

AD-A036 502

MAXWELL SCHOOL OF CITIZENSHIP AND PUBLIC AFFAIRS SYR--ETC F/G 5/11
DEVELOPMENT OF THE BASS-KLAUSS IMPACT MODEL OF INTERPERSONAL CO--ETC(U)
JAN 77 R KLAUSS N00014-76-C-0912

UNCLASSIFIED

TR-1

NL

1 OF 1
AD-A
036 502



END
DATE
FILMED
4 13 77
NTIS

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

AD-A036 502

DEVELOPMENT OF THE BASS-KLAUSS IMPACT
MODEL OF INTERPERSONAL COMMUNICATION

MAXWELL SCHOOL OF CITIZENSHIP AND PUBLIC AFFAIRS
SYRACUSE, NEW YORK

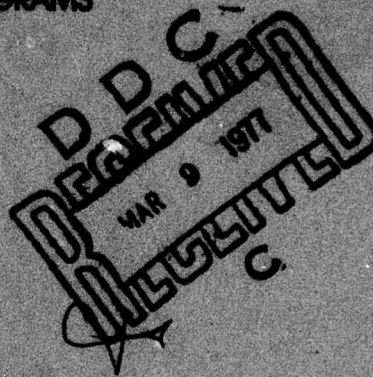
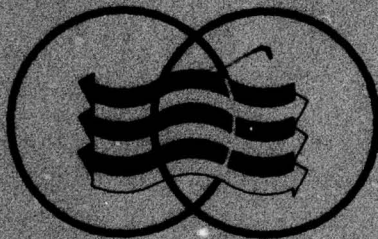
JANUARY 1977

DEVELOPMENT OF THE BASS-KLAUSS IMPACT
MODEL OF INTERPERSONAL COMMUNICATION

TR-1

Rudi Klauss
Syracuse University

MAXWELL TRAINING AND DEVELOPMENT PROGRAMS



DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

THE MAXWELL SCHOOL OF CITIZENSHIP AND PUBLIC AFFAIRS
SYRACUSE UNIVERSITY

REPRODUCED BY
**NATIONAL TECHNICAL
INFORMATION SERVICE**
U. S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER Technical Report No. 1	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Development of the Bass-Klauss Impact Model of Interpersonal Communication.	5. TYPE OF REPORT & PERIOD COVERED	
	6. PERFORMING ORG. REPORT NUMBER Research Report 1	
7. AUTHOR(s) Rudi Klauss	8. CONTRACT OR GRANT NUMBER(s) N0001476-C-0912	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Maxwell Training & Development Programs Syracuse University, Syracuse, N.Y. 13210	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS	
11. CONTROLLING OFFICE NAME AND ADDRESS Organizational Effectiveness Research Programs Department of the Navy, Office of Naval Research, Arlington, Virginia 22217	12. REPORT DATE January 1977	
	13. NUMBER OF PAGES	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report) Unclassified	
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE	
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) communication, communication model, interpersonal communication, role clarity, credibility, communication style, focal manager, communications factors.		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) After a review of theory and research on interpersonal communication in large organizations, selected communication models and their connections with organizational theory are discussed. The Bass-Klauss impact model is presented built on empirical factorial analyses of the communication style of a focal manager and his credibility, role clarity, and impact on his colleagues. The six communication style factors are: (I) careful presentation; (II) open, two-way communication; (III) frankness;		

(IV) careful listening, (V) brevity and (VI) informality. A 25 item inventory yields six factor scores with reliabilities of .76 or higher. Seven other factored scales generate equally reliable measures of credibility, role clarity and impact.

12

DEVELOPMENT OF THE BASS-KLAUSS IMPACT
MODEL OF INTERPERSONAL COMMUNICATION

TR-1

Rudi Klauss
Syracuse University



This research was sponsored by the Organizational Effectiveness
Research Programs, Office of Naval Research, under Contract
No. N0001476-C-0912.

Approved for public release; distribution unlimited.

Reproduction in whole or in part is permitted for any purpose of
the United States Government.

ACCESSION for	
NTIS	White Section <input checked="" type="checkbox"/>
D7C	Buff Section <input type="checkbox"/>
UNANNOUNCED	<input type="checkbox"/>
JUSTIFICATION.....	
BY.....	
DISTRIBUTION/AVAILABILITY CODES	
DIST.	AVAIL. CODE/OF SPECIAL
A	

January 1977

iii

ABSTRACT

After a review of theory and research on interpersonal communication in large organizations, selected communication models and their connections with organizational theory are discussed. The Bass-Klauss impact model is presented built on empirical factorial analyses of the communication style of a focal manager and his credibility, role clarity, and impact on his colleagues. The six communication style factors are: (I) careful presentation; (II) open, two-way communication; (III) frankness; (IV) careful listening; (V) brevity; and (VI) informality. A 25 item inventory yields six factor scores with reliabilities of .76 or higher. Seven other factored scales generate equally reliable measures of credibility, role clarity and impact.

DEVELOPMENT OF THE BASS-KLAUSS IMPACT
MODEL OF INTERPERSONAL COMMUNICATION

Communications are central phenomena in organizations. . . In addition to serving as the matrix which links members together in organizations. . . the communication system serves as the vehicle by which organizations are embedded in their environments. The inputs and outputs of organizations are mediated through communications. (Guetzkow, 1965)

This view of the importance of communication in organizations is widely shared by researchers and practitioners. For example, many years ago Barnard suggested that "in an exhaustive theory of organization, communication would occupy a central place, because the structure, extensiveness, and scope of organization are almost entirely determined by communication techniques" (1938, p. 91). Elsewhere, communication has been called the "cement" which makes an organization (Wiener, 1955), and "the very essence" of an organization (Katz and Kahn, 1966).

Despite the widespread agreement concerning the importance of communication within organizations, an understanding of how it actually operates in such settings remains quite limited. Perhaps, part of the reason is that communication is an issue of concern in a number of well-established disciplines such as sociology, linguistics, psychology, physiology, economics, speech, marketing, information science, etc. Each discipline tends to take its own specific focus on the problem, develop its own terminology and operationalize measures from that

perspective--with relatively little attention given to what is being done in other disciplines to address the same issue (Cherry, 1967; Thayer, 1967). Hence, the occasion for "communicating" and building on the learnings coming from within each discipline is typically not capitalized upon. Another problem in studying communication is that since it is such a pervasive feature of organizations, it is hard to isolate as a separate phenomenon for investigation (Porter and Roberts, 1972). Whatever the reasons, the need for empirical research which focuses on the core area of communication within organizations remains very great.

Focus of Present Research

The research effort reported here addresses this general need for empirical research on organizational communication, and focuses on a particularly vital area, namely, interpersonal communication at the managerial level. Given this focus of interest, we need to briefly discuss what we mean by the term "interpersonal communication." Perhaps most central to our definition is the view that interpersonal communication is essentially a social affair, an ongoing process involving at least two persons in interaction with each other. This process involves the exchange of messages which have content and meaning, and the primary concern in this present research is with the manner in which these messages are transmitted by a sender and given meaning by a recipient.

This perspective on communication as an interpersonal exchange process

finds support in the work of a number of researchers (Barnlund, 1968; Cherry, 1967; Newcomb, 1953; Patton and Giffin, 1974; Berlo, 1960), and it gives clear recognition to the fact that communication is an ongoing, organic, dynamic activity which is not frozen in time or unidirectional in flow. It also suggests that communication behaviors of a person (for example, supervisor) can be seen to influence others' (for example, subordinates) actions and attitudes.

A variety of different approaches might be taken in studying interpersonal communication in organizational settings. For example, one might choose to examine the structure of communication networks, the impact of different communication channels (face to face, telephone, written message), or directionality of communication (horizontal, upward, downward, diagonal). These as well as other approaches have to some extent been investigated by researchers in the field, and they have provided some tentative and useful insight into the communication process as it operates in organizations. However, for purposes of this current research effort we will be addressing a very specific area of concern -- verbal communication at the managerial level in work organizations.

Our choice of focus is based on the view that managerial communication is probably one of the most critical areas of organizational communication in general, and that it is the point at which managerial behavior can genuinely "make a difference" in influencing performance and employee attitudes. And if we consider the amount of time spent on communication on the part of managers, the empirical evidence clearly indicates that its centrality to the manager's overall job cannot be denied. For example, in 1951, Carlson conducted an intensive study of

nine senior executives over a four-week period of time and found that these senior managers spent approximately 80 percent of their time talking with others. In another intensive study of four departmental-level managers, Burns (1954) also found that more than 80 percent of these managers' time was spent in conversation. More recently, Stewart (1967), Lawler, Porter and Tennenbaum (1968) as well as Mintzberg (1968) have also found that an overwhelming amount of a manager's time is consumed by interpersonal communications.

Thus as these above studies indicate, interpersonal communication processes at the managerial level are of central importance. However, these studies reveal very little about specific managerial behaviors which contribute to effective communication. There has been some research in the fields of mass communication, psycholinguistics, attitude change and small group behavior relevant to interpersonal processes, but to a large extent these efforts have bypassed the reality constraints of enduring organizational relationships and the immediate managerial work environment. That is, most of this research has been conducted in a laboratory research context using artificially created groups (often with college students as subjects), or with groups having brief life spans (for example, duration of an experiment) -- conditions far different from most real-world organizations.

Representative of such research is the work of Bavelas and Barrett (1951), Leavitt (1951), Shaw (1964), Lawson (1965) and Burgess (1969). As suggested above, however, these studies are limited by the fact that they involved tasks which are not representative of real-world work situations. Moreover, they usually have tapped only one or two characteristics of interpersonal communication (such as amount and/or direction

of flow) at a time in relation to performance or satisfaction. Other potential dimensions of interpersonal communication behavior and their relation to performance and effectiveness in work organization have for the most part not been probed.

While laboratory research in this area has a number of limitations, the research conducted in field settings also has some deficiencies. In particular, most of the field research to date has not focused directly on the extent to which communication behavior is related to key variables of performance and satisfaction. Exceptions to this pattern can be noted in the work of Indik, Georgopoulos and Seashore (1961), and more recently in research reported by Roberts and O'Reilly (1974, 1975, 1976).

To summarize the foregoing discussion, the literature to date suggests first of all that interpersonal communication is a central phenomenon in organizations and secondly that it is especially important at the managerial level. Certainly, it occupies a vast majority of a manager's time and thus any increase in a manager's effectiveness or skill as a communicator should contribute directly or indirectly to increased organizational performance. The current state of knowledge in this area, however, is relatively fragmented, especially in terms of understanding specific behaviors that characterize interpersonal communication and the contribution which effective interpersonal communication can make to improving individual and organizational performance. In the research outline which follows we will be focusing on these issues and propose a framework for understanding the impact of managerial communication behavior in ongoing work organizations. It is hoped that this effort will make a contribution toward filling some of the gap that

currently exists in this area of organizational activity, and in turn contribute to the eventual development of a contingency theory of interpersonal organizational communication that would suggest appropriate communication behaviors for given work contexts. In attempting to move in this direction we turn now to a brief review of the existing literature and research to see what efforts and findings have been made in this field.

Previous Research and Perspectives

The literature on communication in organizations is quite extensive, but a large part of it turns out to be practitioner-oriented articles and books which give hints on how to be an effective communicator or improve organization communication. The more systematic, theoretical and empirically based writing and research in this area is surprisingly less voluminous than one might expect. Roberts and O'Reilly (1974) point out, for example, that in the area of job satisfaction, over 4,000 investigations have been reported (Lawler, 1971), while in contrast Porter and Roberts (1972) suggest that some 22 studies constitute the bulk of the research reported to 1972 in the area of organizational communication. This discrepancy in numbers makes clear the lack of attention being given to this field. More discouraging, however, is the fact that the amount of research on communication in organizations, if anything, has even fallen off further in the past several years. A comparison of Guetzkow's 1965 review of the literature with Porter and Roberts (1972) conveys this message quite dramatically, and the research reported since 1972 has not picked up much--with a few notable exceptions such as the work being carried on by Roberts and colleagues.

In the discussion which follows we will briefly summarize some of the major dimensions of research in this field to date. (For a more extensive coverage of this research, the reader is referred to the review articles of Guetzkow (1965), Barnlund (1968), Thayer (1967), Porter and Roberts (1972), and Roberts, O'Reilly, Bretton and Porter (1974). We will approach this discussion by first looking at the organization theory literature to see what has been said about communication from that perspective. Then we will turn to some of the various models which have been developed to describe and analyze communication processes in organization settings. Finally, we will summarize some of the empirical research which has been reported in an attempt to bring us up to date on the current "state of the art" in this field.

Organization Theory Perspective

Theories are nets cast to catch what we call 'the world': to rationalize, to explain, and to master it. We endeavor to make the mesh ever finer and finer (Popper, 1959).

As the above quotation suggests, theories are developed in an attempt to capture the basic essence of that part of "reality" which is of concern to the researcher/theory builder. In a generic sense, the basic purpose of theory building then is to develop the capability to explain and predict. In the case of organization theory, this implies an ability to explain existing organization behavior, predict future organization behavior, as well as presumably be able to influence future organization behavior in selected ways. However, when one examines the current state of organization theory, it must be concluded that our capacity to explain, let alone predict, organization behavior is

still very limited. In terms of Karl Popper's above commentary on theories, one might say that we are still trying to agree on exactly where to direct the casting of our net, and beyond that the size of the mesh is so large that a good deal of the essence continues to slip through and escape our theoretical net. Hence, our ability to explain and predict organization behavior is indeed in a state of infancy.

Having made this general observation, it is still instructive to take a brief look at the organization theory literature to see what attention has been given to the issue of organizational communication. In examining this literature we will distinguish four general categories of development: classical theory; neoclassical-human relations approach; behavioral decision theory; so-called modern organization theory.

The more traditional classical organization theory focuses primarily on the structuring/division of work and work units in organizations. Representative of one strand of this approach is the work of Taylor (1911) who was especially concerned with "scientific" ways of organizing work so that workers could more efficiently carry out their assigned responsibilities. Management's role was to establish efficient procedures, regulations, etc. which would specify exactly what and how workers were to do their job. Rigid adherence to such scientifically developed procedures was seen as the key to higher production. Hence, man became an extension of the machinery and technology around him, and the intent was to make him as efficient as possible in working with that machinery. From this point of view, organizational communication per se has no immediate place and might best be seen in terms of a formalized system

for relaying messages (directions, instructions, etc.) in a downward direction from manager to subordinate with no concern for upward feedback.

A second strand of classical organization theory has focused on issues of departmentalization--looking at how to formally structure the total organization into departmental units and sub-units to effectively get the job done. Thus, whereas Taylor's work was directed more at the individual worker level and with the physiological determinants of worker efficiency, this second strand, sometimes labeled administrative management theory, pays more attention to the problem of allocating and grouping task activities into work units which in turn could be structurally linked to each other through formalized chains of command. Of primary concern from this perspective have been issues such as the division of labor, scalar and functional processes, structure, and span of control. Representative of this approach is the writing of Fayol (1949), Weber (1947), Mooney and Reiley (1939), and Gulick and Urwick (1937). To the extent communication is dealt with in this literature, it is seen in terms of flowing in the formalized channels which exist in the formal structure of the organization. Emphasis is given to downward communication to deal with issues of authority, delegation of responsibility, coordination, and control. For the most part, the level of analysis is macro, and the basic principles outlined in these writings are so broad that the specific implications for understanding organizational communication, especially at the interpersonal level, are ignored. Thus, very little direction for developing a theoretical base to understand organizational communication is provided in this set of literature.

A subsequent phase in the evolution of organization theory literature, labeled by some as the human relations movement, attempts to compensate for some of the weaknesses in the classical theories by building in the focus of human behavioral concerns. Whereas the classical theorists were primarily concerned with the formal structuring of work and of the organization, the neoclassical writers pay more attention to the informal organization which overlays the formal structure.

A major impetus to this line of thinking came from the Hawthorne studies, and subsequent concern for the informal, human dimension of organizational life is clearly revealed in the work of writers such as McGregor (1960), Argyris (1957, 1960) and Likert (1961, 1967). Implicit in the work of all these writers is a concern for improving organizational communication in a climate of trust, openness and thorough participation of subordinates in decision-making activities. However, less attention than might be expected is given directly to specifying a particular role for communication in increasing organization effectiveness. In a sense these writers all seem to recognize the importance of effective interpersonal organizational communication practices, but they are not particularly explicit concerning the specific elements and relationships involved. Nevertheless, their focus on the interpersonal dimension suggests fruitful areas of research which could help to clarify the relationship of interpersonal communication behavior to other organizational variables.

Simultaneous to the human relations movement has been the development of a behavioral-decision theory perspective on organizations. The key writers in this area include Simon (1945), March and

Simon (1958) and Cyert and March (1963). Central to much of their work is Simon's principle of "bounded rationality" which posits that man has limits to his ability to comprehend his environment, and that consequently we can expect people to operate rationally only within the context of, or relative to, a frame of reference which is determined by the limitations of their knowledge and information processing capabilities (Simon, 1957; March and Simon, 1958).

Thus, these writers do consider communication and the information processing capabilities of managers as key issues in understanding organizational behavior. Communication in this context is seen to play an important role in transmitting procedures to workers and as a tool/mechanism whereby the uncertainty absorption problem within organizations is dealt with. However, their view tends to be somewhat mechanistic in the sense that no attention is given to the individual and interpersonal dynamics that ultimately figure into the communication process.

The more recent writing in organization theory leans towards a systems perspective and views organizations in dynamic interaction with their environment. Whereas traditional approaches toward organizations take a somewhat mechanistic, static view of organizations, current writers see organizations as probabilistic, organic, open systems attempting to develop internal organizational mechanisms to cope with a complex, dynamic environment. Representative of this perspective is the work of Katz and Kahn (1966), Thompson (1967), Weick (1969) and Lawrence and Lorsch (1967).

Implicit in this above perspective is a recognition that communication plays an important linking role in enabling the organization to sense its

environment more accurately and convey information concerning the environment to appropriate information processing points within the organization so that the organization can cope more effectively with the uncertain environmental context within which it operates.

Internally, organizational communication helps to further protect the central core processes through formal and more spontaneous channels by which updated information can help the organization to respond to and anticipate the external environment. The importance of roles and role linkages in clarifying organizational relationships and communication processes can be seen to further enable organizations and their members to deal with the generalized uncertainty they face. From this perspective, organizational communication is a source for increasing goal and role clarity over time. Thus, these writers do focus directly in information and communication requirements of organizations, but the linkage to managerial communication behavior as it affects colleagues still remains to be made.

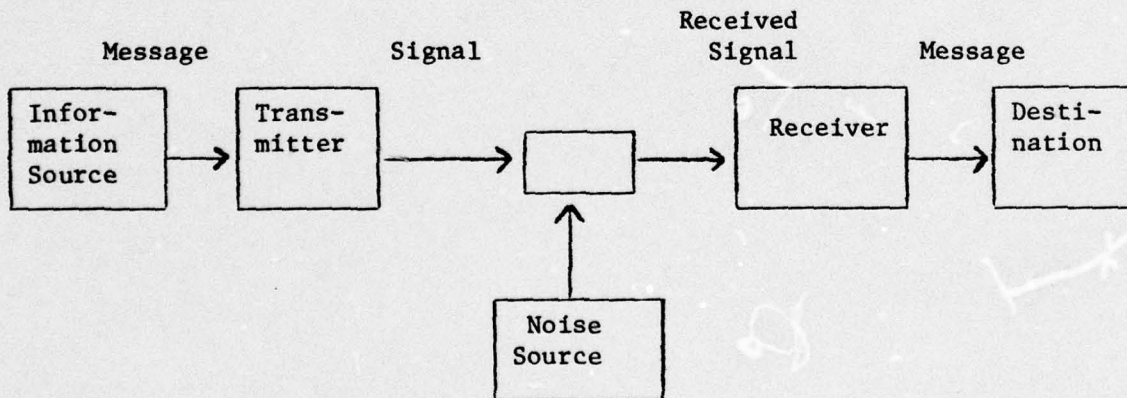
This above very brief sketch of developments in the field of organization theory, while incomplete at best, suggests a pattern in the literature concerning the role of organization communication -- namely, an implicit if not explicit recognition that communication channels and flow are somehow centrally involved in understanding the functioning of organizations. And yet, this same literature for the most part does not directly address organizational communication per se as a fundamental variable for understanding organizational behavior. Hence, we are inclined to agree with Porter and Roberts (1972) that there is relatively little concrete guidance from the organization theory field in developing an appropriate theoretical basis for

viewing communication in organizations.

Communication Models and Perspectives

Turning from the organization theory literature to material more directly aimed at organizational communication we find that a number of theoretical models have been proposed to explain the communication process. We will briefly review some of the major efforts in this area in the discussion which follows. No attempt is made to provide a comprehensive review of such models; rather the intent is to highlight some of the more influential models which have been developed. (A more extensive review of this area can be found in the work of Thayer (1967); Barnlund (1968); and Cherry (1966)).

One of the earliest and most influential models comes from work in the field of telecommunications research (Shannon, 1948; Shannon and Weaver, 1949). They proposed the following paradigm to describe the communication process:



This information-processing model has attracted a great deal of attention by writers in this field, particularly in terms of its potential for measuring the amount of information transmitted. However, it has not proven very helpful to researchers concerned with the social-interpersonal dimension of communication (Porter and Roberts, 1972). In fact, Chapanis (1971, p. 992) goes so far as to argue that for those interested

in communication in a social context, the literature on communication/information theory is essentially useless. Miller (1967, p.45) makes a similar point in noting the neglect by many communications theorists of the human element involved in any communication system.

Other models, focusing more directly on the interpersonal processes involved in communication, have also been developed. Dance (1967), for example, has proposed a helical model of interpersonal communication which emphasizes that communication while moving forward is also feeding back on itself and being influenced by its past behavior. Newcomb (1953) depicts interpersonal communication in terms of a simple model where Person A transmits something about object X to Person B. Westley and MacLean (1957) have extended this model in their work on mass communication by including an additional element 'C' (a filter of sorts) which selects abstractions of object X which it translates into symbolic form and transmits via some channel to the receiver (Person B). More complex models, such as Barnlund's, further delineate various processes such as decoding, encoding, nonverbal, and behavioral cues which influence the communication process.

Thayer (1967) adds another dimension to the study of communication processes by differentiating four levels of analysis for consideration: technological; sociological; psychological; and physiological. He goes on to argue that the first two (technological and sociological) have an impact at the organization level, the sociological and psychological apply at the interpersonal level, while the psychological and physiological focus on the intrapersonal level. In differentiating these levels he argues that we need to be careful to recognize that each level

has its own unique set of dynamics and that we must also be prepared to look at the interface of these levels when we study communication in organizations.

Still another orientation is proposed by Morris (1946) who casts the study of communication in terms of a theory of signs and suggests three different sets of issues to be considered: 1) syntactic issues (that is, a focus on the relationships between signs, abstracted from the users); 2) semantic issues (the relationship between signs and the things, actions, relationships and qualities they are meant to represent); 3) pragmatic issues (the relationship between signs and their users).

Although these models and conceptual perspectives provide only a sampling of approaches taken to the study of communication, they demonstrate some of the many alternative ways of carving out a focus of analysis within the broader context of human communication research. In spite of these efforts, however, it seems that we are still a long way from arriving at a theory or conceptual framework that can adequately explain the nature of the communication process, particularly as it functions in organizational settings. Thayer expressed this point of view in 1967 when he said that:

Perhaps more has been "communicated" about "communication problems" in organizations than any other single topic in the field. Yet this plethora of commentary has not been conducive either to theory building or to theory validation (1967, p. 80).

Unfortunately, this comment remains largely true today, nine years later, despite even more "communication" on the topic since that time.

Empirical Research

Several studies over the last 25 years have empirically investigated

the relationship between communication on the one hand and various measures of performance and satisfaction on the other. Among the early laboratory studies were a series of investigations on the impact of differing communication networks on task performance and morale (Bavelas and Barrett, 1951; Leavitt, 1951; Shaw, 1954, 1964; Mulder, 1960; Lawson, 1965). A common finding was that for simple tasks a restricted or centralized communication net (as, for example, in a wheel shaped network where the central person communicates directly with everyone else, while others communicate only with that central person) was associated with high performance (as measured by speed and accuracy of problem solution) as compared with decentralized unrestricted communication nets (all-channel) where everyone could communicate with everyone else. However, while performance tended to be better in the wheel condition, satisfaction and morale tended to be lower than for the all-channel situation (Leavitt, 1951; Bavelas and Barrett, 1951). With more complex tasks, however, the performance difference between wheel and all-channel tended to disappear. In fact, decentralized nets sometimes outperformed centralized nets (Shaw, 1954, 1956; Lawson, 1965). Meanwhile morale remained higher for the all-channel condition.

Subsequent research (Burgess, 1969; Snadowsky, 1972) provided further clarification on these early findings. In particular, Burgess noted that differences in performance between different communication nets tended to disappear once groups had worked under a given configuration for a period of time and had attained a steady state--particularly when reinforcement was used. Snadowsky's research suggested that when communication was restricted through authoritarian-led groups, these groups took less time to plan than did unstructured groups. However, the former were less efficient in solving of tasks.

In short, these various laboratory studies suggested that communication nets did appear to differentially affect performance under certain conditions but that over time many of these differences in performance seemed to wash out. However, morale and satisfaction appeared to be rather consistently associated with unrestricted, open communication. The implication for ongoing work organizations would be that increased communication flow is likely to enhance satisfaction and, for more complex task environments, performance as well.

Field research in the area of communication has been fairly extensive, but very little of it has focused on the linkage of communication to measures of performance and satisfaction in work settings. One early exception to this pattern is a study conducted by Indik, Georgopoulos and Seashore (1961) involving 27 stations of a delivery organization. Dependent variable data concerning individual productivity and station productivity were obtained from company records which showed individual and station level performance as a ratio of actual hours worked by individuals to "allowed" hours for assigned work based on time study standards. Individual-effectiveness and station-effectiveness measures were obtained from supervisory ratings of individuals and the stations as a whole. Some 975 nonsupervisory personnel in these 27 stations completed on-site administered questionnaires which focused on four areas of concern: superior-subordinate communication; supervisory supportiveness in relation to subordinates; mutual understanding among organizational members; and the influence of superiors and subordinates on organizational operations. Among other things, the results revealed that at the individual level, and generally in the organization as a whole, a high level of performance was positively associated with

openness of communication between superiors and subordinates.

In another field study, this time involving five hospitals, Julian (1966) obtained results which indicated that a free flow of information/communication was related to effectiveness in hospital organizations using normative sanctions and a low degree of control (regular hospitals), while restricting of information was related to effectiveness in more coercive organization structures (mental hospitals). Additional corroboration of the positive impact of open, free-flowing communication comes from a study by Smith and Brown (1964) in a voluntary organization where the highest correlate of member loyalty was the degree to which information flowed freely.

More recently, Roberts and O'Reilly (1974, 1975, 1976) have been conducting field research which provides considerable support for the communication-performance and communication-satisfaction linkages suggested in the previously cited studies. For example, data from junior enlisted military personnel indicated that overall performance was positively associated with perceptions of accuracy of information received, desire for interaction with others, frequent information summarization, high communication openness, perceived information underload (an implied desire for more information), and frequent expansion of information. Poor performance was associated with high interaction with superiors, frequent and deliberate withholding of useful information, perceived redundancy, and overload of received information. Data from senior enlisted personnel suggested that high performance was positively associated with frequent interaction with superiors and use of written communication, while poor performance was associated with perceptions of

information underload. (Selected findings from Roberts and O'Reilly, 1974).

Elsewhere, O'Reilly and Roberts (1976) reporting on a survey of medical care practices found that supervisor credibility (trust, dynamism and informativeness) was positively correlated with perceived information accuracy and communication openness vis-a-vis one's supervisor. These relationships were strongest when considering interaction within the work unit as a whole, but also held at the individual level of analysis as well. While performance measures were not available for the sample, the implication drawn by the researchers was that better performance could be expected in those medical care practices.

A number of other studies have also examined the issue of accuracy of information flow (Read, 1962; Albaum, 1964; Athanassiades, 1973) but they have not considered the potential impact on performance and satisfaction. For the most part, however, these studies reinforce the importance of communication accuracy and are suggestive of the linkage to increased organizational effectiveness.

As the above review of empirical studies focusing on the communication-performance and communication-satisfaction linkages suggests, the extent of research in this area is relatively limited. However, the basic pattern of findings is quite consistent--namely that open, accurate, free-flowing communication behavior between superiors and subordinates appears to contribute both to performance as well as satisfaction of subordinates and generally to increased organization-wide effectiveness. In the research strategy which follows, this particular linkage between communication on the one hand and satisfaction and performance on the other will be of central concern.

COMMUNICATION MODEL

The basic model and research strategy outlined below focuses specifically on the manager's communication behavior with colleagues (subordinates, peers, and superiors) in an organization setting. Within that context we will be investigating the following general working hypothesis: that a manager's interpersonal communication behavior has an important impact on colleagues' attitudes regarding job/role satisfaction, satisfaction with colleagues in general, and also influences colleagues' job performance.

While this general working hypothesis might appear to be intuitively quite reasonable to many people, very little research has been reported which empirically explores this issue. However, our concern goes beyond this basic hypothesis to an examination of particular mechanisms which may help to explain the presumed linkages between a focal manager's communication behavior on the one hand and colleague attitudes and behavior on the other.* More specifically, the following model has been formulated (Figure 1) which is based on an extensive review of the literature on communication, employee performance and job satisfaction, as well as on preliminary research involving a sample of 397 industrial managers. As can be seen, this model posits a set of causal linkages in which a manager's interpersonal communication style (ICS) - as operationalized by the six ICS variables listed in the model - is seen to affect subordinates in two important ways. First of all,

* Hereafter we will use the term "focal manager" to refer to the particular manager whose communication behavior is the focus of concern, while his "colleagues" are those persons in his immediate day to day work environment who constitute his main communication net (subordinates as well as peers and superiors).

it influences the extent to which colleagues have a clear understanding of their role responsibilities and relationships (role clarity), which in turn influences colleague satisfaction with focal person, general role satisfaction and performance. Secondly, the model suggests that a manager's communication behavior creates a certain image of manager credibility in the area of his perceived trustworthiness as a communicator, his informativeness, and dynamism (as seen by his colleagues), and this also has an important effect on colleague satisfaction and performance. A brief review of relevant literature and research follows which provides a theoretical base for our model and clarifies the linkages within the model.

Relevant Theoretical Literature

As has already been intimated, the literature on communication theory, as well as organization theory, has not provided much concrete direction in the development of operational models which can explain communication processes in organizations. Nevertheless, a number of themes do emerge from the literature which provide a context and suggest some of the linkages being proposed in our model. Of particular interest from this perspective, especially as it relates to the issue of role clarity in our model, is the work of Katz and Kahn (1966) and previous research by Kahn, et al. (1964). These researchers characterize organizations as systems of roles in which people are tied together in terms of the functional interdependence of the roles they assume (Katz and Kahn, 1966, p. 38). The concept of role in this context provides a means for linking the individual to the organization as a whole and to others within the organization. In their discussion of the process whereby individuals

assume organizational roles, they distinguish between role sending and role receiving. A role sender (for example, supervisor) will have certain role expectations of another person (for example, subordinate) which he in turn communicates (the sent role) to the focal person. This focal person perceives the sent role (as his received role) which subsequently guides his role behavior. Hence, the process of role taking is seen to involve a number of steps in which possible discrepancies between the original role expectations of the role sender and the actual role behavior of the focal person can occur. A key element in this process is the communication which takes place between role sender and role receiver.

This perspective on the relationship between role expectations and role behavior thus has direct relevance for the model proposed in our research strategy. Moreover, there is a fair amount of empirical research (discussed in more detail later) which supports this role theoretic view and the linkage to communication behavior and organizational performance.

An additional source of theoretical support for our model, especially with regard to the notion of focal manager credibility as an intervening variable in linking the manager's communication to colleague outcomes, is the communication literature which addresses the credibility of information sources and its impact on persuasion and opinion change. Indirectly related to this perspective is the work of Hovland, Janis and Kelley (1953) who were concerned with the question of the credibility of communicators as perceived by the receivers of communication. Their review of research indicated that low-credibility communicators were much less effective in bringing about opinion change.

Other research, more immediately focused on work organizations (Falcione, 1974; O'Reilly and Roberts, 1976), underscores the importance of source credibility and trust in interpersonal communications.

Recent research on this topic suggests three distinct components for evaluating the credibility of a communication source: trustworthiness or safety (which includes a general assessment of the affiliation relationship between communicator and receiver as perceived by the latter); informativeness or expertise (which is both context-free as well as context-relevant in its judgment of the communicator); dynamism (a sort of potency and activity dimension) (Berlo, Lemert, and Mertz, 1969; Falcione, 1974). These three factors have been utilized in some recent research reported by O'Reilly and Roberts (1974) who attempted to get a measure of general credibility of an organization's information milieu and its impact on employees.

In applying this concept of communicator "source credibility" to our model, we are concerned with the impact of a manager's credibility as an information source on his colleagues. More specifically, this variable suggests that a colleague forms an impression of the reliability/credibility of a focal manager based on his (the focal manager's) communication behavior, and that this "source credibility" image in turn influences colleague attitudes toward the focal person, role satisfaction, and affects his performance.

Empirical Research Related to Model

A number of empirical studies have been reported which directly or indirectly provide support for the several linkages hypothesized in our model. However, the operational measures utilized in these studies

have varied quite a bit. A brief review of such research follows.

Interpersonal Communication Style (ICS). The impact of a manager's interpersonal communication style on colleague satisfaction and performance has been discussed in many writings, but there are relatively few studies which have empirically investigated this issue. A previously cited field study (Indik, Georgopoulos and Seashore, 1961) and a number of laboratory studies indicate the importance of open, two-way communication. However, other dimensions of managerial interpersonal communication behavior as reflected in the ICS panel of our model have not for the most part been probed in an empirical research sense.

Role Clarity. The importance and impact of role clarity (or its opposite--role ambiguity) on employee attitudes and behavior has been reported in several research studies. Kahn, and others (1964), for example, indicate that role ambiguity is a concern for a substantial percentage of our labor force. Although the causes of role ambiguity for an individual in an organization cannot be entirely attributed to any given focal manager, clearly a manager does have a primary responsibility to define for and with his colleagues (particularly subordinates) specific job and role relationships. Recognition of this responsibility and relationship to supervisory performance is suggested in a survey conducted by Mandell (1956) who found that supervisors rated low in performance were also rated poorly in their ability to issue clear instructions to their subordinates. Elsewhere, Cohen (1959) has reported that ambiguous task definition was associated with a less favorable attitude toward the superior and decreased productivity. Smith (1957) has also found that increased role ambiguity leads to a decrease in problem-solving efficiency.

More recently House and Rizzo (1972) have reported findings which suggest role clarity as an important intervening variable linking independent variables (organization formalization practices and leadership practices) with dependent variable measures of organization effectiveness, employee satisfaction, anxiety/stress, and propensity to leave or stay. This particular study provides some tangential linkages to communication behavior, but it still does not directly measure specific dimensions of communication behavior which may affect role clarity and dependent measures of concern. Another study cited earlier (Indik, Georgopoulos and Seashore, 1961) points to a direct link between open, two-way communication between superior and subordinate on the one hand and with subordinate performance on the other. Increased role clarity would seem to provide a reasonable explanation for the relationship which was observed in this study, although no measure of role clarity was included in that study.

While these various studies mentioned above do not directly test all the role clarity linkages proposed in our model, in combination they do lend support for the notion that role clarity serves as an important intervening variable for understanding the relationship between managerial communication behavior and colleague attitudes and behavior.

Focal Manager Credibility. Evidence of the linkage between focal manager credibility as an information source and communicator on the one hand and colleague (primarily subordinate) performance on the other is suggested in the work of Gibb (1964) who found that lack of trust in information flow causes groups to operate at lower efficiency, while

Friedlander (1970) in a longitudinal study found that trust facilitated group accomplishment. Similarly, Roberts and O'Reilly (1974) reported a relationship between the three aspects of supervisory credibility mentioned above and subordinate job satisfaction.

The linkage between interpersonal communication behavior and the intervening variable of credibility has not been extensively examined in research settings, although there is some preliminary support for this proposed connection. Deutsch (1958) in a series of laboratory experiments, found communication to be a central variable in the development of trust. However, he did not directly examine the specific kinds of communication behaviors which fit into an ongoing organizational setting. In a more general sense, the notion of credibility/trust being based on authentic, open communication has been consistently suggested in the literature on OD as a precursor to improved organizational effectiveness (Argyris, 1962; Likert, 1967). Hence, there is a fair amount of conceptual support for this link in our model.

Operational Measures for Model Elements

In the discussion to this point, we have proposed a model which posits a relationship between managerial communication behavior, intervening variables (role clarity and focal person credibility) and dependent variable measures of colleague satisfaction with focal person, general job/role satisfaction, and performance in a work setting. The operational measures for these variables are derived from previous work done by this researcher as well as from other organization behavior research. These various measures are discussed in some detail below.

Independent Variables (Interpersonal Communication Style)

The development of the six interpersonal communication style variables

has emerged from research effort involving two phases. The initial task was to identify a range of behaviors which seem to be related to interpersonal communication (Phase I). The next step was to examine, refine, and isolate from this broad range of behaviors some specific sets of behaviors which held promise for further investigation (Phase II). The particular procedures used in accomplishing these phases are detailed below.

Phase I consisted of a series of interviews with 13 managers from three divisions of a large manufacturing organization (Manufacturing, Research and Development, and Marketing), the purpose of which was to begin to identify specific behaviors which describe what managers do when they communicate with others. In these interviews, the investigator asked each manager to think of someone in the organization whom he considered to be a highly effective communicator and identify the behaviors and characteristics which described this person's style of communication. After describing the characteristic behaviors of highly effective communicators, each interviewee was in turn asked to describe behaviors of someone he considered to be a poor communicator. Behaviors relating both to sending as well as receiving messages were identified as part of this process. In addition to these two sets of questions, the respondents were also asked if they noticed and could identify differences in effective communication behavior depending on the directionality of the communication (upward, downward, lateral). However, the consistent response was that no one behavior could be uniquely linked to a particular direction of communication.

Most interviews were tape recorded and where this was not possible, notes were taken during the course of the interview. From these conver-

sations a series of statements were extracted which described behaviors of good and bad communicators as perceived by the interviewees. These statements were then reviewed, refined and reduced to a set of 73 items which captured the range of behaviors which had been identified. Seven-point scales (ranging from always to never) were attached to each item, using anchor words at each point which have been shown to approximate equal intervals in ratio judgments of frequency (Bass, Cascio, and O'Connor, 1974). These items plus two effectiveness questions were combined into one section of a questionnaire labeled "Interpersonal Communication Style" (ICS) which together with other sets of questions constituted a questionnaire package which was used in the second phase of the research.

Having derived a set of items which described interpersonal communication behavior, Phase II of the research involved the distribution of this questionnaire to over 700 managers in an industrial setting. Of the 719 questionnaires sent out, 397 usable responses were obtained (a 55% return rate).

The responses to the ICS section were then subjected to a factor analysis (principal factors) which yielded 12 factors with eigenvalues of one or greater. These 12 factors accounted for 63% of the total variance. This set of factors was then rotated (varimax), and six factors (accounting for 89% of the rotated factor variance) were seen to be suitable for further investigation.

Each factor was analyzed by first identifying those items which had high loadings on that factor and at the same time, lower loadings on other factors. A minimum factor loading cutoff point of .35 was used to initially isolate the key items on a factor, and the loadings

of these items on other factors were in turn assessed to be sure that only items which had at least a .10 higher loading on that factor compared to other factors would be retained. The resulting set of items on a given factor was then studied in order to develop a term or phrase which seemed to give appropriate meaning to the construct represented by that set of items. In this manner key items for each factor were identified and factors were labeled.

An analysis of factor 1 revealed six items above the .35 cutoff and four of these had factor loadings of more than .50. These items all focused on the idea of careful organization of thoughts and choice of words when communicating with others (e.g., chooses words carefully; organizes thoughts before speaking, etc.). Accordingly, this factor was labeled careful presentation.

Factor 2 contained 20 items with loadings of .35 or above, of which 13 loaded .50 or more on the factor. Looking at the 13 items with highest factor loadings, the notion of an open, free flow of two-way communication (e.g., asking for other peoples' views, giving feedback) emerged very strongly and thus this factor was labeled open, two-way communication.

In analyzing factor 3, nine items were identified and six of these had factor loadings of .50 or more. The items pertained to a frank, levelling, self-assured communicating style (e.g., he says what he thinks without mincing words; he levels with others), and the factor was accordingly labeled frankness.

Factor 4 yielded 8 items of which three loaded .50 or more on the factor. The items related to communicator attentiveness in listening to others (e.g., he keeps his mind on what the speaker is saying; lets me

finish my point before he comments, etc.), and the factor was thus labeled careful listening.

Nine items loaded heavily on factor 5 (5 had .50 or more factor loadings), and they consistently referred to the notion of wordiness or lack of brevity (e.g., he tends to run off at the mouth; he drifts from topic to topic; takes a lot of words to say something which could be said in a few words). This factor was, therefore, labeled brevity.

Factor 6 yielded three key items, all of which focused on the notion of natural, relaxed informality in communicating with others (e.g., he's very informal and relaxed with others). Hence, this factor was called informality.

Having identified these six factors and the key items on each factor, the internal consistency scale reliability for each factor was then calculated. As part of this process, items were dropped when they no longer contributed to increasing the scale-reliability or when a .85 scale reliability on a factor was reached. The items were also correlated with item total (factor) scores of the other factors, and where an item correlated higher with a factor score other than its own factor, it was dropped from that scale. This process yielded a set of 25 items for a shortened questionnaire instrument in which the six scales had reliabilities of .76 and above. An additional analysis to examine the retest reliability of these scales was generally quite satisfactory. The test-retest correlation coefficients for a sample of 36 respondents (administered one week apart) were all significant ($p < .01$) and ranged from .36 (informality) to .85 (careful presentation).

It should be noted that the factors which emerged from this research find some support in the literature which exists on the topic of communication, although most of the writing is not based on field-oriented empirically based research. Factor 1, for example, refers to a principle sometimes cited in material on effective speaking which emphasizes the necessity of carefully organizing one's thoughts in order to transmit information to others. In this connection, Petrie (1963) has concluded on the basis of a review of existing literature that messages which are well-organized lead to better comprehension and retention on the part of the receiver. He admits, however, that there is surprisingly little direct research to substantiate this principle.

The notion of open, two-way communication (factor 2) has also been referred to in the literature on occasion. Some of the small group communication research, for example, indicates that an all channel condition of communication in complex problem-solving situations typically leads to better solutions (e.g., Shaw, 1964; Bavelas, 1950). Elsewhere, Burke (1969) argues that "the key to effective communication on the part of a speaker, then, is to obtain some feedback, of one form or another, from his listener(s)." However, he cites no empirical support for this statement.

Frankness (factor 3) fits in with the literature on conflict management which stresses the value of surfacing differing, conflicting points of view in order to yield better decisions and solutions to organizational problems. The notion of attentive listening (factor 4) is consistent with the concern expressed by Rogers (1967) and others that empathetic listening is a key to effective interpersonal communication.

The effects of brevity (factor 5) have not been dealt with empirically to any great extent, although intuition and articles on principles of effective speaking clearly suggest that brief, directed comments are much more preferable than long-winded statements. The relationships of informality (factor 6) to interpersonal communication effectiveness seems logical to the extent that informality increases a readiness to deal openly and honestly with others, although once again little direct research in this area has been reported.

Intervening Variables

Role clarity is measured with a scale developed by Rizzo, House and Lirtzman (1970). The reliability of the six-item scale is .80. As originally used by the above researchers, role clarity was defined "in terms of (1) the predictability of the outcome or responses to one's behavior, and (2) the existence or clarity of behavioral requirement . . .". In developing their scale via factor analysis, however, the items hanging together most clearly were those concerned with the latter dimension.

Source credibility, as indicated earlier, can be viewed in terms of three separate dimensions: trustworthiness, informativeness, and dynamism. The scales used here are derived from the factor analytic work of Berlo, Lemert, and Mertz (1969) as well as Falcione (1974), and they include a total of 20 items which ask the respondent to indicate the extent to which the statements describe his own perspective of his supervisor.

Dependent Variables

One of the immediate questions which arises concerning organizational communication is its relationship to employee satisfaction with the work situation in general. Two dependent variable measures are being utilized

to explore this issue. The first measure focuses on colleague satisfaction with focal persons. The items for this scale are derived from a satisfaction-with-supervision scale with a reliability of .89 (Bass and Valenzi, 1974). The measure of general job/role satisfaction is also taken from a job satisfaction scale developed by Bass and Valenzi (1974) which has a reported scale of reliability of .90.

Apart from these two measures of satisfaction, we are also utilizing a measure of work unit performance with a reported reliability of .95 (Bass and Valenzi, 1974). Recent research (Solomon, 1975) indicates that this scale has reasonably high convergent validity with objective, independently gathered measures of performance.

SUMMARY

This report reviews the background and empirical research leading to the development of a 13-factor communications impact model. In subsequent reports, we will describe how this model can be trimmed to increase its parsimony of explanation as well as how the factors and their links are affected by exogeneous variables such as the time respondent colleagues of focal persons have spent working with the focal persons and how close physically their offices or workplaces are located.

MODEL REPRESENTING IMPACT OF FOCAL MANAGER'S INTERPERSONAL
COMMUNICATION STYLE ON COLLEAGUES

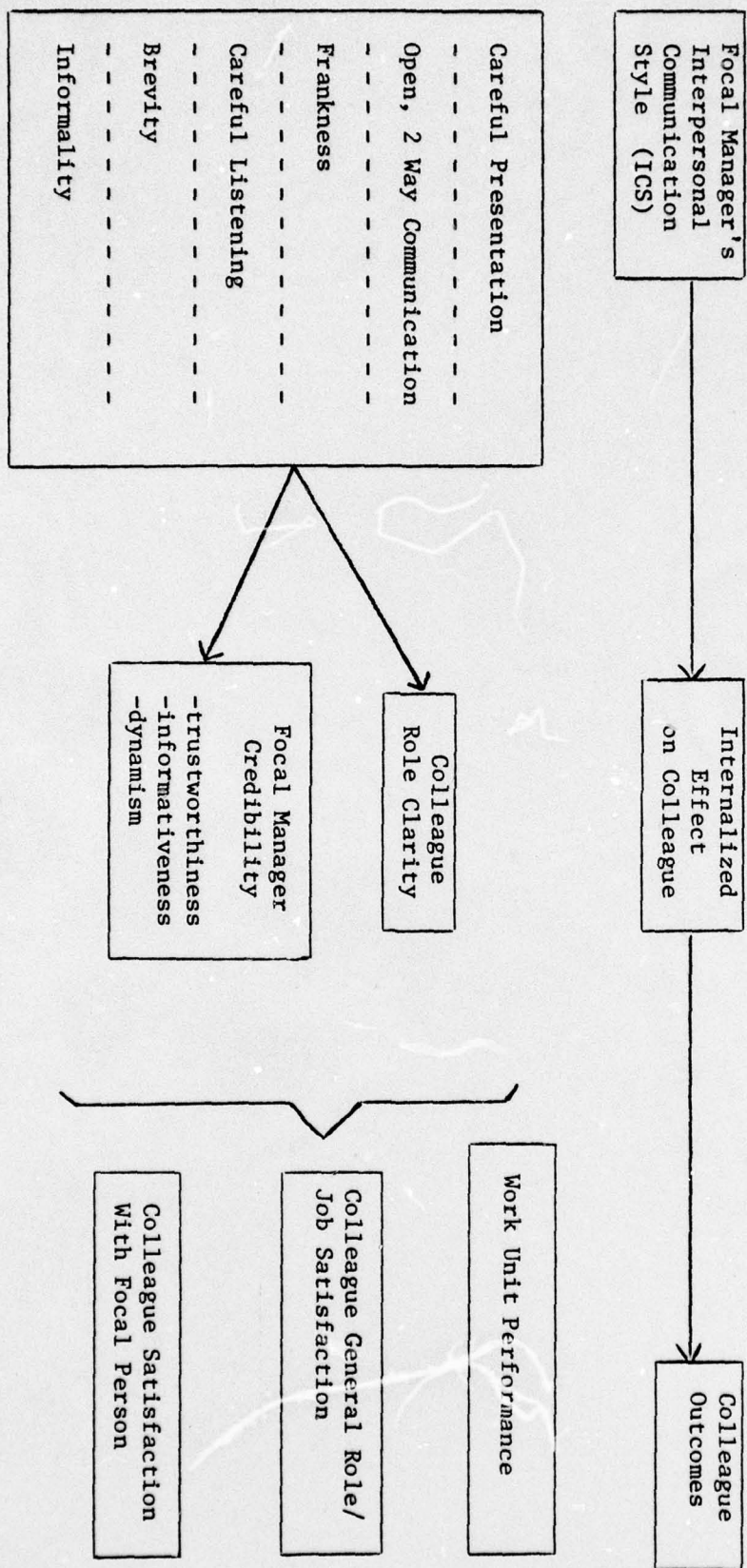


FIGURE 1

REFERENCES

- Albaum, G. Horizontal Information Flow: An Explanatory Study. Academy of Management Journal, 1964, 21-33.
- Argyris, Chris. Personality and Organization, New York: Harper and Row, 1957.
- Argyris, Chris. Understanding Organizational Behavior, Homewood, Ill.: Dorsey, 1960.
- Argyris, Chris. Interpersonal Competence and Organizational Effectiveness, Homewood, Ill.: Irwin, 1962.
- Athanassiades, John C. The Distortion of Upward Communication in Hierarchical Organizations. Academy of Management Journal, 1973, 16 (2), 207.
- Barnard, C.I. The Functions of the Executive, Cambridge: Harvard University Press, 1938.
- Barnlund, D.C. Interpersonal Communication: Survey and Studies, Boston: Houghton Mifflin Co., 1968.
- Bass, B.M. and W.R. Cascio and E. O'Connor. Magnitude Estimations of Expressions of Frequency and Amount. Journal of Applied Psychology, 1974, 59 (3), 313-320.
- Bass, B.M. and Enzo R. Valenzi. Contingent Aspects of Effective Management Styles. Technical Report 67, Management Research Center, University of Rochester, Rochester, N.Y. 1974.
- Bavelas, Alex. Communication Patterns in Task-Oriented Groups. Journal of Acoustical Society of America, 1950, 22, 725-730.
- Bavelas, A. and D. Barrett. An Experimental Approach to Organizational Communication. Personnel, 27, March, 1951, 366-371.
- Berlo, David K. The Process of Communication, New York: Holt, Rinehart and Winston, 1960.
- Berlo, David K. and J.B. Lemert and R.J. Mertz. Dimensions for Evaluating the Acceptability of Message Sources. Public Opinion Quarterly, Winter, 1969-1970, XXXIII, (4), 563-576.
- Burgess, R. Communication Networks and Behavioral Consequences. Human Relations, 1969, 22, 137-160.

- Burke, W.W. Interpersonal Communication. In Eddy, W.B., W.W. Burke, V.A. Dupre, and O.P. South (eds), Behavioral Science and the Manager's Role, Washington, D.C. NTL Institute for Applied Behavioral Science, 1969, 71-78.
- Burns, T. The Directions of Activity and Communication on a Departmental Executive Group. Human Relations, 1954, 7, 73-97.
- Carlson, S. Executive Behavior, Stockholm: Stromborgs, 1951.
- Chapanis, A. Prelude to 2001: Explorations in Human Communication. American Psychologist, 1971, 26, 949-961.
- Cherry, Colin. On Human Communication: A Review, A Survey, and A Criticism, Second Edition, Cambridge: M.I.T. Press, 1967.
- Cohen, A.R. Situational Structure, Self-Esteem, and Threat-Oriented Reactions to Power. In Cartwright, D. (ed), Studies in Social Power, Ann Arbor: Institute for Social Research, University of Michigan, 1959, 35-52.
- Cyert, R.M. and J.G. March. A Behavioral Theory of the Firm, Englewood Cliffs, New Jersey: Prentice-Hall, 1963.
- Dance, Frank E.X. Human Communication Theory, New York: Holt, Rinehart and Winston, Inc., 1967.
- Deutsch, M. Trust and Suspicion. Journal of Conflict Resolution, 1958, 2, 265-279.
- Falcione, R.L. The Factor Structure of Source Credibility Scales for Immediate Superiors in the Organizational Context. Central States Speech Journal, 1974.
- Fayol, Henri. General and Industrial Management, London: Sir Isaac Pitman and Sons, 1949.
- Friedlander, F. The Primary of Trust as a Facilitator of Further Group Accomplishment. Journal of Applied Behavioral Science, 1970, 6, 387-400.
- Gibb, J.R. Climate for Trust Information. In Leland Bradford, Jack Gibb and Kenneth Benne (eds), T-Group Theory and Laboratory Method, New York: John Wiley and Sons, Inc., 1964.
- Guetzkow, Harold. Communications in Organizations, Chapter 12. In James G. March, (ed), Handbook of Organizations, Chicago: Rand-McNally and Co., 1965, 534-573, bibliography.
- Gulick, L. and L. Urwick, (eds). Papers on Scientific Administration. New York: Columbia University, Institute of Public Administration, 1937.

- House, R.J. and J.R. Rizzo. Role Conflict and Ambiguity as Critical Variables in a Model of Organization Behavior. Organizational Behavior and Human Performance, 1972, 7, 467-505.
- Hovland, C.I., I.L. Janis and H.H. Kelly. Communication and Persuasion, New Haven: Yale University Press, 1953.
- Indik, B.P., B.S. Georgopoulos and S.E. Seashore. Superior Subordinate Relationships and Performance, Personnel Psychology, 1961, 14, 357-374.
- Julian, J. Compliance Patterns and Communication Blocks in Complex Organizations, American Sociological Review, 1966, 31 (3), 382-389.
- Kahn, R.L., D.M. Wolfe, R.P. Quinn, J.D. Snock and R.A. Rosenthal. Organizational Stress, New York: John Wiley and Sons, Inc., 1964.
- Katz, D. and R. Kahn. The Social Psychology of Organizations, New York: John Wiley and Sons, Inc., 1966.
- Lawler, E.E. Pay and Organizational Effectiveness: A Psychological Review, New York: McGraw Hill, 1971.
- Lawler, E.E., III, L.W. Porter and A. Tennenbaum. Managers' Attitudes Toward Interaction Episodes. Journal of Applied Psychology, 1968, 52, 423-439.
- Lawrence, P. and J. Lorsch. Organization and Environment: Managing Differentiation and Integration, Boston: Graduate School of Business Administration, Harvard University Press, 1967.
- Lawson, E. Change in Communication Nets, Performance and Morale. Human Relations, 1965, 18, 139-147.
- Leavitt, H.J. Some Effects of Certain Communication Patterns on Group Performance. Journal of Abnormal Social Psychology, 1951, 46, 38-50.
- Likert, R. New Patterns of Management, New York: McGraw-Hill, 1961
- Likert, R. The Human Organization, New York: McGraw-Hill, 1967.
- Mandell, M. Supervisory Characteristics and Ratings: A Summary of Recent Research. Personnel, 1956, 32, 435-440.
- March, J. and H. Simon. Organizations, New York: John Wiley and Sons, Inc., 1958.

- McGregor, D. The Human Side of Enterprise, New York: McGraw-Hill, 1960.
- Miller, George A. The Psychology of Communication, New York: Basic Books, Inc., 1967.
- Mintzberg, Henry. The Nature of Managerial Work, New York: Harper and Row, 1968.
- Mooney, J.D. and A.C. Reiley. The Principles of Organization, New York: Harper and Row, 1939.
- Morris, C.W. Signs, Language and Behavior, New York: Prentice-Hall, 1946.
- Mulder, M. Communication Structure, Decision Structure and Group Performance. Sociometry, 1960, 23, 1-14.
- Newcomb, T.M. The Prediction of Interpersonal Attraction. American Psychologist, 1953, 11 (11), 575-586.
- O'Reilly, C.A. and K.H. Roberts. Trust and Communication in Work Units, Unpublished Manuscript. University of California, Berkeley, 1975.
- O'Reilly, C.A. and K.H. Roberts. Relationships Among Components of Credibility and Communication Behaviors in Work Units. Journal of Applied Psychology, 1976, 61, (1), 99-102.
- Patton, B.R. and K. Giffin. Interpersonal Communication Basic Text and Readings, New York: Harper and Row, 1974.
- Petrie, C.R. Informative Speaking: A Summary and Bibliography of Related Research. Speech Monographs, 1963.
- Popper, Karl R. The Logic of Scientific Discovery, London: Hutchinson and Co., Ltd., 1959.
- Porter, L. and K. Roberts. Communication in Organizations. Technical Report No. 12, July 1972. ONR Contract N00014-69 A-02000 9001. University of California, Irvine.
- Read, W.H. Upward Communication in Industrial Hierarchies, Human Relations, 1962, 15, 3-15.
- Rizzo, J.R., R.J. House, and S.I. Lirtzman. Role Conflict and Ambiguity in Complex Organizations. Administrative Science Quarterly, 1970, 15, 150-163.
- Roberts, K.H. and C.A. O'Reilly. Empirical Findings and Suggestions for Future Research on Organizational Communication. ONR Technical Report (Interim) Contract N000314-69-A-0200-1054, August, 1974.

- Roberts, K.H. and C.A. O'Reilly. Measuring Organizational Communication. Journal of Applied Psychology, 1974, 59, (3), 321-326.
- Roberts, K., C. O'Reilly, G. Bretton and L. Porter. Organizational Theory and Organizational Communications: A Communication Failure? Human Relations, 1974, 27, (5), 501-524.
- Rogers, Carl R. and F.J. Roethlisberger. Barriers and Gateways to Communication. Harvard Business Review, July/August, 1967, 46-52.
- Shannon, C. A Mathematical Theory of Communication. Bell System Technical Journal, 1948, 27, 379-423, 623-656.
- Shannon, C. and W. Weaver. The Mathematical Theory of Communication. Urbana: University of Illinois Press, 1949.
- Shaw, M.E. Some Effects of Problem Complexity Upon Problem Solution Efficiency in Different Communication Nets. Journal of Experimental Psychology, 1954, 48, 211-217.
- Shaw, M.E. Random vs. Systematic Distribution of Information in Communication Nets. Journal of Personality, 1956, 25, 59-69.
- Shaw, M. Communication Networks. In L. Berkowitz (ed), Advances in Experimental Social Psychology, Vol. 1, New York: Academic Press, 1964, 111-149.
- Simon, H.A. Administrative Behavior, New York: MacMillan Co., 1945.
- Simon, H.A. Models of Man, New York: John Wiley and Sons, 1957.
- Simon, H.A. Applying Information Technology to Organization Design, Public Administration Review, 1973, 33, 268-277.
- Smith, Clagett G. and Michael Brown. Communication Structure and Control Structure in a Voluntary Association, Sociometry, 1964, 27, 449-468.
- Smith, E.E. The Effect of Clear and Unclear Role Expectations on Group Productivity and Defensiveness. Journal of Abnormal and Social Psychology, 1957, 55, 213-217.
- Snadowsky, Alvin M. Communication Network Research: An Examination of Controversies, Human Relations, 1972, 25, (4), 283-306.
- Solomon, R. The Importance of Manager-Subordinate Perceptual Differences to the Study of Leadership, University of Rochester, unpublished Ph.D. dissertation, 1975.

Stewart, R. Diary Keeping as a Training Tool for Managers. The Journal of Management Studies, 1967, 5, 295-303.

Taylor, F. Scientific Management, New York: Harper and Row, 1911.

Thayer, Lee. Communication and Organization Theory. In Human Communication Theory - Original Essays, F.E. Dance, (ed), New York: Holt, Rinehart and Winston, Inc., 1967, 70-115.

Thompson, James. Organizations in Action. New York: McGraw-Hill, 1967.