—is plotted against the generalized relationship of work-unit technology in Figure 3. The data points are the mean scores on discipline for each of the cells represented in the Table XXIX. The three work-unit technologies are presented as classifications along the left-hand margin and the highest deviation score on a particular value is classified across the top margin. The means on discipline for each of the 18 cells in this 3 x 6 matrix comprise the data points depicted in Figure 3.

The pattern of data elements in Figure 3 is quite pronounced. The overall trend of the distribution is downward to the right and follows from the results on work-unit technology. Specific values within each of the work-unit technologies seems to have a differential effect on the
<table>
<thead>
<tr>
<th>TECHNOLOGY</th>
<th>THEORETICAL</th>
<th>POWER</th>
<th>ACHIEVEMENT</th>
<th>HUMAN</th>
<th>INDUSTRY</th>
<th>FINANCE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systematized Mode</td>
<td>n=4</td>
<td>n=5</td>
<td>n=8</td>
<td>n=4</td>
<td>n=5</td>
<td>n=4</td>
<td>n=30</td>
</tr>
<tr>
<td></td>
<td>$\bar{X}=29.00$</td>
<td>$\bar{X}=29.60$</td>
<td>$\bar{X}=27.88$</td>
<td>$\bar{X}=28.00$</td>
<td>$\bar{X}=29.80$</td>
<td>$\bar{X}=31.00$</td>
<td>$\bar{X}=29.07$</td>
</tr>
<tr>
<td>Service Mode</td>
<td>n=3</td>
<td>n=8</td>
<td>n=4</td>
<td>n=5</td>
<td>n=3</td>
<td>n=8</td>
<td>n=31</td>
</tr>
<tr>
<td></td>
<td>$\bar{X}=23.67$</td>
<td>$\bar{X}=26.63$</td>
<td>$\bar{X}=28.5$</td>
<td>$\bar{X}=24.20$</td>
<td>$\bar{X}=23.00$</td>
<td>$\bar{X}=23.25$</td>
<td>$\bar{X}=24.97$</td>
</tr>
<tr>
<td>Group Mode</td>
<td>n=5</td>
<td>n=4</td>
<td>n=2</td>
<td>n=5</td>
<td>n=6</td>
<td>n=9</td>
<td>n=31</td>
</tr>
<tr>
<td></td>
<td>$\bar{X}=19.00$</td>
<td>$\bar{X}=18.00$</td>
<td>$\bar{X}=22.00$</td>
<td>$\bar{X}=24.00$</td>
<td>$\bar{X}=21.00$</td>
<td>$\bar{X}=20.11$</td>
<td>$\bar{X}=20.58$</td>
</tr>
<tr>
<td>Total</td>
<td>n=12</td>
<td>n=17</td>
<td>n=14</td>
<td>n=14</td>
<td>n=14</td>
<td>n=21</td>
<td>n=92</td>
</tr>
<tr>
<td></td>
<td>$\bar{X}=23.50$</td>
<td>$\bar{X}=25.47$</td>
<td>$\bar{X}=27.21$</td>
<td>$\bar{X}=25.21$</td>
<td>$\bar{X}=24.57$</td>
<td>$\bar{X}=23.38$</td>
<td>$\bar{X}=24.83$</td>
</tr>
</tbody>
</table>
Figure 3

DISCIPLINE MEANS FOR EACH VALUE WITHIN WORK-UNIT TECHNOLOGY

Values:
- T
- P
- A
- H
- I
- F

Technology:
- Systematized
- Service
- Group
application of discipline. Since all 6 values were shown to be significantly related to the choice of a disciplinary style, their influence should be explicitly considered in the overall model.

A simple linear regression was applied to the distribution of discipline scores to obtain the least squares estimate of the straight line which would best describe the distribution. The regression equation for the distribution of scores on discipline by values and technology years is:

\[ Y = 30.85 - 0.62 (X) \]

where: \( Y \) = predicted discipline score
\( X \) = code number of technology and values combined

With technology and values combined the results for predicting "Y" from this generalized regression equation is presented in Table XXX. Consistent with the significant relationship of work-unit technology to discipline and the significance of each of the value systems the downward sloping regression line is modified within each of the work-unit technologies by the differential effects of the values. Included on Figure 4 is range of scores possible given a plus one and a minus one standard error of estimate around the regression line. Most of the means on discipline tied to the individual values fall within that range of one standard area of estimate. However, there are some values which are extremely important in modifying the disciplinary philosophy within a mode of technology.
<table>
<thead>
<tr>
<th>TECHNOLOGY</th>
<th>VALUE</th>
<th>MEAN</th>
<th>PREDICTED Y</th>
<th>RESIDUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systematized</td>
<td>Theoretical</td>
<td>29.00</td>
<td>30.22</td>
<td>-0.122</td>
</tr>
<tr>
<td></td>
<td>Power</td>
<td>29.60</td>
<td>29.60</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Achievement</td>
<td>27.80</td>
<td>28.98</td>
<td>-0.110</td>
</tr>
<tr>
<td></td>
<td>Human</td>
<td>28.00</td>
<td>28.35</td>
<td>-0.035</td>
</tr>
<tr>
<td></td>
<td>Industry</td>
<td>29.80</td>
<td>27.73</td>
<td>0.207</td>
</tr>
<tr>
<td></td>
<td>Finance</td>
<td>31.00</td>
<td>27.11</td>
<td>0.389*</td>
</tr>
<tr>
<td>Service</td>
<td>Theoretical</td>
<td>23.67</td>
<td>26.48</td>
<td>-0.281*</td>
</tr>
<tr>
<td></td>
<td>Power</td>
<td>26.62</td>
<td>25.86</td>
<td>0.077</td>
</tr>
<tr>
<td></td>
<td>Achievement</td>
<td>28.50</td>
<td>25.24</td>
<td>0.326*</td>
</tr>
<tr>
<td></td>
<td>Human</td>
<td>24.20</td>
<td>24.61</td>
<td>-0.041</td>
</tr>
<tr>
<td></td>
<td>Industry</td>
<td>23.00</td>
<td>23.99</td>
<td>-0.099</td>
</tr>
<tr>
<td></td>
<td>Finance</td>
<td>23.25</td>
<td>23.37</td>
<td>-0.012</td>
</tr>
</tbody>
</table>
TABLE XXX
(Continued)

<table>
<thead>
<tr>
<th>TECHNOLOGY</th>
<th>VALUE</th>
<th>MEAN</th>
<th>PREDICTED Y</th>
<th>RESIDUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>Theoretical</td>
<td>19.00</td>
<td>22.74</td>
<td>-0.374*</td>
</tr>
<tr>
<td></td>
<td>Power</td>
<td>18.00</td>
<td>22.12</td>
<td>-0.412*</td>
</tr>
<tr>
<td></td>
<td>Achievement</td>
<td>22.00</td>
<td>21.50</td>
<td>0.050</td>
</tr>
<tr>
<td></td>
<td>Human</td>
<td>24.00</td>
<td>20.87</td>
<td>0.313*</td>
</tr>
<tr>
<td></td>
<td>Industry</td>
<td>21.00</td>
<td>20.25</td>
<td>0.075</td>
</tr>
<tr>
<td></td>
<td>Finance</td>
<td>20.11</td>
<td>19.63</td>
<td>0.048</td>
</tr>
</tbody>
</table>

*Beyond 1 standard error of estimate
Figure 4

DISCIPLINE AS A FUNCTION OF WORK-UNIT TECHNOLOGY MODIFIED BY PERSONAL VALUES

<table>
<thead>
<tr>
<th>Values</th>
<th>Systematized</th>
<th>Service</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>T</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td>Discipline</td>
<td>30</td>
<td>25</td>
<td>20</td>
</tr>
</tbody>
</table>
These values are dependent upon that mode as each extreme is different for each of the different modes. For example, the finance value in the systematized mode modifies the disciplinary philosophy of supervisors in that mode greatly toward a more humanitarian approach. The service mode has a different pattern of results. The theoretical value modifies the disciplinary philosophy of supervisors more toward the legalistic end of the continuum. On the other hand, those supervisors who are achievement oriented tend to display more humanitarian styles of discipline within that mode of technology. The group mode technology exhibits the most modification of discipline by values. The theoretical and power values tend to modify the general pattern more towards a humanitarian choice of disciplinary style. The opposite is true of the human value. Supervisors who express a value system with an extreme position on the human value tend to apply discipline in a more humanitarian or positive style.

The pattern of how values modify the application of discipline within the work-unit technologies is presented in Table XXXI. These variations above or below the generalized regression line are represented by pluses and minuses in the table. Interestingly the pattern of these modifications is almost exactly opposite within the two extreme work-unit technologies—systematized versus group modes. Supervisors in the systematized mode who score highest on the theoretical, power, achievement, and human values tend to modify their
### TABLE XXXI
VARIATIONS ABOVE OR BELOW
THE GENERALIZED REGRESSION LINE VALUES

<table>
<thead>
<tr>
<th></th>
<th>Theoretical</th>
<th>Power</th>
<th>Achievement</th>
<th>Human</th>
<th>Industry</th>
<th>Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systematized</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Service</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Group</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>
choice of a disciplinary style more toward a humanitarian philosophy. The supervisors who score highest on the industry and finance values within that mode tend to apply a more legalistic philosophy of discipline. Almost the exact opposite is true of supervisors in the group mode. Theoretical and power values tend to modify the choice of a disciplinary style more toward the humanitarian end of the continuum while achievement, human, industry, and finance values tend to modify the choice of a disciplinary style more toward a legalistic approach. Not surprisingly, the service mode supervisors do not exhibit a clear cut and definitive pattern.

The results of the present study and the interpretation of those results provide the framework for postulating a contingency framework for the organizational variable of discipline. The significant relationship of technology and supervisory values plus the close correspondence of the generalized regression equation to the actual regression equation supports the contention that the application of discipline in the organizational setting is contingent upon the interaction of the variability of work-related stimuli and the supervisors personal values. As the variability of the job increases the supervisor tends to practice a more humanitarian or positive style of discipline. Also, the personal values of the supervisors tend to modify the choice of a disciplinary style differentially within the overall pattern. More definitive statements concerning
discipline in the industrial setting are possible. By ascer-
taining the variability in a given situation and the per-
sonal values of the supervisors an organization is better
able to formulate policies and procedures concerning the
application of discipline.

Practical Implications of Results

The significance of the findings on disciplinary
action have implications for the operational aspects of the
organization. Within the business functions of marketing,
finance, and production, the results of the present study
have significant implications for the personnel function.
Usually carrying the major responsibility for the application
of discipline in the organization, the personnel department
should consider the implications of a contingency approach
to designing the policies and procedures for supervisors to
follow. Given the relationship between discipline and work-
unit technology, perhaps a personnel department would con-
sider writing rules and offenses which correspond to the
situational element within a given work unit. For example,
the same rules would not necessarily apply to a group mode
technology and a systematized mode. Some offenses may be
specific to the work-unit technology. For example, theft
would not be considered an especially important variable to
control in a research and development setting. However, in
many systematized modes where the opportunity exists for
significant thefts of company property, both the rule
and the penalty could be more specific and severe. Although no evidence specifically relating to discipline exists, evidence from studies on leadership suggests that the employee himself may prefer situations in which the rules and penalties are clearly specified. Such a contingency approach negates the advocacy of most modern writers for a uniform system of rules and penalties for the entire organization. Although more work for the personnel department, a contingency approach to offenses and penalties may be more productive in helping the organization achieve its objectives.

The application of discipline brings sharply into focus the role of supervisors in organizations. Of immediate concern to the personnel department would be the selection of supervisors who have demonstrated the ability to remain flexible in their approach to discipline. This would be particularly true if the individual were considered as material for high level management. The transfer of supervisors through departments for the purpose of broadening their exposure to the organization is a common practice in many organizations. Such a training mechanism may bring sharply into focus the varying situations the supervisor-trainee would be called upon to face. During his training and subsequent development some attention can be given to developing the supervisor's capacity to analyze the demands of the situation and choose the appropriate philosophy of discipline which best matches his own personal values and the factors in the work unit. Promotions might be particularly troublesome
for supervisors not trained to perceive the differences in job situations as he progresses higher and higher in the organization. The need to practice a more positive style of discipline at higher levels of management would demand the personnel department to design management development programs which deal with this transition.

Some of the principles of the practice of management would also need to consider the adoption of a contingency approach to discipline. The organizing function is, of course, the most obvious area of significant impact. As management designs its structure, some consideration should be given to matching the mechanisms for coordination with the appropriate technology. For systematized modes of technology a formalized and programmed set of rules and procedures for discipline could be specified in advance of actual implementation. Since previous research has confirmed that successful firms using a systematized mode of technology are usually highly centralized, the philosophy of discipline for the total firm can also be centralized. A functional department at headquarters or corporate levels may produce the best mechanisms for coordination for the total firm. Once the basic philosophy of discipline is decided upon at the higher levels of management, then the actual practice of discipline at the supervisory level could be made consistent with that philosophy. In actuality, this consistency would be a function of built-in or programmed instructions for lower levels of management. Written procedures concerning discipline would
be necessitated by the accompanying large size of the self-
sufficient operating units within the firm and supported by a
heavy upward flow of communications. For work units which
correspond to the service of technology the philosophy of dis­
cipline could also be set at the headquarters or corporate
level. However, some degree of delegation could occur with­
in the moderate degree of centralization suggested by the
previous research. The size of the operating units may be
somewhat smaller than in the systematized mode and therefore
staff functions could possibly be located closer to the oper­
at­ing unit. These staff offices at the operating unit could
have some degree of latitude in deciding on the penalty and
the interpretation of the circumstances surrounding the in­
fraction. Discipline in the group mode could be basically
positive oriented and tend to emphasize the learning function
rather than the punitive. This follows from a more decen­
tralized organization, small operating units, and face-to-
face mechanisms for coordination within the operating units.

The managerial function of planning corresponds
closely to that of organizing. Since standing plans are com­
prised of policies, procedures, and rules, discipline is a
relevant issue for inclusion in the planning process. Not
only should the policies which relate to discipline be con­
tingent upon the characteristics of the environment in
which the organization is located, but also the specific sub­
systems within that organization should reflect a differ­
ential approach contingent upon the work-unit technology
existing within any subsystem. The coverage and focus of the standing plans concerning discipline would be the most likely area affected by the findings of the present research. For work-units which correspond to the systematized mode of technology, the practice and philosophy of discipline would be covered quite broadly. Dysfunctional behavior would be fairly well defined and communicated to the employee within the company handbook. Penalties for infractions would also be covered for most infractions. These standing plans would also be very specific in that both the infraction and the procedure would be highly detailed. The focus of planning as it regards discipline would be on how discipline is practiced rather than the intended results. On the other hand, in a group mode technology the coverage of discipline situations may not be as extensive as for the systematized mode. Also, the focus of those rules would more likely be designed to enable the work unit to achieve more broad-based objectives. Standing plans could be self-imposed by the work unit itself. There could be more of an emphasis on objectives rather than immediate goals. Finally, the end results or the teaching function of discipline could be stressed more within units corresponding to a group mode technology. Again the work units corresponding to the service mode would have plans concerning discipline comprised of characteristics of both the systematized and group modes.

Finally, the function of controlling individual behavior within organizations would be affected by a
contingency approach to discipline. Performance criteria in
the controlling function would more likely emphasize the con­
sistency of disciplinary actions in a systematized mode.
This consistency would be necessary to achieve the maximum
efficiency necessitated by capital intensive transformation
processes. The performance criteria emphasized in the group
mode would more likely be the results of disciplinary action
rather than its process of implementation. The service mode
would fall somewhere in between these two extremes as the
performance criteria would relate more to objectives of the
sub-unit. The character of the controlling process would
also be dependent upon the work-unit technology to which it
is applied. Following the generalized relationship of disci­
pline to work-unit technology and personal values the con­
trolling function would emphasize a more punitive approach
in the systematized mode and progressing toward a more posi­
tive style of discipline as the work-unit technology
increases in variability of work related stimuli.

In summary, the results of the present study support
the findings of previous authors who reported differences
which exist in organizations relative to the style of disci­
pline practiced by its first-line supervisors. Two vari­
ables were shown to have a significant relationship to the
practice of discipline--work-unit technology and personal
values. The results support a generalized relationship of
discipline to those variables. The practice of discipline
is contingent upon the overall effect of task-variability
and modified by the personal values of the first-line supervisors who must apply disciplinary action.
CHAPTER V

Implications for Future Research
and Summary

It seems inevitable that research leaves more questions unanswered than satisfactorily resolved. Such is the case with the present research. Some issues uncovered by the literature search could not be addressed within the framework of the present study. Other questions unanswered appeared as the results unfolded. The following paragraphs attempt to point out some directions for future research in the field of discipline. Second, a summary of the results and conclusions of the study completes the chapter.

The results of the present study beg the question: What happened to the positive styles of discipline? The results of the present study plus the comparison with a previous study yield the same conclusion--the distribution of disciplinary philosophies of first-line supervisors tends to be significantly skewed toward the legalistic end of the discipline continuum. The previous study surveyed a 166 first-line supervisors in the petrol-chemical and insurance industries. A legalistic-judicial philosophy of discipline was found to be the most prevalent within that sample drawn from a southern state. The present study surveyed 92 first-line supervisors in a midwestern state. Three manufacturers were included in the sample, one of which would be classified as being of the continuous process typology advocated by Woodward. A government agency and an independent government
agency were included in the present study. Responses from a national bank, an emergency wing of a large hospital, a design section of a computer service, and supervisors in a state university were also included in the present sample. Nowhere within the nine companies represented was there one individual who scored on the extreme pur humanitarian position of the discipline questionnaire. The findings from the two studies are overwhelming in their support of the conclusion that first-line supervisors in modern organizations continue to practice a punitive style of discipline. Where is the positive style of discipline in modern organizations? What conditions and characteristics are necessary for the positive style of discipline to emerge?

Are the measurement tools available to ascertain the most likely action a first-line supervisor would take when faced with discipline infraction? Are there any demonstrable results from the application of a positive style of discipline?

These questions are left unanswered, although the findings of the present study are highly statistically significant. Rather than assuming that positive styles of discipline are desirable, perhaps purposive samples of first-line supervisors should be drawn which seek out organizational settings where a positive style of discipline has been unsuccessfully implemented.

A question derived from the literature search concerned the relative effectiveness of a particular style of discipline in lowering absenteeism and turnover. Although
absenteeism and turnover rates were asked of the nine organizations included in the present study, most organizations did not have sufficient data or the data was not comparable from one organization to another. If the macro approach to matching environmental variables to the appropriate management structure is valid for the micro approach of matching sub-unit structure to its environment, then a mismatch between a style of discipline and the characteristics of the sub-unit itself should tend to increase beyond expected levels absenteeism and turnover rates. The need for a measure of effectiveness for a particular style of discipline and the characteristics of the sub-unit remains unfilled.

The present study collected data on the factors in the situation and the factors in the supervisor. A complete contingency theory of discipline would include also the factors in the subordinates. As research on leadership and motivation has amply demonstrated, the factors in the employees or workers in an organization have a strong influence on how the organization will achieve its stated objectives. Are subordinates willing to assume responsibility for self-discipline? Are they knowledgeable about the requirements for disciplinary action? Have they participated in disciplinary actions previously? What style of discipline do the subordinates themselves see as effective in their job situations? Do employees desire the responsibility of being self-disciplined or would they rather have the organization specify unacceptable behavior? These questions have never been
addressed empirically. It may be that the results of the present study reflect the first-line supervisor's perception of the style of discipline most preferred by employees in their work-units. A research study designed to encompass all three--factors in the situation, factors in the supervisor, and factors in the subordinates--could simultaneously ascertain the relative effects of each factor on the choice of a disciplinary style by a first-line supervisor.

Other questions which remain to be answered involve comparisons across many variables. For instance, could a wider disparity between regions produce significantly different results? Could rural backgrounds of first-line supervisors cause significantly different results on discipline when compared to supervisors with an urban background? How do cultural variables affect the choice of a disciplinary style? Do various economic systems demand different disciplinary actions for the same offense? These questions and many others are not resolved in the management literature. Research studies designed to deal with these questions would enable a more complete picture of discipline in the organizational setting and provide the theoretical framework for a practical contingency approach to discipline.

Summary of the Study

The main purpose of the present study was to examine discipline in the modern organizational setting and determine what effect certain variables had on the application
of discipline by first-line supervisors. A questionnaire was designed to elicit responses from first-line supervisors on their choice of the appropriate disciplinary action to be taken in each of four cases. The work-unit technology was determined by a set of scales designed to measure the task variability and task analyzability of the supervisors' job situation. The personal values of the first-line supervisors were obtained by the use of a commercially available management Values Inventory. Ninety-two first-line supervisors responded to the questionnaire. The results of the study are as follows:

\[ H_1: \] the distribution of scores on disciplinary action will be a normal one. The mean of the distribution will occur approximately half-way between the two extreme positions on the questionnaire—ignoring the infraction and discharging the employee.

**RESULTS:** the distribution of scores was found to be statistically different from a normal distribution. The mean of the distribution occurred considerably toward the legalistic end of the discipline continuum.

\[ H_2: \] there is no significant difference between philosophies of discipline held by supervisors in the three work-unit modes of technology.

**RESULTS:** there was a significant difference between philosophies of discipline held by supervisors in the three work-unit modes of technology beyond the .01 level of confidence.

\[ H_{2A}(1): \] the disciplinary philosophy in the system mode will be significantly more legalistic than the disciplinary philosophy of the service mode and the group mode.

**RESULTS:** the disciplinary philosophy in the system mode was found to be more legalistic than the service mode and the group mode beyond the .01 level of confidence.
H₂: the disciplinary philosophy of the service mode will be significantly more legalistic than the group mode but more humanitarian than the system mode.

RESULTS: the disciplinary philosophy of service mode was more legalistic than the group mode, but more humanitarian than the system mode at a .01 level of significance.

H₃: there is no significant difference between disciplinary philosophies held by supervisors according to their personal values.

RESULTS: all six value scales were found to be significantly related to the choice of a disciplinary philosophy beyond the .01 level of significance.

H₄: more legalistic progressing to more humanitarian philosophies of discipline will be exhibited by supervisors who scored the highest on the value scales in the following order:

1. Theoretical
2. Financial
3. Industry
4. Power
5. Achievement
6. Human

RESULTS: the actual order was:

1. Achievement
2. Power
3. Human
4. Industry
5. Theoretical
6. Financial

H₅: there is no significant relationship between the application of discipline and task-structure or personal values.

RESULTS: the relationship between the application of discipline and task-structure combined with personal values was found to be significant beyond a .01 level of significance.
All substantiative hypotheses were supported beyond the .01 level of statistical significance. Only the order of the value scales and discipline differed from the hypothesized direction. The conclusions and interpretations drawn from the above results support the postulation of a contingency approach to the application of discipline in the organizational setting. The choice of a disciplinary philosophy by first-line supervisors is dependent upon the work-unit technology and the supervisors' personal values.
SELECTED BIBLIOGRAPHY

A. Books


**B. Periodicals**


C. Other Materials


Reddin, W. J. Managerial Values Inventory, Organizational Tests, Ltd., Fredericton, New Brunswick, Canada, 1974.
APPENDIX A

COVER LETTER FOR QUESTIONNAIRE
Dear Supervisor:

Disciplining workers is one of the most challenging and difficult jobs which supervisors face. Your experience and attitude toward discipline are being sought in order to examine more objectively rules and their role in industry. Your response will enable me to ascertain the most prevalent disciplinary philosophy in industry and the effect task structure and values have on the application of discipline. The results will be included in my dissertation, a requirement for a Ph.D. at Louisiana State University.

The questionnaire consists of a biographical data sheet, four cases on discipline, two pages on task structure, and a managerial values inventory. In deciding your action on the cases, ignore your present organization's policy on the rule stated above each case as I would like your own reactions. Therefore, you may elect to consider the surrounding circumstances or not. Each section of the questionnaire has its own set of instructions for you to follow. Although this research has been approved by your company, your answers will be held in strict confidence, not available to your organization or supervisor.

After completing the questionnaire, please return it to me directly; do not send to your company officer. Also, feel free to write any additional comments you may have on the back of the data sheet. Although your response will be included with approximately one hundred others, each one is critical to the successful completion of this study. Please complete the questionnaire today if possible.

Thank you for your time and I look forward to receiving your response since this data means a great deal to me personally, as well as providing a significant contribution toward helping supervisors meet the challenges of their positions.

Sincerely,

David H. Hovey, Assistant Professor
Department of Management-Finance

jeh
Enclosure
APPENDIX B

BIOGRAPHICAL DATA SHEET
### BIOGRAPHICAL DATA SHEET

<table>
<thead>
<tr>
<th>Age</th>
<th>Sex</th>
</tr>
</thead>
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#### Education:
1. Vocational School
2. High School Degree
3. Attended College
   (Years completed ___)
4. College Degree
5. Graduate School (Years ___)
6. Masters Degree
7. Years Past Masters (___)
8. Other (Specify)

#### College Major, if applicable:
(General Business, Personnel, Engineering, etc.)

#### Area of Present Position:
(Personnel, General Administrative, Accounting, etc.)

#### Years Experience in Above Area ___

#### Total Years Working Experience ___

#### Title of Your Position:

#### Level of Position: (Circle one)
1. First-line Management
2. Middle Management
3. Top Management

#### Number of Employees Either Directly or Indirectly Under your Supervision ___

#### Number of Employees You Directly Discipline ___

#### Company ____________________________

#### Type of Industry: (Manufacturing, Service, etc.)
APPENDIX C

DISCIPLINARY STYLE QUESTIONNAIRE
DISCIPLINARY STYLE QUESTIONNAIRE

Company or Organization__________________________

INSTRUCTIONS: Please read the following cases and check the action you would take in each instance. Disregard your present company's policy as I wish to measure only individual responses. All responses are confidential and will not be available to anyone in your company.

"The unauthorized possession of company property is an offense which will result in the immediate discharge of the offending employee."

While taking inventory and matching the orders to repair invoices, it was found that Walker, one of the mechanics, was ordering more parts than were needed to fix the cars that he was repairing. After talking with Walker, the supervisor learned that the mechanic was taking the parts and using them to fix cars at his house, thus picking up a little extra money.

What would you do as supervisor?

____ Ignore the infraction this time
____ Informal oral warning
____ Oral warning which goes on employee's record
____ Written warning which goes on employee's record
____ Suspension with pay for remainder of day
____ Suspension with pay for longer than one day
____ Suspension without pay for longer than one day
____ Discharge employee
"Sleeping, reading, etc., during company
time is expressly prohibited. An employee
guilty of the above will be subject to a three
(3) day suspension for the first offense."

Reed had a history of minor violations during his three years of employment with the firm although he was a hard worker and the violations never amounted to enough to result in a formal disciplinary action. One day as he was waiting to pick up a crew of men out working, Reed became drowsy and fell asleep in the truck. This caused the work crew to call a man from the plant to come get them. Reed was discovered asleep about three miles from the work crew.

What would you do as supervisor?

_____ Ignore the infraction this time

_____ Informal orgal warning

_____ Oral warning which goes on employee's record

_____ Written warning which goes on employee's record

_____ Suspension with pay for remainder of day

_____ Suspension without pay for remainder of day

_____ Suspension without pay for period specified in rule

_____ Discharge employee

"Any employee found by his supervisor to be unfit for the performance of his duties as a result of excessive drinking of alcoholic beverages will be suspended for five (5) days for the first offense."

Lyons, one of the workmen in the telephone repair department, was building a house with the help of his friends. Many times Lyons would provide beer and drinks after they had finished working on the house. The department supervisor noticed that since the house had been started, Lyons' work had suffered due to the excessive amount of drinking he was doing in addition to the added physical labor. The supervisor had jokingly referred to the problem one time because he knew Lyons was a good worker and was not accustomed to drinking so much. However, one day Lyons could not climb a high power pole safely because the night before he had stayed up too late drinking.
What would you do as supervisor?

_____ Ignore the infraction this time
_____ Informal oral warning
_____ Oral warning which goes on employee's record
_____ Written warning which goes on employee's record
_____ Suspension with pay for remainder of day
_____ Suspension without pay for remainder of day
_____ Suspension with pay for period specified in rule
_____ Suspension without pay for period specified in rule
_____ Discharge employee

"Any employee guilty of disorderly conduct, including horseplay, fighting, etc., during working hours will be suspended for three (3) days for the first offense."

Davis and Williams, both machinists, worked in the same general area under one supervisor. Monday morning, about ten-thirty, Williams walked over to Davis and without saying a word, began hitting him. The supervisor learned in the interview that the two men had had a fight Saturday afternoon in a local bar. The fight had been broken up and seemingly forgotten, until Williams attacked Davis on Monday.

What would you do as supervisor about Williams?

_____ Ignore the infraction this time
_____ Informal oral warning
_____ Oral warning which goes on employee's record
_____ Written warning which goes on employee's record
_____ Suspension with pay for remainder of day
_____ Suspension without pay for remainder of day
_____ Suspension with pay for period specified in rule
_____ Suspension without pay for period specified in rule
_____ Discharge employee
APPENDIX D

TASK ANALYZABILITY QUESTIONNAIRE
QUESTIONNAIRE ON TASK ANALYZABILITY

Company or Organization ______________________________________

INSTRUCTIONS: Please place an X on the scales by each ques­tion according to the following guidelines:

0 = 0%, to no extent 7 = 70%, to a great extent
3 = 30%, to little extent 9 = 90%, to a very great extent
5 = 50%, to some extent

1. To what extent is there a clearly defined body
   of knowledge or subject matter which can guide
   you in doing your work?  
   
2. To what extent is there an understandable
   sequence of steps that can be followed in
   doing your work? 
   
3. During the course of your work, how often
   do you come across specific but difficult
   problems that you don't know how to solve, and
   you have to take some time to think them through
   by yourself or with others before you can take
   any action?  
   
4. In general, how much actual "thinking"
   and/or discussion time do you usually spend
   trying to solve such specific problems?  
   
5. If there is something that you don't know
   how to handle in your work, to what extent
   is it likely to be something that no one
   really knows much about?  
   
6. In some jobs things are fairly predictable.
   In others, you are often not sure what the out­
   come will be. What percent of the time would
   you say that you are generally sure what the
   results of your efforts will be? 
   
7. In terms of the major tasks you are assigned,
   to what extent does time pass before you know
   whether your work effort is successful?
APPENDIX E

TASK VARIABILITY QUESTIONNAIRE
QUESTIONNAIRE OF TASK VARIABILITY

Company or Organization ______________________________________

INSTRUCTIONS: Please place an X on the scales by questions 1-7 according to the following guidelines:

0 = 0%, to no extent 7 = 70%, to a great extent
3 = 30%, to little extent 9 = 90%, to a very great extent
5 = 50%, to some extent

1. How much variety in cases, claims, clients, or things do you generally encounter in your normal working day? 0 3 5 7 9

2. Regardless of the variety of cases, claims, or clients, to what extent are the activities or methods you follow in your work about the same for dealing with classes or categories of cases, claims, or clients? 0 3 5 7 9

3. Would you describe your work as being routine? 0 3 5 7 9

4. Do people in this unit do about the same job in the same way most of the time? 0 3 5 7 9

5. To what extent do unit members perform repetitive activities in performing their jobs? 0 3 5 7 9

6. Generally, how much do unit members have to adopt different methods or procedures in performing their jobs from day to day? 0 3 5 7 9

7. Are there different types or kinds of work to do every day in this job? 0 3 5 7 9
GLOSSARY

Achievement—denotes managers or individuals who are efficient, practical, and concerned with obtaining results.

Classical school—a school of management thought comprised of scientific management, management process, and bureaucratic schools of thought. The term encompasses most of the early writings in management and organization.

Clinical-humanitarian—a philosophy of discipline which emphasizes control through self-discipline.

Contingency theory—a broad term which is used to denote a wide range of theories in management and organization which contend that management practice depends on the best match of all relevant variables in any given situation.

Disciplinary action—the action taken by a supervisor in response to an infraction of specified company rules.

Discipline—in the context of this study, discipline refers to a state of order based upon submission to rules and authority.

Financial—describes an individual who indicates an interest in the power of money and in reward for effort and personal gain.

Group mode—describes a broad type of work-unit technology in which tasks are so highly variable that each case is novel and unique and output is a team product.

Human—refers to an individual who views man and his relationships in a humanitarian manner.

Industry—refers to an individual who likes the idea of work and sees it as an end in itself.

Judicial-clinical—denotes the midpoint on the philosophy of discipline continuum and specifies that the supervisor should evaluate certain aspects of the violation such as intent and degree.
Legalistic-judicial--a philosophy of discipline which is concerned with maintaining administrative effectiveness but retains the right for the supervisor to invoke the exception principle.

Management process--a school of management thought based on a deductive approach and prescribes certain principles of management for supervisors to follow.

Modern--a school of management thought which builds upon the Classical and Neo-classical schools to advocate that management and organization theory should consider the interrelationships that exist within systems.

Neoclassical--a school of management thought which emphasized the social relationships that exist within an organizational structure.

Philosophy of discipline--a phrase which refers to the system of rules and regulations within an organization and based upon management's view of the function of discipline. The five-point continuum of philosophies of discipline range from pure legalistic to pure humanitarian.

Power--refers to an individual who is interested in the utilization or implication and manifestations of power.

Pure humanitarian--a philosophy of discipline which emphasizes that control can be achieved through self- or social discipline.

Pure legalistic--refers to a philosophy of discipline which believes that standards are necessary for control and rules are used to give predictability and harmony to organizations.

Scientific management--a school of management thought based upon the writings' of Frederick Taylor and encouraged objectivism and scientific inquiry be applied to the practice of management.

Service mode--a work-unit technology which is usually labor intensive and output is a summation of the independent work unit members.
Supervisor—any individual in an organization immediately above the operative level.

System mode—a work-unit technology which is usually capital intensive and links a series of productive components into an interdependent processing system with a systematized program.

Task analyzability—a measure of the work-unit technology in an organization which assesses the extent to which the supervisor is placed in a job situation with varying degrees of organizationally prescribed actions which can be understood and predicted by that supervisor.

Task variability—a measure of work-unit technology which assesses the extent to which a supervisor faces, on a day-to-day basis, work-related stimuli which cannot be predicted.

Theoretical—refers to an individual who is interested in ordering and systematizing knowledge, likes to reason and think, and is rational and analytical.

Value system—a broad term which denotes a hierarchical arrangement or rank-ordering of values.

Values—an enduring belief that a specific mode of conduct or in-state of existence is personally and socially preferable to alternative modes of conduct or in-states of existence. The six values used in the present study are theoretical, power, achievement, human, industry, and financial.

Work-unit technology—refers to the transformation process that converts inputs to outputs within a work unit. The typology used in the present study contains three classifications—system mode, service mode, and group mode.
VITA

David Hiram Hovey, Jr., was born in Biloxi, Mississippi, on July 20, 1942. He graduated from Baton Rouge High School in 1960 and served two years in the United States Army. He received his Bachelor of Science degree in Psychology in 1967 and his Master of Science degree in Personnel Management in 1971 from Louisiana State University.

He is a member of the Academy of Management and the Small Business Institute Directors Association. He has taught at Louisiana State University and Indiana State University. He is currently serving as Acting Associate Dean of the School of Business at Indiana State University.
EXAMINATION AND THESIS REPORT

Candidate: David H. Hovey, Jr.

Major Field: Management

Title of Thesis: Disciplinary Philosophy of First-Line Supervisors
As A Function of Work-Unit Technology and Personal Values

Approved:

[Signatures of Major Professor and Chairman, Dean of the Graduate School]

EXAMINING COMMITTEE:

[Signatures of committee members]

Date of Examination:

September 15, 1978