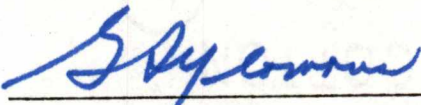
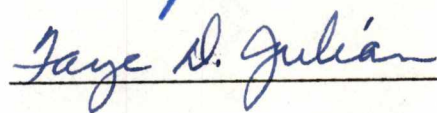


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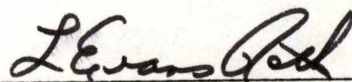
I am submitting herewith a thesis written by Peter Daniel Hobor entitled "Perceived Information Value and the Probability of Communication." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Speech and Theatre.


Robert S. Ambler, Major Professor

We have read this thesis and recommend its acceptance:

Accepted for the Council:


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Graduate Studies and Research

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PERCEIVED INFORMATION VALUE AND THE
PROBABILITY OF COMMUNICATION

A Thesis
Presented for the
Master of Arts
Degree
The University of Tennessee, Knoxville

Peter Daniel Hobor

March 1980

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ABSTRACT

This research thesis was a field study designed to investigate the relationship between perceived information value and the probability of communication in an organizational setting. There have been many authors who indicate the importance of this area but very little research has been conducted to date.

The setting for the study was a southeastern city's Utilities Board's Bureau of Power. A total of 130 subjects were questioned from this bureau. The major data collection instrument was a fourteen item questionnaire. This instrument was designed from information gathered in a series of interviews with the management of the Bureau.

Twelve hypotheses were generated for this study in an attempt to explore the relationship between perceived information value and communication. Organizational level, type of information, type of message, and source of information are the four other variables that were considered in this research. The research hypotheses related these four additional variables to the two major variables of the study.

Chi-square analysis, correlation analysis, and regression analysis were employed to test the hypotheses. Eight of the twelve hypotheses were confirmed by the results. The operational definition of information type was found to be unsound. This caused two of the hypotheses not to be supported.

The eight hypotheses that were supported showed that a relationship between perceived information value and communication does exist. This finding opens a new area of organizational communication for research and practical application. The regression analysis procedure used in the study indicated that a significant amount of the variance in communication could be predicted from the perceived information value. This finding demonstrates that the concept of perceived information value is a useful new aspect of communication that demands more research.

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CHAPTER I

REVIEW OF THE LITERATURE

Ever since they began to group themselves into tribes and families, humans increasingly have become more involved and dependent on organizations. Today, people are born, live, work, and die through the processes of various organizations. We are the "organization men" that Whyte describes (1956). Although some form of human organization has existed for thousands of years, it has only been recently that people have begun to develop theoretical descriptions of these structures.

The descriptions of organizations have changed with time, but some form of communication has always been involved in the theorizing. Taylor's classical view of organizational operations had a definite place for communication within the organization (1916, p. 19).

French writer Henri Fayol, a contemporary of Taylor's, also identified a place in the organization for communication. He suggested that a way to improve efficiency within an organization is to send orders directly to employees without having them travel through middle members of the organization (Fayol, trans. 1949, p. 26). This idea is still a viable concept today.

Despite attempts by other authors in the past, developing a clear definition of organizational structure is difficult at best. Littlejohn explores a number of definitions of organization with three common

characteristics—goals, hierarchical structure, and an integration of members (1978, p. 290). Other authors have discussed organizations as "contrived" social systems (Huseman, Lahiff, and Wells, 1974, p. 209). Combining these concepts to achieve a working definition, an organization may be considered as a fabricated hierarchical system attempting to achieve certain goals. This definition is based in systems theory which implies an interrelation and specialization of parts.

The general area of concern involved in this thesis is organizational communication. A definition of communication might aid in the clarity of the work. Some authors define this concept in such broad terms that nearly everything can be classified within it (Vardaman and Halterman, 1968, p. 3). Another view can be expressed that there can be no accurate definition of the term (Littlejohn, p. 23). Communication can be generally and simply defined as the flow of information in a situation. This definition can be used as a nexus with a more important concept for this thesis—information.

Information has been defined as the uncertainty in a situation (Weaver, 1949), perceivable energy flow (Miller, 1955), and internalized raw sensory data (Kefalas, 1977). Brock's Commodity Theory suggests that information can be considered a commodity with variations in usefulness and value (1968). His concepts are useful in defining information. Information will be considered the perceivable, intangible commodities present in a situation. This definition permits information to have the characteristics of any commodity described in Brock's theory.

One of the most important characteristics of a commodity that Brock describes is value. As a commodity, information has a value that not only changes as the situation alters but also affects how people react to and use that commodity. The major focus of this thesis is to determine whether a person's perception of information value will affect the probability of communicating that information.

The literature that will be surveyed here can be categorized into four main divisions: the characteristics of information, the acquisition of information, the usage of information, and the value of information. These divisions are not mutually exclusive and literature from one category may also seem appropriate to the discussion in another category. There will be five main sections to this first chapter. Each of the first four will deal with one of the categories listed above. The last section will discuss the implications of the literature and further explain the major direction of this work.

I. THE CHARACTERISTICS OF INFORMATION

Amount and Availability

A number of laboratory studies have investigated the relationship between information availability and communication. Shaw and Penrod concluded that more information available does not ensure the information possessor acceptance of an idea by other group members (1962). The data indicated that when one group member has more information than other members, the communication performances were moderately enhanced. When one member possessed a large amount of

exclusive information, the communication of the group was hindered (p. 377). Shaw conducted another study one year later focusing on possession of exclusive information. The results of this study closely match those of the work of Shaw and Penrod (Shaw, 1963, p. 77).

Availability of information may have an effect on the perceived value of information as Brock points out in his discussion of commodities (pp. 248-49). The research indicates that this variable does alter the communication of a group but it does not examine if the communicators perceive the exclusive information as having a different value from other information.

A later work by Murnigham adds another independent variable to the basic ideas of Shaw and Penrod but still does not consider the value of the information (1977). Not only did Murnigham vary the amount of exclusive information, but he also controlled the amount of communication between group members. The researcher concluded that as communication increased, exclusive information became less a factor in determining outcomes of the group.

This concern with information availability led to the development of a body of theory that attempts to quantify the information available. Information theory or the mathematical theory of communication is the major conceptual basis in this area (Shannon and Weaver, 1949; Weaver, 1949; and Broadbent and Darnell, 1965). Information is considered the amount of entropy in a situation. Bits are the basic unit to measure information. The number of times a person would need to halve the possible choices in the situation until there was no more

uncertainty is the number of bits of information necessary to reach a decision. While information is quantified by this theory, the value of any bit of information is not considered.

Channels Used for Transmission

The definition of communication presented earlier mentions the flow of information. This movement has to occur through some type of medium or channel. The means of transmitting information and the effects of transmission on that information has been the focus of a number of different studies.

An early study took a comparative look at five different transmitting methods (Dahle, 1954). Dahle was attempting to find relationships between methods of transmitting a piece of information and the amount and accuracy of information retention. The five channels used in the research were: oral only, written only, combined oral and written, bulletin board, and "grapevine" method. A combination of oral and written communication was found to be the most efficient method for transmitting information to employees. This study is important because of its early date and its implication that channel is a definite variable in communication.

Another consideration of channel efficiency was discussed by Brandon as he explored the problem of choosing the best method of communication (1976). The specific purpose of the communication is a factor that must be considered in advance by the organization before making major communication decisions. This work implied that

information type is a variable in determining the most effective channel of communication.

With advancements in technology, the five channels suggested by Dahle have been expanded. Telephone and radio messages (Hintz and Couch, 1978) and the broader field of telecommunications (Pye, 1976) have been studied. Goddard concluded that telephone communication is better for shorter unplanned messages and face-to-face meetings are more suited to planned longer interactions (1975). All three of these articles indicate that the ideas of Brandon were correct: no one channel is most efficient for all types of information.

The research that has been discussed in this area shows that there is a relationship between method of transmission and the characteristics of the information being sent. There is a deficiency in this area of research to consider the association between channels of communication and information value. It is possible that certain channels are perceived as carrying more valuable information or that certain channels are used to communicate what is considered valuable information.

The Structures of Organizations

Much of the research in this area does not directly deal with specific pieces of information as a main focus; however, the identification and charting of communication networks has a direct relation with the characteristics of information. There are a number of aspects of organizational structure that have been discussed with

regard to communication: the informal structure (Davis, 1977, 1978), the formal structure (Roberts and O'Reilly, 1978; Smith and Brown, 1964; and Harriman, 1974), barriers in the structures (Argyris, 1966; Duncan, 1972; and Roberts and O'Reilly, 1974), and structural influences on communication (Woodward, 1958).

The area of identifying barriers within the communication structures has been one of the most useful aspects of this area. Roberts and O'Reilly chart the actual flow of information within an organization and then identify the people and areas where barriers are likely to exist (1978). This type of structure may not closely parallel the organizational chart of formal communication and gives a more accurate picture of the real communication processes. Much of the work concerning barriers of communication has not explored the possibility that a person's perception of information value may be associated with the location of these trouble spots.

In an article on organizational theory, Joan Woodward describes an interrelationship between organization procedural structure and communication structure.

Communication systems cannot be good or bad in themselves; they are good only if they link people together in such a way as to further the objectives of the firm. Thus unit production requires a communication system which brings people together on a day-to-day operational basis; but in mass and process production such a system might well reduce efficiency. (p. 203)

Woodward was not primarily concerned with communication in the article, but she does recognize the importance of considering it a variable and not a constant. The structure of communication networks changes with

the type of organization, the type of information, and the addition and deletion of barriers.

While there is much more research on the structure of organizations and their communication networks, detailed discussion of the research is not needed at this time. It is sufficient to state that organizational structures create an environment for information to be formed, to exist, and to be processed.

II. THE ACQUISITION OF INFORMATION

The Need To Know

There seems always to have been the desire within man to find new knowledge. The organizational system presents a situation in which a number of types of information are in existence and must be acquired to complete a task. There is another aspect to consider—not all information is wanted by all organizational members. This "need to know" is an area of extensive research.

Not all theorizing is scientifically based in empirical research, and Maslow will be the first to admit that his 1963 article has many faults. The concepts presented in the paper do have some merit and are worthy of examination. Maslow views the human being as a creature attempting to reduce anxiety. Maslow indicates that certain kinds of information can reduce anxiety when learned and others can cause an increase. The individual determines the direction of the change; i.e., the same type of information will affect different people differently. This statement implies that different people will

perceive the same information with different amounts of desire to acquire that information.

Employee benefits are a specific type of information that Mathew Jewett believes members of an organization have a need to know (1976). What should be noted is that the author writes about a particular type of information that he believes is needed by employees and advantageous for the organization to disclose.

The last two authors discussed indicated that the type of information has a relationship with the need to know; however, Virginia Richmond examines types of people as a variable of the need to know (1977). Richmond studied the relationship between opinion leaders and information acquisition. Her findings indicated that in a situation when exposure to information is either voluntary or required, opinion leaders will acquire more information than non-opinion leaders (pp. 38-39). Richmond also noted that many opinion leaders only acquire larger amounts of information in the area of specialty. This would correspond to the ideas of Jewett and Maslow.

Employee acquisition of information was the major focus of the last two authors while "Double Loop Learning" is a system for the organization to acquire information (Argyris, 1977). Argyris' major thesis is that important information concerned with organizational procedures and efficiency is withheld from management causing decisions to be made with insufficient information. Argyris' plan is designed to encourage employees to report accurate information to management (p. 116). While this is not the only article that discusses the

organization's need to know, it does demonstrate that all members of an organization need to know some type of information.

Other authors have studied the question of the adequacy of the information employees possess with respect to their need to know (Funk and Becker, 1952; Odiorne, 1954; Taylor and Bowers, 1972; and Goldhaber et al., 1978). Using various methods for evaluating adequacy of information, researchers point out that the subjects' perception of what is relevant information should be used as a criterion to judge adequacy. This concept of relevant information is similar to the value of information; but the researchers do not seem to be concerned with how this relevant information is communicated.

Problems in the Acquisition of Information

There are basically three directions through which information can be acquired: upward, downward, and horizontal. An obstruction of any form along the lines of acquisition will cause the delay or termination of information. All three of these directions are considered by Argyris in his article, "Interpersonal Barriers to Decision Making" (1966).

Argyris studied the communication of the top executives of six large organizations. The findings indicated that lateral information sharing among the executives was hindered due to group norms and competition (p. 93). The executives reported that they thought they should be open with their opinions and feelings, but were not open because they felt the group viewed this as immature (p. 87).

Downward communication of information to subordinates was not always complete information. The facts about promotions, reasons for executive changes, most recent organizational charts, new developments, and development of overlapping departments were kept secret from subordinates (p. 92). Argyris offers no explanation why the information was withheld. He does mention that people tend to fill in the blanks when they do not have sufficient information.

In dealing with upward communication, Argyris describes the unwritten rules for presenting bad news to a superior. The superior does acquire information but in a distorted form that may not be of much help in effective decision making. Acquisition of distorted information may cause a failure to make further attempts to acquire more information.

Other authors have studied both upward and downward disclosure of information. Roberts and O'Reilly identify three possible reasons why subordinates do not disclose information to superiors: low trust in superiors, perceived great influence of superior on advancement of the employee, and the subordinate's high mobility aspirations (1974). Gary Gemmill's discussion of this subject is very similar:

It is a common observation that subordinates in their relationships with superiors often conceal and distort their real feelings, problems, opinions, and beliefs because they fear disclosure may lead superiors to punish them in some way. (1970, p. 107)

The problems with downward flow of information to employees have been the focus of many studies and articles. It would be impractical to review them all. Therefore a brief statement of the major problems

will be presented. As information passes down through the levels of the organization the original message is simplified, clarified, and distorted to the point where it might become a different message before it reaches its destination. Also, much information is not disclosed to employees for various reasons, many of which are based in superiors' incorrect perceptions of subordinates' needs and feelings. The problem of inaccurate perceptions from one level of an organization to another will be examined more closely in the fifth section of this chapter.

The source of the information might change a person's perception of the importance of that information. The converse of this might also be true: the perceived value of a piece of information might affect the direction in which it will be communicated. Neither of these considerations have been examined in past research but are worthy of study.

Improving Methods of Acquiring Information

There are as many different ideas of how to improve communication as there are authors writing on the subject. Of the many approaches, three plans that differ in technique and complexity will be discussed in this section.

Fred Allen (1975) and Bruce Harrimen (1974) describe similar approaches to acquire more information from their subordinates and provide more information for the subordinates. The systems call for group meetings, of employees with management, at different levels of

the organization. The meetings are designed for the purpose of eliciting information about feelings and problems from the employees and to provide information that the employees indicate they need.

Business Week reported on an organization that provides television viewing for its employees so that they can acquire organizational information (March 14, 1977). The system was not unique to this organization and the advantages and disadvantages of this method were discussed. The major advantage of this approach is that a large number of employees can be reached rather simply and regularly.

The third strategy involves the restructuring of the entire organization. Harvard Business Review's article "Participative Management at Work" presented a case study of a Michigan company that has established a structure that enhances employee disclosure. The causes of failure to disclose discussed earlier were eliminated when the company rewarded openness and innovation rather than punishing employees by eliminating jobs.

If there is a relationship between perceived information value and communication of that information, this association can be used as a basis of improving information acquisition. By knowing the variables that alter information value and how value modifies communication, a process could be developed to enhance needed communication by altering perceived information value.

III. THE USAGE OF INFORMATION

Decision Making

There is little controversy that information is necessary in decision making processes. The discussion in this paper on improving information acquisition indicated the need of management for accurate information for their decisions. The best reference to illustrate this point is Argyris' article (1977)—"Double Loop Learning." The article begins with a short illustration of an organization that decided to continue a line of products that was losing money. The decision was based on incomplete and inaccurate information. The system Argyris proposes is designed to use accurate information that employees possess but do not communicate with management. Effective and efficient decisions need to use accurate information in the formulation process.

Sources of Power

Information can be used to acquire power within an organization in a number of different ways. The most obvious method involves direct control of the flow of information. This "gatekeeping" process is the focus of many studies (Pettigrew, 1972; Roalman, 1972; and Francis, 1975). Many of the articles dealing with this power acquisition technique take the form of case studies that attempt to extract the characteristics of gatekeepers from the particular example being examined. Pettigrew focuses on a middle manager in a Scotland manufacturing firm. The author identifies the traits of being located

in a key communication passageway and having the skill to use information effectively. He clearly states the essence of the matter.

Power resources [information] must not only be possessed by an actor, they must also be controlled by him. . . . "it is immaterial who owns the gun and is licensed to carry it; the question is, who has his finger on the trigger?" Control, however, may not be enough; there is also the issue of the skillful use of resource. The most effective strategy may not always be to pull the trigger. (p. 189)

Roalman agrees with Pettigrew's characteristics but also adds an evaluative statement regarding gatekeeping. Roalman believes that the effective and good manager is the person who does not use a potential gatekeeping position to gain personal power (p. 3). Throughout the research in this area, it is implied that information which can be used to obtain power is valued by some members of the organization. No power will be acquired by controlling information that is not needed or valued.

Another technique to obtain power through the control of information flow is the partial control of necessary information by people who are not in a position to control the entire flow of information (Mechanic, 1962; and Salancik and Pfeffer, 1974). This method is more practical for lower level members of the structure. Mechanic discusses a variety of approaches that organization members use to increase power. One of these techniques is the control of certain types of information (p. 591). This manipulation of information to acquire power is also mentioned by Salancik and Pfeffer as the

control of "critical or scarce resources" (p. 70). A production worker in a factory who knows why employees are dissatisfied can reveal this information to superiors to gain a limited amount of power with management. Usually this type of power exists for only a short period of time.

The power that accompanies being an "expert" in a particular field can be thought of as power through the use of information (Mills, 1956; French and Raven, 1959; and Bachman, Bowers, and Marcus, 1968). This type of authority has a much more secure base than do the first two methods discussed. In 1959, French and Raven attempted to develop a system for identifying bases of social power. The categories that they developed have been used by many later writers and researchers. Of the five sources of power proposed—expert, reward, coercive, legitimate, and referent—expert power has its basis in the possession and use of information (p. 156). The expert or specialist in a particular area has power in affairs that deal with that area. There also can be a "halo effect" when power obtained through expertise in one field is transferred to a similar field (p. 164).

One member of an organization might be considered knowledgeable in one area. While this person has no formal power to make decisions in this area, people who do make the decisions come to this expert for advice. Without having direct power, the expert's advice will influence the decisions and gain the knowledgeable person informal power in this area of knowledge. If the expert is also asked for advice in similar areas, the limits of the informal power can be expanded through a halo effect.

The last method for the use of information to gain power is the use of specific pieces of information to cue behavior in persons and organizational divisions (Pondy, 1970, 1977). Pondy recognizes that control of scarce resources can lead to power but states that this method is not the most effective way to obtain long-range power (1977, p. 74). The major concepts of the paper deal with preprogramming responses in people or systems and then activating these responses through the use of certain information as stimuli. If a manager can indoctrinate subordinates with the belief that production schedules must always be kept, that manager can gain access to power over subordinates' production by informing the employees how their behavior relates to the schedule. The catalyst information creates power for the manager because the basis of the power was preprogrammed into the employees with the belief that production schedules must be kept. Out of all the methods presented here, Pondy's system depends most heavily on the use of information to acquire power. In this technique, the cue information becomes more valuable by the process of preprogramming.

IV. INFORMATION VALUE

Many of the sections already discussed in this chapter have hinted at some of the reasons for and variables of information value. The suggestion that information has a variable characteristic of value is present in much organizational literature but very little research or writing has been done to extensively explore this area.

A definition of information value needs to be developed here to ensure the maximum clarity for the reader. A quick examination of Brock's Commodity Theory will help to form a foundation for the concept of information value.

Brock defines a commodity as ". . . anything which has usefulness to the possessor and which can be conveyed from person to person" (1968, p. 246). There is very little difficulty exchanging information with "anything" found in Brock's definition and indeed Brock does imply that information is a commodity just as are tangible items. As a commodity, information has value to the possessor that will vary with a number of factors that Brock discusses. The factors that are described are situational indicating that identical information can have two completely different values as the environment changes. Brock's work has helped reach the point where the statement can be made that information value is the usefulness of a piece of information dependent on situational variables. This definition, however, needs a bit more examination.

Lee Thayer (1968) discusses information value and adds another idea to the ones derived through Brock.

The message which an originator transmits to another may have some particular informational value to the originator. But the crucial factor is the informational value that same message has for the receiver. (p. 190)

This idea that information value must be considered from at least two perspectives is vital and needs to be included in the definition of information value.

A combination of these two considerations produces: information value—the perceived usefulness of a piece of information, dependent on situational variables, to an actual or potential possessor. With this definition in mind, some of the literature that makes direct reference to information value will be examined.

J. Hinrichs conducted an extensive study of the communication patterns in a large organization (1964). The method of research used was a checklist questionnaire to be filled out by employees at regular time intervals to report on the communication activities taking place at that exact time. One of the items on the questionnaires asked the employees' feeling concerning the importance of the communication taking place. In all the reporting on the findings, this item was never mentioned after the description of the questionnaire. The results from this item were not reported.

Some of the concepts found in Argyris' article on double loop learning, discussed earlier in this chapter, can help to illustrate the perception of usefulness. While establishing the problem of inadequate upward communication in organizations, Argyris indicated that accurate information is more useful than inaccurate information in making effective, efficient, and realistic decisions. This should help strengthen the definition of information value since it implies that one type of information, accurate, is more valuable in this situation than inaccurate information.

A. C. Miller explores another aspect of information value in discussing the idea that information can be sequential: one piece of

information in the sequence will decrease the usefulness, i.e., value, of the remaining information.

The need for more study in the area of information value is clear. Many authors indicate or imply that this concept is important to communication yet very little research has been conducted in this area. The question now becomes a matter of what aspect of information value to focus upon.

V. IMPLICATIONS FOR RESEARCH

The major aspect of information value that needs to be researched at this time is the confirmation that an association between information value and communication does indeed exist in the real world. Researchers and authors indicate that some type of relation is present, but there has been no work to date to verify this relationship. This verification is the major direction of this thesis and can be stated as a research question.

Is there an association between perceived information value and the probability of communication?

An examination of the definition of information value established earlier in this chapter will reveal other considerations of this research. Information value is the perceived usefulness of a piece of information, dependent on situational variables, to an actual or potential possessor.

First consider the idea of actual or potential possessor of a piece of information. Going back to the basics of speech communication,

the actual possessor of information can be termed the sender of a message and the potential possessor, the receiver. This can be placed in the context of an organization. It now must be noted that the majority of organizational communication is vertical. This implies that the sender and receiver are often located on different organizational levels. One of the variables of information value that will be considered in this work will be organizational level.

Perceived usefulness now takes on a new dimension as it is integrated with a consideration for hierarchical structure. There are indications that perceptions change as the position in the organization alters. Research has examined perceptual differences ranging from those between police and students (Goldhaber et al., 1972) to those found between superiors and subordinates (Likert, 1961; Argyris, 1966; Mazza, 1976; and Herold, 1977). All of these, and many other, research reports have found significant differences in the perceptions of different groups on the same issue. The most useful of these for this study are those dealing with the different levels of an organization. If these studies can be used as indicators, it seems possible that there will be differences in perceived information value at different levels of an organization.

The source of information may have a relationship with the perceived value of a piece of information. During the discussion of acquisition problems, this variable was considered in relation with past research. Another of the situational variables that will be considered in this work is the source of the information.

The last part of the definition of information value that will be analyzed deals with "a piece of information." The term "piece" is vague in nature and needs to be more narrowly defined to complete the focus of this research. During earlier discussion in this chapter, the supposition was mentioned that information type can affect communication. Redding (1964) describes three functions of information that are present in any organization: task, maintenance, and human. Information that can be classified as task is directly related to completion of the prime purpose of the organization. Information that has a main use to maintain the organization as a system is maintenance in function. The last function is termed human and this type of information fulfills the personal needs of the organization's members (p. 43). For this study, task and maintenance information will be considered as levels of the variable—information type. While the use of human information appears interesting, there is a difficulty in developing statements that have a human function while being mutually exclusive of the other types of information and still relevant to the research organization.

The major research question has been stated earlier in this section but there are a number of other secondary questions that will also be considered in this study.

1. Is there an association between organizational level and perceived information value?
2. Is there an association between the type of information and perceived information value?

3. Is there an association between the source of information and perceived information value?
4. Is there an association between organizational level and the communication of information?
5. Is there an association between the type of information and the communication of information?
6. Is there an association between the source of information and the communication of information?

These six research questions, along with the primary research question, can be translated into simple research hypotheses which will aid in the interpretation of the data.

- H1: There is an association between perceived information value and the communication of that information.
- H2: There is an association between organizational level and perceived information value.
- H3: There is an association between the type of information and perceived information value.
- H4: There is an association between the source of information and perceived information value.
- H5: There is an association between organizational level and the communication of information.
- H6: There is an association between the type of information and the communication of information.
- H7: There is an association between the source of information and the communication of information.

The literature that has been examined in this chapter has indicated the need for research in the area of information value and its relationship with communication. The research questions and hypotheses that have been presented show the focus of this work. The next chapter will present the research design, procedures, and setting that will be used to obtain data in an attempt to find answers to these questions.

CHAPTER II

METHODS AND PROCEDURES

The first chapter of this work surveyed the past research and writings in the area of communication that were related to information value. This second chapter describes: (1) the research setting and subjects, (2) the methods of data collection, (3) operational definitions of the variables and (4) the statistical analyses applied.

I. RESEARCH SETTING AND SUBJECTS

The concept information value, as defined in Chapter I, suggests that the subjects to be used in any research project in this area must be members of a group or organization interested in accomplishing a goal. This consideration implies the use of a field study rather than a laboratory experiment. Nachmias and Nachmias (1976) suggest that a lab experiment provides for more control whereas the field study furnishes a more natural setting for observations. Since no major manipulation of independent variables is to occur in this study, the field situation provides an environment where natural occurrences can be observed. The major focus of this research project is the verification of the association between information value and communication. This can best be accomplished in a field situation.

While considering different organizations to use as possible locations for this study, a number of factors had to be kept in mind.

The setting for this research must provide a situation where the subjects are located on a number of different organizational levels, working toward the same goal, have access to similar information, and of a large enough sample size. A southeastern city's Utilities Board's Bureau of Power was selected for use as the organizational setting. The Bureau's structure provided six departments of varying sizes and functions to draw upon for a subject pool. The largest of these departments, the line department, was selected for use in the study.

Every member of this department is concerned with the installation, repair, or maintenance of the power lines and poles of the city. This is the common goal that is necessary in the research setting. There are five different job positions in the line department that can be categorized into two organizational levels—supervisory and nonsupervisory. This fulfills another requirement of the setting. There are a total of 165 members of this section of the Bureau. The actual sample turned out to be 130, 31 supervisory and 93 nonsupervisory. Because the questionnaire can be divided into four parallel sections, this sample yields 520 possible responses. The last requirement of access to similar information is satisfied in this setting for all the employees have access to bulletin boards, department meetings, and normal oral and written communication.

The members of this department ranged in age from eighteen to early sixties. Educational background varied from graduate degrees to less than high school completion. If the line department is considered a separate organization, the entire membership was the

subject pool. Approximately one third of the people employed at the Bureau work in the line department and were possible subjects for this research.

There are two major problems that must be noted concerning the subject population and sample. With the Bureau of Power as the organization, the use of the line department as a subject pool is not a random sample and may not accurately represent the entire organization. For this reason, the organization used as the research setting will be defined as only the line department. The rest of the Bureau will be considered part of the environment. The second difficulty with the sample is that all of the subjects were male. This fact greatly limits the external validity of this research but does not change the internal validity within the defined organization.

With the setting and subjects for this study established, the next aspect to be discussed is the methodology employed for collecting the data.

II. METHODS OF DATA COLLECTION

A number of different data collection methods helped to obtain all the data compiled during this study. The major instrument used was a 14 item questionnaire. There were preliminary interviews conducted with the heads of the different departments of the Bureau and with the management of the line department before attempting to design the questionnaire.

The first series of interviews were held to determine the internal structures, number of employees, types of jobs, and relationships with other departments for each of the six departments. A series of open ended questions were asked during these interviews. The department heads had the freedom to discuss any tangent they so desired. A list of the basic questions used can be found in Appendix A. These initial discussions indicated that the line department was perhaps the best suited section of the Bureau to use as a subject pool. Many of the other departments were either too small in membership or the members were so diversified in job goal or location that they did not have access to similar information.

The next series of interviews concentrated on the personnel of the line department to acquire specific information to be used in the designing of the questionnaire. The same open ended format was employed in these discussions as was used for the first series of interviews. A more detailed description of the communication structure of the line department was needed to discover typical types of messages and channels. Appendix A contains a list of the major discussion questions for these interviews.

The first item of the questionnaire deals with the position of the subjects in the line department. A copy of the entire questionnaire is contained within Appendix A. The five categories used for this item were arrived upon through the responses received during the second series of interviews.

The next twelve items on this instrument can be grouped into four sections of three questions each. Each one of these groups focuses on a different type of communication message. Items two through four deal with a change in rules. A problem in completing a job is the focus of the next three items. The third group of items is concerned with a personnel change. The last group deals with an explanation for why a job is being done. These four messages can be further categorized into the two types of information mentioned in the last section of Chapter I. Items that focus on changes in the rules or personnel changes can both be considered as having a maintenance function as described by Redding (1964). The other two messages, a problem in completing a job and the explanation for why a job is being done, have a task function. Both the type of message and the larger grouping of information type are important for the statistical analysis of the data.

Each of the three questions for the four message groups is concerned with a different variable that was outlined as a consideration of this study in the last section of Chapter I. Items two, five, eight, and eleven focus on the perceived value of the different messages involved. The source of the messages is the focus of those questions numbered three, six, nine, and twelve. The last question in each message group asks the subjects to report how often they communicated this type of message to other employees. The final item on the questionnaire was an open ended question designed to give the subjects an opportunity to indicate any problems in the line department

that the questionnaire did not consider and that they felt were important.

Those items that asked the respondent to rate the value of certain types of information were followed by a seven point scale ranging from "very valuable" to "no value." The directions for the questionnaire asked the subjects to consider value as how useful that kind of information is for you at work. These directions parallel the definition of information value developed in this study. Since perceived information value is the concept to consider and not actual information value, the self report responses to this question can be considered as a representation of this concept.

The interviews with the management of the line department indicated that the majority of the communication within the department was either oral or written originating from a very specific source. The three general directions of communication were considered for the responses to the items that focus on the source of the information. The fourth response option of "other sources" was included to make the list of responses exhaustive.

The final questions in each message group have possible responses ranging from "never" communicated to "always" communicated. This five-point scale, like the seven-point scale used for value, will be considered interval level data during part of the statistical analysis.

Once this instrument was designed, the process of administration of the survey had to be developed with the management of the line department. The length of the questionnaire was kept short because

the initial interviews had revealed that the shorter the time necessary to complete the survey, the easier it would be to have the management approve the instrument. Since it was not practical to assemble the entire membership of the department for one meeting, the members were grouped into four sections using work crew assignments as a criterion. One group of the four was assembled before leaving for their job assignments each morning for four consecutive days. Since the criterion of work groups was used to create these larger groups, there was little opportunity for the larger groups to interact and discuss the questionnaire, thereby distorting the results.

Each questionnaire was contained within an envelope along with a pencil and an informed consent cover sheet. This informed consent sheet asked the respondents not to identify themselves on the questionnaire and to ask any questions they wanted concerning the instrument. A copy of this cover sheet is contained in Appendix A along with the questionnaire.

The questionnaires were distributed and collected by the researcher with the help of the training supervisor of the line department. Any questions that the membership asked were answered by the researcher. The questionnaires were placed back into the envelopes for collection to assure anonymity. The questionnaires were coded following collection for identification of the day administered and the number of respondents that day.

All the variables of concern in this study have been discussed with relation to the items on the questionnaire that deal with each

variable. The next section will provide operational definitions of the value levels for each variable.

III. DEFINITION OF VARIABLES

There are five variables that will be considered in this study: organizational level, information value, source of information, type of information, and probability of communication. The analysis of the data collected will be based on the definitions developed in this section.

As mentioned earlier in this work, there are two levels to the variable of organizational level. The first item on the questionnaire has five possible responses: supervisor, foreman, driver, journeyman, and lineman. These five possible answers can be categorized into supervisory and nonsupervisory levels. The response of supervisor for item one is clearly a job position that is supervisory in character. This position involves the assignment of tasks, checking work, and responsibility for the work of subordinates. The job position of foreman has similar characteristics as those just described. A response of either of these two possibilities will be considered a supervisory organizational level. The other three responses can be grouped together to form the category of nonsupervisory organizational level.

A conceptual definition of information value was developed in Chapter I and was used as a basis for selecting the variable of this study. The questions on the survey instrument that focus on information

value include possible responses on a seven-point scale ranging from a "very valuable" score of seven to a "no value" score of one. During the statistical analysis of the data, this variable will consist of seven value levels. The reason that the responses are to remain in the seven level form for analysis is to allow for the maximum amount of difference in the responses.

Information can be acquired from three major directions: downward, upward, and horizontal. The first three possible responses available for the items that deal with the source of information focus on these three directions. The first response indicates that the information message being considered is usually received from a "boss or supervisor." This response implies that the information is traveling in a downward direction from a supervisor to a subordinate. An upward flow of information is implied in the third response indicating that the information was acquired from "the people you supervise" or from subordinate to superior. The second possible answer is an attempt to provide a response choice that represents horizontal communication. "Fellow workers" in the line department are usually on the same organizational level and therefore communication with these people is usually horizontal. The last response, "other sources," is a vague category included to make the list of possible sources exhaustive. This last answer also serves the purpose of a check on the other three categories. If a large number of responses are for "other sources," the indication would be that the three directions considered do not represent the major sources of information in the line department and

that the data collected for this variable may not be that useful for analysis.

The four messages used in the formation of the questionnaire represent two types of information. Task information deals with the primary purpose of the organization. Problems in completing a job and why a job is being done are the two messages that will be classified as task information. The items on the survey that deal with these messages are five through seven and eleven through thirteen. The other two messages focus on changes in the rules and personnel changes. These two messages can be considered maintenance in function because they are primarily concerned with continuation of the organization as a system. Items two through four and eight through ten are questions that deal with maintenance type information. The analysis of the data will first evaluate the responses in the form of information type—task or maintenance. The next process will separate the data into message types as a check to determine if the groupings of messages do indeed represent the same type of information.

The last variable that is to be defined in this section is the probability of communicating information. As with information value, the scale that appears on the questionnaire indicates the value levels to be used in the statistical analysis of the data. These five levels range from "always" communicated to "never" communicated.

The last section of this chapter will present the statistical procedures to be used along with an explanation as to how these procedures relate to the research hypotheses.

IV. STATISTICAL ANALYSES

Figure 2-1 is a flowchart that shows the steps that were taken in the statistical analyses of the data. Brief descriptions of these procedures will follow the chart to further elaborate on the specifics of each process.

The first step of the statistical procedures followed for this research provided a clearer picture of the data collected. The mean, mode, and standard deviation were calculated for the variable when appropriate. The mean and standard deviation for the variables of organizational level would not be meaningful.

There is a possibility that some of the situational variables included in this design are redundant or insignificant. The results from steps two and three revealed the variables that were unnecessary to consider for the regression process. Any variable that did not have a significant relationship with the dependent variable for the regression procedure, i.e., the probability of communication, was not considered in the calculations.

A series of two way and three way distribution tables were calculated for step 2. Chi-square values were determined for each comparison to evaluate the significance of the association. This chi-square value was used to test those hypotheses that include variables on a nominal level—hypotheses three, four, six, and seven. The tables that were produced to test these four hypotheses are information type with information value and then with probability

Step 1

Descriptive statistics were calculated to determine the basic disposition of the data.

Step 2

Multivariate frequency distributions were calculated for a number of variable groups. Chi-square was calculated for each variable group to determine which of the relationships were significant.

Step 3

Correlation coefficients were determined for the variable pairs that were measured on an ordinal level or above. This step along with step 2 are directly related to the research hypotheses.

Step 4

A multiple regression procedures was employed to develop a further understanding of the relationship among the variables.

Figure 2-1. Functional Steps in Analyzing the Data.

of communication, source of information with information value and then probability of communication.

The other tables generated were used to determine what variables to include in the regression process. Organizational level was compared with information value and message type in a $2 \times 7 \times 4$ table. Similarly, the level was compared with probability of communication and message type in a $2 \times 5 \times 4$ table. Message type was included in these tables as a check on the information type concept that was operationalized in the questionnaire. Both the message and information type were compared with source of information, information value, and probability of communication. The last table that was constructed compared information value with the probability of communication to view the distribution of responses.

The chi-squared values discussed above were used to test four of the research hypotheses. The remaining three hypotheses were tested by calculating correlation coefficients for the pairs of variables. Hypotheses two and five focus on the relation of organizational level with information value and probability of communication. The data collected for these three variables is at least on an ordinal level of measurement; therefore Kendall's tau and Spearman rho values were determined. Both the variables in hypothesis 1 were measured on an interval level consequently a Pearson r was calculated. These coefficients were also used to help determine the variables to be used in the regression process of the last step of the statistical analysis.

Regression analysis calls for variables that are measured on an interval level or above. There is, however, a procedure that will permit the use of nominal or ordinal variables to be included in the process if the dependent variable is on an interval level. The dependent variable that was considered in this step was probability of communication. The first independent variable to be included in the process was information value which was indicated as the major concern of this study. The organizational level was also included as an independent variable. The second step of the statistical procedures revealed that the source of information had no significant relationship with the dependent variable and was therefore omitted from this step.

The type of message was found to have a significant relationship to communication greater than that of information type. For this reason, four additional regression formulas were generated using the same variables as in the first process but this time controlling for message type. These five regression procedures provided a more detailed description of the relationship among the variables. The ability to predict communication or information value from the variables considered in this study is a useful extension of the research questions discussed in Chapter I. The results of these statistical procedures are reported in the next chapter of this work.

CHAPTER III

RESULTS

The structure of this chapter parallels the statistical analysis steps presented in the last chapter. The results that are directly related to the research hypotheses are presented along with those hypotheses in this chapter.

I. DESCRIPTIVE STATISTICS

The results of this step in the analysis procedure have no direct connection with the research hypotheses but they give a general picture of the disposition of the data. The first values that were determined were the mode, mean, and standard deviation for perceived information value and probability of communication. Table 3-1 contains these results along with the mode for source of information. For both these variables, supervisors were the source of information over 50 percent of the time. This would indicate that the majority of the communication has a downward direction.

The next aspect of this step examined the above mentioned three variables, controlling for message type. There are four types of messages that were used in this study. They correspond to the four question groups on the questionnaire discussed in Chapter II. The first message focuses on a change in the rules for handling equipment, henceforth to be referred to as rules information. A problem in completing a job or problem information is the second message type.

TABLE 3-1
DESCRIPTIVE STATISTICS FOR INFORMATION VALUE,
PROBABILITY OF COMMUNICATION, AND SOURCE

VARIABLE	MODE	MEAN	STD DEV
Perceived Information Value	7-55%	5.52	2.12
Probability of Communication	4-43%	3.73	1.16
Source of Information	1=Supervisor - 52%		

The third message deals with personnel change information and the last message type is concerned with why a job is being done. This last message type will be referred to as explanatory information. The findings of this second aspect are located in Table 3-2.

It is interesting to note from Table 3-2 that the value of personnel change information has the lowest mean and the highest standard deviation. Communicating explanatory information has the lowest mean and the highest standard deviation. These results also indicated that the combination of message types as an operational definition of information type is inaccurate. Theoretically the mean and standard deviation for rules information should be most similar to the mean and standard deviation of personnel change information. This is not true for the means or standard deviations presented in the chart. A similar comparison was made of problem information and explanatory information. Similar results were discovered.

The last aspect of Table 3-2 that was noticed concerns the source of the different messages. Only personnel change information had a mode coming from fellow workers or a horizontal direction. Personnel change information was found to be different than the other three message types in other statistical analyses.

II. MULTIVARIATE FREQUENCY DISTRIBUTIONS

This step in the statistical analyses was primarily concerned with testing four of the research hypotheses. Those hypotheses are:

TABLE 3-2
DESCRIPTIVE STATISTICS FOR INFORMATION VALUE,
PROBABILITY OF COMMUNICATION, AND SOURCE
CONTROLLING FOR MESSAGE TYPE

VARIABLE	MODE	MEAN	STD DEV
Value of Rules Information	7-64%	5.64	2.15
Value of Problem Information	7-60%	5.83	1.86
Value of Personnel Change Information	7-50%	5.19	2.32
Value of Explanatory Information	7-45%	5.42	2.08
Probability of Communicating Rules Information	4-42%	3.98	1.12
Probability of Communicating Problem Information	4-46%	3.89	1.13
Probability of Communicating Personnel Change Information	4-48%	3.62	1.14
Probability of Communicating Explanatory Information	4-39%	3.42	1.16
Source of Rules Information	1=Supervisor - 68%		
Source of Problem Information	1=Supervisor - 57%		
Source of Personnel Change Information	2=Fellow Workers - 57%		
Source of Explanatory Information	1=Supervisor - 58%		

- H3: There is an association between the type of information and perceived information value.
- H4: There is an association between the source of information and perceived information value.
- H6: There is an association between the type of information and the communication of information.
- H7: There is an association between source of information and the communication of information.

The data from Table 3-2 indicates that message type also should be considered along with information type. Table 3-3 lists the results of distributions calculated between perceived information value and four situational variables. The same situational variables are compared with the probability of communication in Table 3-4. Chi-square values are presented to determine the significance of the relationships. All the relationships in Table 3-3 appear to be significant at $p < 0.05$. The relations between probability of communication with organization level and type of message are significant at $p < 0.01$.

The reason that the significance of the relationships in Table 3-3 is in question is due to the variable levels of information value. Many of the cells of the distributions contained very few responses. Therefore, the levels of information were condensed to form only two levels—"low value" and "very valuable." Table 3-5 shows the same variable pairs as Table 3-3 but this time using the condensed information value levels for the calculations. Tables 3-4 and 3-5 reveal that H3 and H6 were not supported by the data. H4 was supported at the

TABLE 3-3

SUMMARY OF CHI-SQUARE ANALYSIS COMPARING INFORMATION
VALUE WITH SITUATIONAL VARIABLES

VARIABLE	χ^2	d.f.	p
Organizational Level	28.0	6	0.0001
Type of Information	13.58	6	0.035
Type of Message	33.19	18	0.016
Source of Information	42.49	18	0.0009

TABLE 3-4

SUMMARY OF CHI-SQUARE ANALYSIS COMPARING PROBABILITY
OF COMMUNICATION WITH SITUATIONAL VARIABLES

VARIABLE	χ^2	d.f.	p
Organizational Level	39.57	4	0.0
Type of Information	6.96	4	0.138
Type of Message	37.72	12	0.0002
Source of Information	7.99	4	0.091

$p < 0.05$ level. The source of information was not found to have a significant relationship with communication; therefore, H7 was not supported.

TABLE 3-5
SUMMARY OF CHI-SQUARE ANALYSIS COMPARING CONDENSED
INFORMATION VALUE WITH SITUATIONAL VARIABLES

VARIABLE	χ^2	d.f.	p
Organizational Level	25.09	2	0.0
Type of Information	0.96	2	0.617
Type of Message	8.52	4	0.074
Source of Information	5.17	1	0.023

When message type was substituted for information type, a significant relationship was found with communication at the $p < 0.01$ level and the relationship approaches significance with information value ($p < 0.07$).

Further analysis was conducted during this step to gain a greater understanding of the interaction of the variables, a consideration that was left out of the hypotheses. Table 3-6 through 3-12 contain the results of these additional distributions. All of the tables control for message type by separating one of the variables into four levels that parallel the four messages.

Organizational level was compared with the probability of communication and information value in Tables 3-4 and 3-5. Both the

TABLE 3-6

SUMMARY OF CHI-SQUARE ANALYSIS COMPARING ORGANIZATIONAL
LEVEL WITH PROBABILITY OF COMMUNICATION
CONTROLLING FOR MESSAGE TYPE

VARIABLE	χ^2	d.f.	p
Probability of Communicating Rules Information	37.22	4	0.0
Probability of Communicating Problem Information	10.05	4	0.04
Probability of Communicating Personnel Change Information	0.87	4	0.929
Probability of Communicating Explanatory Information	12.35	4	0.015

TABLE 3-7

SUMMARY OF CHI-SQUARE ANALYSIS COMPARING ORGANIZATIONAL
LEVEL WITH INFORMATION VALUE CONTROLLING
FOR MESSAGE TYPE

VARIABLE	χ^2	d.f.	p
Value of Rules Information	6.80	2	0.033
Value of Problem Information	11.43	2	0.003
Value of Personnel Change Information	3.97	2	0.137
Value of Explanatory Information	10.99	2	0.004

TABLE 3-8

SUMMARY OF CHI-SQUARE ANALYSIS COMPARING ORGANIZATIONAL
LEVEL WITH CONDENSED INFORMATION VALUE CONTROLLING
FOR MESSAGE TYPE

VARIABLE	χ^2	d.f.	p
Value of Rules Information	6.80	2	0.033
Value of Problem Information	11.43	2	0.003
Value of Personnel Change Information	3.97	2	0.137
Value of Explanatory Information	10.99	2	0.004

TABLE 3-9

SUMMARY OF CHI-SQUARE ANALYSIS COMPARING ORGANIZATIONAL
LEVEL WITH SOURCE OF INFORMATION CONTROLLING
FOR MESSAGE TYPE

VARIABLE	χ^2	d.f.	p
Probability of Communicating Rules Information	17.94	4	0.001
Probability of Communicating Problem Information	1.80	4	0.773
Probability of Communicating Personel Change Information	1.29	4	0.863
Probability of Communicating Explanatory Information	1.47	4	0.833

TABLE 3-10

SUMMARY OF CHI-SQUARE ANALYSIS COMPARING SOURCE OF
INFORMATION WITH PROBABILITY OF COMMUNICATION
CONTROLLING FOR MESSAGE TYPE

VARIABLE	χ^2	d.f.	p
Probability of Communicating Rules Information	17.94	4	0.001
Probability of Communicating Problem Information	1.80	4	0.773
Probability of Communicating Personnel Change Information	1.29	4	0.863
Probability of Communicating Explanatory Information	1.47	4	0.833

TABLE 3-11

SUMMARY OF CHI-SQUARE ANALYSIS COMPARING SOURCE OF
INFORMATION WITH INFORMATION VALUE CONTROLLING
FOR MESSAGE TYPE

VARIABLE	χ^2	d.f.	p
Value of Rules Information	11.12	1	0.0009
Value of Problem Information	0.03	1	0.856
Value of Personnel Change Information	0.80	1	0.373
Value of Explanatory Information	0.19	1	0.660

TABLE 3-12

SUMMARY OF CHI-SQUARE ANALYSIS COMPARING SOURCE
OF INFORMATION WITH CONDENSED INFORMATION
VALUE CONTROLLING FOR MESSAGE TYPE

VARIABLE	χ^2	d.f.	p
Value of Rules Information	11.12	1	0.0009
Value of Problem Information	0.03	1	0.856
Value of Personnel Change Information	0.80	1	0.373
Value of Explanatory Information	0.19	1	0.660

Organizational level was compared with the probability of communication and information value in Tables 3-4 and 3-5, pages 44 and 45. Both the relationships were found to be significant. Tables 3-6 through 3-8 explore these relationships more extensively. Table 3-6 shows that organizational level has a significant relationship with communication at $p < 0.05$ for all message types except personnel change information. A similar situation is present in Table 3-8 comparing level with information value on a condensed scale. All the relationships are significant at $p < 0.05$ except the value of personnel change information.

The interaction effect of organizational level and source of information is the focus of Table 3-9. All the relationships have a $p < 0.05$ indicating that the two levels considered in the study obtain the same messages from different sources. It should be noted that the

personnel change message type had the most significant relationship with organizational level which parallels the results listed in Table 3-2, page 42.

The next three tables, 3-10 through 3-12, further examine the relationship of source of information with communication and information value. The source of information was not found to have a significant relationship with communication but Table 3-10 indicates that one message type does have a relationship ($p = 0.001$). Rules information is the only message type with a significant association between source and communication.

The last two tables that report the results of the second statistical step of this study focus on the relationship between the source of information and information value. H4 deals with this relationship and was confirmed as indicated earlier. These results show that not all the message types have a significant relationship with the source and information value. Table 3-12 reveals that only the value of rules information reaches significance. This type of message also had the only significant relationship with source and communication.

Originally, the source of information had four possible responses on the questionnaire. Results found in this step indicated that two of the categories contained the large majority of answers. Superiors and fellow workers are the two responses that received 92.8 percent of the answers. For this reason, the other two categories were eliminated when calculating the results. This fact is important and will be discussed more in the last chapter of this study.

III. CORRELATION ANALYSIS

The last three hypotheses were tested during this third step in the statistical procedure. The variable of organizational level was measured on an ordinal level; therefore, Kendall's tau and Spearman rho coefficients were calculated to test the following hypotheses:

H2: There is an association between organizational level and perceived information value.

H5: There is an association between organizational level and the communication of information.

The major research hypothesis was tested using a Pearson r procedure since both of the variables were measured on an interval level. The major research hypothesis is:

H1: There is an association between perceived information value and the communication of that information.

The results listed in Table 3-13 support H2 and H5 at the $p = 0.001$ level. All the coefficients in that table have a negative sign which indicates that the variables vary inversely. Since the supervisory organizational level was numbered 1 when coding the data and nonsupervisory 2, the meaning of the negative coefficients can be easily explained. As the organizational level numerical value decreases, i.e., moves towards supervisory, the numerical value of either information value or communication increase. Therefore, these coefficients indicate that supervisory level personnel value information more than nonsupervisory and communicate more.

TABLE 3-13
CORRELATION ANALYSIS COMPARING ORGANIZATIONAL LEVEL WITH
INFORMATION VALUE AND PROBABILITY OF COMMUNICATION

VARIABLE	KENDALL'S TAU	SPEARMAN RHO	p
Perceived Information Value	-0.1934	-0.2146	0.001
Probability of Communication	-0.1849	-0.2017	0.001

NOTE: Each of the coefficients is based on an N = 520.

The two variables of information value and communication were once again divided into message types and new coefficients were calculated. They are reported in Tables 3-14 and 3-15. The findings are similar to other breakdowns by message type in step 2. The value of rules information was the only variable of information value that was not related significantly to organizational level ($p < 0.05$). The communication of personnel change information was found to be the only variable in Table 3-15 not to have a significant relationship with organizational level. Personnel change information has shown characteristics different from the other three message types in several places. These differences are discussed in Chapter IV.

The coefficients that test H1 are located in Table 3-16. The $r = 0.4138$ for the overall relationship between information value and communication is significant beyond the $p = 0.01$ level. Therefore, the major research hypothesis is supported. The other data in

CORRELATION ANALYSIS COMPARING ORGANIZATIONAL
LEVEL WITH INFORMATION VALUE CONTROLLING
FOR MESSAGE TYPE

VARIABLE	KENDALL'S TAU	SPEARMAN RHO	p
Value of Rules Information	-0.1501	-0.1642	0.062
Value of Problem Information	-0.2235	-0.2449	0.005
Value of Personnel Change Information	-0.1622	-0.1800	0.040
Value of Explanatory Information	-0.2256	-0.2862	0.001

NOTE: Each of the coefficients is based on an N = 130.

TABLE 3-15

CORRELATION ANALYSIS COMPARING ORGANIZATIONAL
LEVEL WITH PROBABILITY OF COMMUNICATION
CONTROLLING FOR MESSAGE TYPE

VARIABLE	KENDALL'S TAU	SPEARMAN RHO	p
Probability of Communicating Rules Information	-0.3371	-0.3598	0.001
Probability of Communicating Problem Information	-0.2072	-0.2225	0.011
Probability of Communicating Personnel Change Information	-0.0224	-0.0245	0.780
Probability of Communicating Explanatory Information	-0.2219	-0.2455	0.005

NOTE: Each of the coefficients is based on an N = 130.

TABLE 3-16
CORRELATION ANALYSIS COMPARING INFORMATION VALUE
WITH PROBABILITY OF COMMUNICATION

PEARSON r (overall) N = 520	PEARSON r (super) N = 124	PEARSON r (nonsuper) N = 372
0.4138	-0.0242	0.4705
p = 0.0	p = 0.79	p = 0.0

Tables 3-16 and in Tables 3-17 and 3-18 further explore the interaction among variables. The center and right columns of Table 3-16 separate the sample into supervisory and nonsupervisory subjects. There is an interesting occurrence in that the sign of the coefficient changes to negative for the supervisory subsample. While none of these coefficients are significant, the sign change was unexpected. When message type was considered, all the coefficients were significant beyond the $p = 0.01$ level, but again personnel change information had the smallest coefficients.

As a check on the construction of information type from message types, two correlation matrices were calculated. If the theoretical combination of messages into information type is valid, rules information should have its highest correlation with personnel change information since they represent the same information type. A similar statement can be made concerning the other two messages. The matrices in Tables 3-19 and 3-20 do not support the construct of information type. Rules information has its highest correlation with problem information and its lowest with personnel change. Information type might be a valid concept but the operational definition used for this study is not viable.

IV. REGRESSION ANALYSIS

The last statistical analysis step involves the application of a multiple regression process. All the research hypotheses developed in Chapter I have been tested in the first three statistical procedures.

TABLE 3-17

CORRELATION ANALYSIS COMPARING INFORMATION VALUE
WITH PROBABILITY OF COMMUNICATION
CONTROLLING FOR MESSAGE TYPE

MESSAGE TYPE	PEARSON r	p
Rules Information	0.4478	0.0
Problem Information	0.5142	0.0
Personnel Change Information	0.2677	0.002
Explanatory Information	0.4385	0.0

NOTE: Each coefficient is based on an N = 130.

TABLE 3-18

CORRELATION ANALYSIS COMPARING INFORMATION VALUE
WITH PROBABILITY OF COMMUNICATION CONTROLLING
FOR MESSAGE TYPE AND ORGANIZATIONAL LEVEL

MESSAGE TYPE	PEARSON r (super)	p	PEARSON r (nonsuper)	p
Rules Information	-0.1183	0.526	0.5097	0.0
Problem Information	-0.0604	0.747	0.4486	0.0
Personnel Change Information	-0.1110	0.552	0.4072	0.0
Explanatory Information	-0.0613	0.743	0.5236	0.0

NOTE: Supervisory level coefficients are based on an N = 31 and nonsupervisory coefficients on an N = 93.

TABLE 3-19

CORRELATION MATRIX FOR INFORMATION VALUE
CONTROLLING FOR MESSAGE TYPE

	RVALUE	PVALUE	CVALUE	EVALUE
RVALUE	1.0			
PVALUE	0.6703	1.0		
CVALUE	0.2550	0.3523	1.0	
EVALUE	0.3853	0.4897	0.5951	1.0

NOTE: Above is a matrix of Pearson r coefficients based on an N = 130.

RVALUE = Value of Rules Information

PVALUE = Value of Problem Information

CVALUE = Value of Personnel Change Information

EVALUE = Value of Explanatory Information

TABLE 3-20

CORRELATION MATRIX FOR PROBABILITY OF COMMUNICATION
CONTROLLING FOR MESSAGE TYPE

	RCOMM	PCOMM	CCOMM	ECOMM
RCOMM	1.0			
PCOMM	0.5573	1.0		
CCOMM	0.4668	0.5269	1.0	
ECOMM	0.5219	0.5201	0.5186	1.0

NOTE: Above is a matrix of Pearson r coefficients based on an N = 130.

RCOMM = Probability of Communicating Rules Information

PCOMM = Probability of Communicating Problem Information

CCOMM = Probability of Communicating Personnel Change Information

ECOMM = Probability of Communicating Explanatory Information

The purpose of this final analysis is twofold. First, the regression analysis is useful to further examine the relationship among the variables. Second, the ability to partially predict communication from information value and other variables will greatly increase the usefulness of this work.

It will be helpful at this time to state additional hypotheses to aid in the interpretation of the results of the regression analysis. There will be five hypotheses stated here. The first one deals with the overall relationship of communication with value and level. The next four compare the same three variables but separate the sample into the message types once again.

H8: A significant amount of the variance in the probability of communication can be predicted from the perceived information value and organizational level.

H9: A significant amount of the variance in the probability of communicating rules information can be predicted from the value of rules information and organizational level.

H10: A significant amount of the variance in the probability of communicating problem information can be predicted from the value of problem information and organizational level.

H11: A significant amount of the variance in the probability of communicating personnel change information can be predicted from the value of personnel change information and organization level.

H12: A significant amount of the variance in the probability of communicating explanatory information can be predicted from the value of explanatory information and organizational level.

Five regression analyses were calculated to test the new research hypotheses. The results of the procedures are located in Tables 3-21 through 3-25. Since the variable of level was not measured on an interval level, dummy variables had to be created to use organizational level as a variable in the process.

The results of the regression process that tested H8 are listed in Table 3-21. Information value accounted for 17.12 percent of the variance in communication which is significant beyond the $p = 0.01$ level. Adding the effects of level in the regression, the total $R^2 = 0.2286$. The total predictive power of the formula is 22.86 percent. Organizational level significantly contributed to the predictive power. H8 is supported from the results of the regression analysis.

The communication of rules information is the dependent variable of the second regression procedure. The combined effect of the variables was found to be significant beyond the $p = 0.01$ level. The total predictive power for this message type was 34.08 percent—the highest of all the message types. H9 is supported.

Table 3-23 indicates that H10 is only partially supported by the results. The value of problem information does significantly predict communication but organizational level does not further contribute to the predictive power of the formula. Total support for H10 is not confirmed in the results.

TABLE 3-21

REGRESSION ANALYSIS COMPARING PROBABILITY OF
COMMUNICATION WITH INFORMATION VALUE
AND ORGANIZATIONAL LEVEL

VARIABLE	MULTIPLE-R	R ²	BETA	F
Information Value (A)	0.4138	0.1712	0.4558	114.08**
Organizational Level (B)	0.4470	0.1998	0.7593	29.64**
Interaction A × B	0.4781	0.2286	-0.6281	19.26**

**Significant beyond 0.01 level.

NOTE: All F-values calculated with (3,516) d.f.

TABLE 3-22

REGRESSION ANALYSIS COMPARING PROBABILITY OF
COMMUNICATING RULES INFORMATION WITH
THE VALUE OF RULES INFORMATION
AND ORGANIZATIONAL LEVEL

VARIABLE	MULTIPLE-R	R ²	BETA	F
Value of Rules Information (A)	0.4478	0.2005	0.5209	40.98**
Organizational Level (B)	0.5301	0.2810	1.0558	19.56**
Interaction A × B	0.5838	0.3408	-0.8332	11.44**

**Significant beyond 0.01 level.

NOTE: All F-values calculated with (3,126) d.f.

TABLE 3-23

REGRESSION ANALYSIS COMPARING PROBABILITY OF
COMMUNICATING PROBLEM INFORMATION WITH
THE VALUE OF PROBLEM INFORMATION
AND ORGANIZATIONAL LEVEL

VARIABLE	MULTIPLE-R	R ²	BETA	F
Value of Problem Information (A)	0.5142	0.2644	0.4951	39.01**
Organizational Level (B)	0.5294	0.2802	1.0303	2.03
Interaction A × B	0.5377	0.2891	-0.9091	1.57

**Significant beyond 0.01 level.

NOTE: All F-values calculated with (3,126) d.f.

TABLE 3-24

REGRESSION ANALYSIS COMPARING PROBABILITY OF COMMUNICATING
PERSONNEL CHANGE INFORMATION WITH THE VALUE OF
PERSONNEL CHANGE INFORMATION AND
ORGANIZATIONAL LEVEL

VARIABLE	MULTIPLE-R	R ²	BETA	F
Value of Personnel Change Information (A)	0.2677	0.0717	0.3461	13.78**
Organizational Level (B)	0.2690	0.0724	0.5186	4.41**
Interaction A × B	0.3230	0.1043	-0.5380	4.49**

**Significant beyond 0.01 level.

NOTE: All F-values calculated with (3,126) d.f.

TABLE 3-25

REGRESSION ANALYSIS COMPARING PROBABILITY OF
COMMUNICATING EXPLANATORY INFORMATION WITH
THE VALUE OF EXPLANATORY INFORMATION
AND ORGANIZATIONAL LEVEL

VARIABLE	MULTIPLE-R	R ²	BETA	F
Value of Explanatory Information (A)	0.4385	0.1923	0.4767	32.30**
Organizational Level (B)	0.4957	0.2457	0.8794	10.60**
Interaction A × B	0.5301	0.2810	-0.6907	6.19**

**Significant beyond 0.01 level.

NOTE: All F-values calculated with (3,126) d.f.

Both H11 and H12 are supported by the results of the last two regression analyses reported in Tables 3-24 and 3-25. The significance level for both is beyond $p = 0.01$. Of the communication of personnel change information, 10.43 percent can be predicted from the value of personnel change information and organizational level. A larger percentage, 28.1 percent of the communication of explanatory information can be predicted from the independent variables in the formula.

All of the relevant statistical results have been presented in this chapter. Additional information and findings are included in Appendix B. The last chapter of this work discusses the meaning of the results along with a look towards further research in this area.

CHAPTER IV

SUMMARY AND DISCUSSION

I. SUMMARY

This research was a field study designed as an attempt to verify the existence of a relationship between perceived information value and the probability of communication. The concept of information value has been mentioned in a number of works, but little research has been conducted in this area.

The concept of information value was defined as the perceived usefulness of a piece of information, dependent on situational variables, to an actual or potential possessor. This definition is derived primarily from the works of Brock (1968) and Thayer (1968). This conceptualization of information value implied that variables other than information value and the probability of communication needed to be included in the research design.

The work of Redding (1964) indicated that there could be three possible types of information functions in any situation. Two of these three, task function and maintenance function, were included in this design. Redding's work conceptualized these two types of information. The questionnaire used in this research operationalized two message types for each information function type. There were six items that focused on each information type contained in the data collection instrument.

The next situational variable to be considered was the organizational level of the employee. There were five job positions possible in the research setting. Two organizational levels—supervisory and nonsupervisory—were formed by the combination of these five positions. The sample provided 31 supervisory personnel and 93 nonsupervisory personnel.

The last variable to be included in the design was the source of the information. There was the possibility that the source of information would affect the value and communication of that information. Four responses were possible in this area: a superior, a fellow worker, a subordinate, and other sources.

A total of twelve research hypotheses were generated for this research. Seven were formulated to test whether the variables considered in the research were related to information value and communication. The last five hypotheses were used for a post-hoc analysis of the data to test if communication could be predicted from the variables used in this study.

The setting for this study was the Power Bureau of a southeastern city's utilities board. The sample ($N = 130$) was selected by using the membership of one of the six departments within this Bureau. Each employee of the department was asked to complete a questionnaire concerned with the study's hypotheses.

Eight of the twelve hypotheses were supported by the results. Also a number of interesting tangential findings were discovered.

The results of the hypotheses testing and the additional findings will be discussed in this chapter.

Hypothesis 1 stated that there is a relationship between perceived information value and the probability of communication. This was supported ($p < 0.01$) with the data collected. This relationship also was found for these two variables when the sample was divided into the four message types.

Hypothesis 2 focused on the relationship between organizational level and information value. This statement was supported ($p < 0.01$) through a correlation analysis. When the sample once again was divided into the four message types, significant relationships ($p < 0.05$) were found for all but rules information.

Hypothesis 3 was concerned with the relationship between the type of information and information value. The operational construction of information type in the questionnaire was found to be unsound. Results indicated that the messages grouped together to form the information types of task and maintenance were not consistent. This hypothesis could not be supported from the data.

Hypothesis 4 stated that there is a relationship between the source of information and information value. This was supported ($p < 0.05$) with the use of the chi-square statistic. When this relationship was examined dividing the sample by message types, rules information was the only message that had a significant relation ($p < 0.01$) with the source.

Hypothesis 5 was concerned with the relationship between organizational level and the probability of communication. This hypothesis was supported ($p < 0.01$) with a correlation coefficient. Only the personnel change message was not found to have a significant relationship ($p > 0.05$) with communication and level when the sample was divided by message type.

Hypothesis 6 was not supported by the data collected. This hypothesis stated that there was a relationship between information type and communication. As with hypothesis 3, the operational definition of information type was faulty. Therefore, this hypothesis could not be supported.

The last of the original research hypotheses focused on the relationship between the source of information and communication. The results of the analysis did not support this hypothesis. When the sample was divided using message type as the criterion, only rules information was found to have a significant relationship ($p < 0.01$) with communication.

Hypotheses 8 through 12 were used to aid in understanding the results of the regression procedure. All five were concerned with the ability to predict a significant amount of the variance in communication from different groupings of variables.

Hypothesis 8 was concerned with the overall ability to predict communication from information value and organizational level. This was supported ($p < 0.01$) from the data. The last four hypotheses use the same primary variables as hypothesis 8 but separate the sample into the four message types.

Hypothesis 9 stated that the communication of rules information can be predicted from the value of rules information and organizational level. This was supported ($p < 0.01$) from the results of the regression analysis.

Hypothesis 10 could not be supported fully. This hypothesis focused on predicting the communication of problem information from the value of problem information and organizational level. The value of problem information had a significant predictive power ($p < 0.01$) but the effects of organizational level were not found to be significant.

Both of the last two hypotheses were supported ($p < 0.01$). Hypothesis 11 controlled for personnel change information and hypothesis 12 controlled for explanatory information. There are a number of other findings that need to be summarized in this section.

As mentioned earlier in this chapter, the operational definition of information type was discovered to be faulty. The results indicated that the personnel change message was different from the other three message types. Personnel change information had a different modal source, no relationship with level and communication, and no relationship with level and information value.

Another interesting result was discovered in the analysis of the data. When considering the source of information, only two of the four categories received a significant amount of responses. The categories of "your supervisor or boss" and "your fellow workers" received 92.8 percent of the responses. The category of "the people you supervise" received only 8 responses out of a possible 124.

A number of the correlation coefficients calculated in this research were negative. All the coefficients between level and communication, and information value were negative. This was due to the coding system used in the data processing. The coefficient for the relationship between perceived information value and the probability of communication for supervisory personnel also was negative. This negative direction also was found in this relationship when the sample was divided by message type.

The last result that needs to be discussed is that the responses on the scales for information value and communication were highly skewed. The mode for value for all message types was seven. All message types had a mode of four when considering communication. This arrangement in the data resulted in the redefinition of some of the scales for analysis.

II. DISCUSSION

The majority of the research hypotheses were supported by the data collected in this study. There are, however, a number of aspects in the results that need to be discussed in greater detail.

This study showed that there exists a relationship between perceived information value and the probability of communication. A number of situational variables were also shown to have relationships with perceived information value and probability of communication. These results are a necessary first step in the development of a useful new aspect of organizational communication.

The regression analysis procedure employed in the last statistical step of this research points the direction for the application of this work. Communication can be significantly predicted through the use of the concept of information value. This value can be altered through the control of the correct situational variables. Organizational level, and message type are two such variables that this study verified as being part of this information value system. Other variables need to be explored in further research.

This work has another useful aspect in further application. The ability to predict communication from perceived information value implies the ability to identify and locate possible communication barriers in an organization by measuring the employees' perceptions of information value. A procedure using the information value concept would not only have the ability to locate barriers for all communication but also find obstructions in the communication networks for specific types of information and messages.

The next aspect of this study that should be considered is the difficulty with the operational definition of information type. The conceptual definitions of the three information types are well documented. Many other studies have used these same three information functions with better results. The categorization of the four messages into the two information types is the problem. An interview technique was used to gather the data necessary to construct the questionnaire and the message groups. This method is not the most accurate technique and could be part of the problem. Another aspect of the problem is

that the message types were only mentioned briefly in each item. At no time were the different messages explained in detail.

Some possible solutions to this difficulty might include a pretest format to determine more accurately the different message types that constitute each information type. Another alternative might be to include a short description of each message as an attempt to provide the details of each message type.

The differences of personnel change information from the other three message types is the next aspect of the results that needs to be discussed. One of the first differences to be discovered was that the modal source for this message was fellow workers. This was the only message that had this source as a mode. Another interesting difference is that no significant relationship was found when considering level and communication of personnel change information.

The source of this message type indicates one possible explanation for the differences. Obtaining information from your fellow workers suggests that the majority of other employees already know the information and there is no need for further communication. It is also possible that the informal communication network is more active with this type of message and the information is circulated faster. The organization used for the research has a procedure of posting future job openings to permit all employees a chance to bid for each open job position. A number of department heads indicated in the initial interviews that they already had the person chosen for the job before the bids were posted. It is possible that the change information is

known before the actual change takes place through informal communication decreasing the need for further formal communication after the change.

The last thing to consider with the differences in the personnel change message is the possibility that this message represents a different information type than the other three messages. If the employees perceived the rules message as task information along with the other two messages, personnel change information might be the only message type that has a maintenance function. A pretest designed to determine what message types can be categorized into the information types might help explain these differences in the personnel change message.

The questionnaire provided a possible 520 responses on items that focused on the source of information considering the number of subjects. Only 8 responses were in the category "the people you supervise" and 30 in the "other" category. This low number of responses might be the result of a few possible occurrences.

It first must be noted that the subjects that were considered nonsupervisory had no people that they could supervise. This made this response unrealistic for them. If these responses are subtracted from the total, 124 responses still remain that have the possibility of being in the category "the people you supervise." It is possible that little communication in this organization flows in an upward direction. This explanation gains added support with an examination of the last item on the questionnaire. Many of the responses by nonsupervisory personnel to this open-ended question indicated that the supervisors

did not seek information from subordinates before making decisions. The individual responses from this item cannot be reported as indicated in the informed consent cover sheet.

There is another possible explanation for the small number of responses in the two categories. The questionnaire is limited to only four message types. While attempts were made in the design of the questionnaire and in the initial interviews to ensure that the messages were common for the department, other kinds of messages might produce different results. The inclusion of a larger number of message types would help to determine if the failure to use lower level employees as a source of information is a phenomenon for just these four messages or for the communication system as a whole.

All the correlation coefficients calculated for the relationship between perceived information information value and communication for supervisory personnel had a negative direction. While none of these coefficients even approached significance, the change in sign was unexpected. A closer examination of the data revealed that all the messages were ranked "very valuable." The rating of communication had a bit more variety ranging from five to three. The results are that supervisory personnel perceived all the messages as "very valuable" and would usually communicate that information but would not "always" communicate the information. This lower rating on the communication scale caused the negative sign in the coefficient but the magnitude of the relationship was very slight.

The last result that will be discussed is the skewedness of the results on the scales for information value and communication. The

majority of responses indicated that all the messages were very valuable. It is very possible that with only four types of messages; they all could be very valuable. The initial interviews might have revealed valuable messages rather than just common messages. It is also possible that the directness of the questions and response possibilities caused some distortion. This might be corrected by developing a system of response categories that could be combined into forming a scale for information value. If communication behaviors were measured rather than a report of communication, the skewedness of the results might be explained. These two procedures would aid in eliminating any expectancy effect caused by the present design.

III. LIMITATIONS OF THE RESEARCH

The major focus of this study was the relationship between perceived information value and the probability of communication. The probability of communication was measured on a self-report scale. This type of measure may not accurately represent actual communication behavior. It was not possible in the research setting to measure communication behavior without employing a self-report technique. The organization of the department used for the study was designed such that the majority of employees were in the field working during the day. This separation did not permit easy measurement of communication behavior. The management of the Bureau also indicated that as little employee time as possible was to be occupied with completing the work of the study. This limited the researcher's access to the subjects.

The second limitation of the study to consider is the composition of the sample. All the subjects were male and selection was not random. This all male sample parallels all the departments of the Bureau; however, the sample may not be a true representation because of a lack of a random sample. This limits the external validity of the results of the study.

The difficulties in operationalizing the information types used in the study was the third limitation of the work. The examination of the message types revealed some interesting results, however, these results are not as useful as the information type concept would have provided. Each organization will have different messages but every organization should have the same three information types. This problem with developing satisfactory categories of messages to create the information types reduces the ability to apply this work to other organizations.

The last limitation of the study to be discussed is the message types used in the questionnaire. There are two considerations in this area. First, the questionnaire was limited to only four messages to keep the completion time to a minimum. The four messages chosen may not have accurately represented the most common messages of the department. Second, the messages were presented to the subjects as just brief statements without any detailed explanation. There is a possibility that the subjects interpreted these messages differently than the researcher intended.

These four limitations can be corrected in future research with changes in the research design. These changes along with possible research considerations will be presented in the final section of this chapter.

IV. RECOMMENDATIONS FOR FURTHER STUDY

This study indicated that more research is necessary in the area of perceived information value and communication. This work showed that this relationship exists in the organization studied. The exact nature of this relationship is a necessary focus for future research.

Any further research should attempt to develop a more accurate measurement technique for perceived information value. It is possible to combine the responses on several items to determine information value without asking the question directly. This would provide a system to rate information value with greater accuracy.

Future research should also attempt to measure communication behavior as behavior and not employ the self-report technique. This would provide results that would be less open for criticism and more useful to the organization used in the study.

Another procedure that future researchers should consider is the use of a pretest within the organization to determine what messages constitute different information types. These three information types should not be discarded because of the difficulties this study had with operationalizing the concepts. Definite criteria could be developed

to create an accurate system for categorizing messages into the information types.

If this system were developed, the characteristics of different information types could be applied to messages in other organizations by using the criteria developed on the second organization's message types. This procedure would increase the ability to generalize the results and thereby increase the usefulness of the work.

Any future research in this area should include a section in the design that would determine if a relationship between information value and communication exists in that organization. This step is necessary to check the results of this study and to increase the ability to generalize the existence of this relationship to other settings.

The variable of organizational level was found to have significant relationships with the two main variables and it therefore recommended that this be retained as a consideration of future works. The problems encountered with the source of information variable suggests that this area be redefined for use in other studies.

Brock's (1968) commodity theory along with other exchange theories might be a possible source of research considerations in the future. Brock's work was used in this study to aid in the construction of the definition of information value. His work also would be very useful in the selection of situational variables and in the formation of hypotheses focusing on the nature of the relationships among variables.

This study has been successful in accomplishing its major objective—to verify that a relationship between perceived information

value and the probability of communication does exist in the real world. Further study in this area should now focus on expanding this verification to other organizations and developing a detailed explanation of the exact nature of this relationship.

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APPENDIXES

APPENDIX A

DATA COLLECTION INSTRUMENTS

Question List for Interviews with Department Heads

The questions that follow were used as necessary during the series of interviews with the heads of the six departments of K.U.B. The questions were employed to initiate and direct the discussion.

1. Could you describe the different levels or sections of this department?
2. How many employees work within each level or section?
3. What is the major type of information that you send to your superiors?
4. What is the major type of information that you send to your subordinates?
5. Where are the employees of this department physically located for their jobs?
6. Which of the five other departments in the Bureau of Power does this department communicate with most often?
7. What is the major type of information sent from this department to other departments?
8. From what other department does this department receive the most information?
9. What type of information is usually received from this other department?

10. Do you hold department meetings? How often? What is the normal format for these meetings?
11. Do you ever meet with members of other departments?
12. How are personnel messages communicated to employees?
13. What is a typical type of personnel message?
14. How are special assignments communicated to employees?
15. How are safety regulations communicated to employees?
16. How are job openings communicated to employees?
17. How are company policies communicated to employees?

Question List for Interviews with the
Management of the Line Department

The questions that follow were used as necessary during the series of interviews with the management of the line department to initiate and direct the discussion.

1. How are the employees of this department divided into work crews?
2. How are the job assignments given to the workers?
3. What type of written communications do you usually have with your superiors? With your subordinates?
4. What kinds of information are usually contained in these written communications?
5. What types of oral communication do you usually have with your superiors? With your subordinates?
6. What kinds of information are usually contained in the oral communication?
7. When you and your boss have a conversation, what are the most common topics?
8. When you and your employees have a conversation, what are the most common topics?
9. How may the employees reach you when they have a question or problem?
10. Is there a formal way that the employees may complain?
11. How may the employees find out about company policy?
12. How is important information communicated to the employees?

Informed Consent

The following survey deals with how valuable you feel certain types of information are to you in your work. This survey is also concerned with the groups of people from whom you usually receive your information. This questionnaire is designed to help us better understand (1) what kinds of information are most valued at K.U.B. and (2) the usual sources of certain types of information.

Be assured that your answers are completely confidential. No one in your organization will see the results of any individual questionnaire.

In addition, you have the following rights:

1. You do not have to complete the survey if you do not want to. You may skip any question in the survey that you do not want to answer. There will be no penalty for failing to complete the survey or skipping any question.
2. You are free to ask any questions you wish about the survey.
3. Please do not put your name on the survey or in any way indicate who you are.
4. The results of the survey are confidential. The results of any individual survey will not be seen by anyone at K.U.B.
5. Please feel free to contact me personally if you have any questions or comments.

11. HOW VALUABLE TO YOU IS INFORMATION THAT DEALS WITH WHY A JOB IS BEING DONE?

very no
valuable 7 6 5 4 3 2 1 value

12. FROM WHAT OTHER PEOPLE AT K.U.B. DO YOU USUALLY LEARN WHY A JOB IS BEING DONE?

_____ your boss or supervisor

_____ your fellow workers

_____ the people you supervise

_____ other sources

13. WHEN YOU KNOW WHY A JOB IS BEING DONE, HOW OFTEN DO YOU TELL THIS INFORMATION TO OTHER PEOPLE AT K.U.B. THAT MAY NOT KNOW THIS INFORMATION?

always most of sometimes not that never
 the time often

14. WHAT DO YOU FEEL IS THE MAJOR COMMUNICATION PROBLEM AT K.U.B.?

APPENDIX B

STATISTICAL DATA

TABLE B-1

FREQUENCY DISTRIBUTION COMPARING PROBABILITY OF
COMMUNICATION WITH INFORMATION VALUE

COUNT ROW PCT COL PCT TOT PCT	PROBABILITY OF COMMUNICATION					
	NEVER	NOT THAT OFTEN	SOMETIMES	MOST OF THE TIME	ALWAYS	
VALUE	7	5	17	7	11	47
	14.9	10.6	36.2	14.9	23.4	9.5
NO	70.0	16.7	14.9	3.3	8.4	
VALUE	1.4	1.0	3.4	1.4	2.2	
	0	1	5	0	0	6
	0.0	16.7	83.3	0.0	0.0	1.2
	0.0	3.3	4.4	0.0	0.0	
	0.0	0.2	1.0	0.0	0.0	
	0	2	5	4	0	11
	0.0	18.2	45.5	36.4	0.0	2.2
	0.0	6.7	4.4	1.9	0.0	
	0.0	0.4	1.0	0.8	0.0	
	0	5	12	11	3	31
	0.0	16.1	38.7	35.5	9.7	6.2
	0.0	16.7	10.5	5.2	2.3	
	0.0	1.0	2.4	2.2	0.6	
	1	5	21	41	5	73
	1.4	6.8	28.8	56.2	6.8	14.7
	10.0	16.7	18.4	19.3	3.8	
	0.2	1.0	4.2	8.2	1.0	
	0	6	10	35	4	55
	0.0	10.9	18.2	63.6	7.3	11.1
	0.0	20.0	8.8	16.5	3.1	
	0.0	1.2	2.0	7.0	0.8	
	2	6	44	114	108	274
	0.7	2.2	16.1	41.6	39.4	55.1
VERY	20.0	20.0	38.6	53.8	82.4	
VALUABLE	0.4	1.2	8.9	22.9	21.7	
	10	30	114	212	131	497
	2.0	6.0	22.9	42.7	26.4	100.0

TABLE B-2

FREQUENCY DISTRIBUTION COMPARING INFORMATION
VALUE WITH ORGANIZATIONAL LEVEL

COUNT	NO	2	3	4	5	6	VERY VALUABLE 7
ROW PCT	VALUE						
COL PCT	1						
TOT PCT							
LEVEL	6	1	0	1	16	9	89
	4.9	0.8	0.0	0.8	13.1	7.4	73.0
SUPERVIS	12.5	16.7	0.0	3.3	22.5	16.7	33.8
	1.2	0.2	0.0	0.2	3.3	1.9	18.5
NON	42	5	10	29	55	45	174
	11.7	1.4	2.8	8.1	15.3	12.5	48.3
SUPERVIS	87.5	83.3	100.0	96.7	77.5	83.3	66.2
	8.7	1.0	2.1	6.0	11.4	9.3	36.1
	48	6	10	30	71	54	263
	10.0	1.2	2.1	6.2	14.7	11.2	54.6
RAW CHI SQUARE				DEGREES OF FREEDOM			SIGNIFICANCE
28.00				6			0.0001

TABLE B-3
FREQUENCY DISTRIBUTION COMPARING INFORMATION
VALUE WITH INFORMATION TYPE

COUNT	NO	2	3	4	5	6	VERY
ROW PCT	VALUE						VALUABLE
COL PCT	1						7
TOT PCT							
MAINTEN	28	4	7	15	36	16	144
	11.2	1.6	2.8	6.0	14.4	6.4	57.6
	58.3	66.7	63.6	48.4	49.3	28.6	52.0
	5.6	0.8	1.4	3.0	7.2	3.2	28.7
TASK	20	2	4	16	37	40	133
	7.9	0.8	1.6	6.3	14.7	15.9	52.8
	41.7	33.3	36.4	51.6	50.7	71.4	48.0
	4.0	0.4	0.8	3.2	7.4	8.0	26.5
RAW CHI SQUARE	48	6	11	31	73	56	277
	9.6	1.2	2.2	6.2	14.5	11.2	55.2
13.58				6			
DEGREES OF FREEDOM							SIGNIFICANCE
							0.035

TABLE B-4

FREQUENCY DISTRIBUTION COMPARING INFORMATION
VALUE WITH MESSAGE TYPE

COUNT	NO	2	3	4	5	6	VERY VALUABLE	7
ROW PCT	1							
COL PCT								
TOT PCT								
RULES	8	0	4	8	16	8	79	123
	6.5	0.0	3.3	6.5	13.0	6.5	64.2	24.5
	16.7	0.0	36.4	25.8	21.9	14.3	28.5	
	1.6	0.0	0.8	1.6	3.2	1.6	15.7	
PROBLEM	6	1	2	8	17	17	75	126
	4.8	0.8	1.6	6.3	13.5	13.5	59.5	25.1
	12.5	16.7	18.2	25.8	23.3	30.4	27.1	
	1.2	0.2	0.4	1.6	3.4	3.4	14.9	
PERSONNEL CHANGE	20	4	3	7	20	8	65	127
	15.7	3.1	2.4	5.5	15.7	6.3	51.2	25.3
	41.7	66.7	27.3	22.6	27.4	14.3	23.5	
	4.0	0.8	0.6	1.4	4.0	1.6	12.9	
EXPLANAT	14	1	2	8	20	23	58	126
	11.1	0.8	1.6	6.3	15.9	18.3	46.0	25.1
	29.2	16.7	18.2	25.8	27.4	41.1	20.9	
	2.8	0.2	0.4	1.6	4.0	4.6	11.6	
RAW CHI SQUARE 33.19	48	6	11	31	73	56	277	502
	9.6	1.2	2.2	6.2	14.5	11.2	55.2	100.0
DEGREES OF FREEDOM							SIGNIFICANCE	
18							0.0158	

TABLE B-5

FREQUENCY DISTRIBUTION COMPARING INFORMATION VALUE WITH SOURCE OF INFORMATION

[illegible]

TABLE B-6

FREQUENCY DISTRIBUTION COMPARING PROBABILITY
OF COMMUNICATION WITH ORGANIZATION LEVEL

COUNT ROW PCT COL PCT TOT PCT	PROBABILITY OF COMMUNICATION						
	NEVER 1	NOT THAT OFTEN 2	SOMETIMES 3	MOST OF THE TIME 4	ALWAYS 5		
LEVEL	1	1	14	51	55	122	
	0.8	0.8	11.5	41.8	45.1	25.3	
SUPERVIS	10.0	3.6	13.0	24.2	43.7		
	0.2	0.2	2.9	10.6	11.4		
NON	9	27	94	160	71	361	
	2.5	7.5	26.0	44.3	19.7	74.7	
SUPERVIS	90.0	96.4	87.0	75.8	56.3		
	1.9	5.6	19.5	33.1	14.7		
	10	28	108	211	126	483	
	2.1	5.8	22.4	43.7	26.1	100.0	
RAW CHI SQUARE	DEGREES OF FREEDOM				SIGNIFICANCE		
39.57	4				0.0		

TABLE B-7

FREQUENCY DISTRIBUTION COMPARING PROBABILITY
OF COMMUNICATION WITH INFORMATION TYPE

COUNT		PROBABILITY OF COMMUNICATION					
ROW PCT		NEVER	NOT THAT		MOST OF		
COL PCT		OFTEN	SOMETIMES	THE TIME	ALWAYS		
TOT PCT		1	2	3	4	5	
MAINTEN		6	9	54	111	72	252
		2.4	3.6	21.4	44.0	28.6	50.1
		60.0	30.0	46.6	51.9	54.1	
		1.2	1.8	10.7	22.1	14.3	
TASK		4	21	62	103	61	251
		1.6	8.4	24.7	41.0	24.3	49.9
		40.0	70.0	53.4	48.1	45.9	
		0.8	4.2	12.3	20.5	12.1	
		10	30	116	214	133	503
		2.0	6.0	23.1	42.5	26.4	100.0
RAW CHI SQUARE		DEGREES OF FREEDOM			SIGNIFICANCE		
6.95		4			0.1381		

TABLE B-8

FREQUENCY DISTRIBUTION COMPARING PROBABILITY
OF COMMUNICATION WITH MESSAGE TYPE

COUNT ROW PCT COL PCT TOT PCT	PROBABILITY OF COMMUNICATION					
	NEVER 1	NOT THAT OFTEN 2	SOMETIMES 3	MOST OF THE TIME 4	ALWAYS 5	
RULES	2	2	24	51	47	126
	1.6	1.6	19.0	40.5	37.3	25.0
	20.0	6.7	20.7	23.8	35.3	
	0.4	0.4	4.8	10.1	9.3	
PROBLEM	2	5	23	55	41	126
	1.6	4.0	18.3	43.7	32.5	25.0
	20.0	16.7	19.8	25.7	30.8	
	0.4	1.0	4.6	10.9	8.2	
PERSONNEL CHANGE	4	7	30	60	25	126
	3.2	5.6	23.8	47.6	19.8	25.0
	40.0	23.3	25.9	28.0	18.8	
	0.8	1.4	6.0	11.9	5.0	
EXPLANAT	2	16	39	48	20	125
	1.6	12.8	31.2	38.4	16.0	24.9
	20.0	53.3	33.6	22.4	15.0	
	0.4	3.2	7.8	9.5	4.0	
	10	30	116	214	133	503
	2.0	6.0	23.1	42.5	26.4	100.0
RAW CHI SQUARE		DEGREES OF FREEDOM			SIGNIFICANCE	
37.72		12			0.0002	

TABLE B-9

FREQUENCY DISTRIBUTION COMPARING PROBABILITY
OF COMMUNICATION WITH SOURCE OF INFORMATION

COUNT		PROBABILITY OF COMMUNICATION					
ROW PCT	COL PCT	NEVER	NOT THAT	SOMETIMES	MOST OF	ALWAYS	
TOT PCT		1	OFTEN	3	THE TIME	5	
			2		4		
SOURCE		4	11	47	110	69	241
		1.7	4.6	19.5	45.6	28.6	57.0
BOSS		66.7	42.3	49.0	58.2	65.1	
		0.9	2.6	11.1	26.0	16.3	
		2	15	49	79	37	182
FELLOW		1.1	8.2	26.9	43.4	20.3	43.0
WORKERS		33.3	57.7	51.0	41.8	34.9	
		0.5	3.5	11.6	18.7	8.7	
		6	26	96	189	106	423
		1.4	6.1	22.7	44.7	25.1	100.0
RAW CHI SQUARE		DEGREES OF FREEDOM				SIGNIFICANCE	
7.99		4				0.091	

VITA

Peter Daniel Hobor was born in New Brunswick, New Jersey, on April 6, 1956. He attended elementary school and junior high school in North Brunswick, New Jersey. In June 1974, he was graduated from New Brunswick High School. The following September Mr. Hobor began work at Montclair State College, Upper Montclair, New Jersey. During his studies at this institution, he served as vice-president of Kappa Delta Pi and vice-president of Montclair College's Forensics Association. He received a Bachelor of Arts in Speech and Theatre during June 1978. Mr. Hobor also received an Educational Certificate for the state of New Jersey at that time.

In the fall of 1978 he accepted a teaching assistantship at The University of Tennessee, Knoxville, and began work toward a master's degree. He received a Master of Arts in Speech and Theatre in March 1980.

Mr. Hobor is a member of the International Communication Association and the Speech Communication Association. After graduation, he returned to New Jersey to form a consulting firm in speech communication.