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I am submitting herewith a dissertation written by Janet Howe Gaines entitled "Upward Communication in Industrial Organizations: A Laboratory Experiment." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Communications.

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UPWARD COMMUNICATION IN INDUSTRIAL ORGANIZATIONS: A LABORATORY EXPERIMENT

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Janet Howe Gaines

August 1979

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For Arthur L. Howe, with love

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ABSTRACT

The purpose of this study was to test empirically variables contributing to the frequency and accuracy of information transmitted up the chain-of-command by employees in industrial organizations. Hypotheses were generated from organizational communication theory which predicted the effects of manipulated job situations (problem and routine), trust in the immediate superior, and personal ambition on the following dependent variables: (1) projected frequency with which subordinates transmitted messages upward and (2) distortion of those messages, which could be achieved by withholding information altogether, by puffing or exaggerating details, and by sieving or selectively filtering part of the information.

A pretest survey was conducted at the Aluminum Company of America (ALCOA), Tennessee Operations in Alcoa, Tennessee to establish valid experimental and control treatments. Following the survey, a posttest-only laboratory experiment was executed. Data were gathered from 40 randomly selected exempt ALCOA employees from the Badin Works plant in Badin, North Carolina. Subjects were randomly assigned to experimental or control groups. The former was exposed to a problem work situation identified by the pretest, and the latter received a routine, everyday situation revealed by the pretest as being a neutral job occurrence. Subjects were asked how often (on a five-interval scale) they would convey news about the situation to higher echelons. They then communicated to their bosses pertinent situational details via memoranda which were later content

analyzed for distortions. Finally, the participants completed scales measuring their ambition and trust in their superiors.

Major findings were that job situation, trust, and ambition did not adequately explain the projected frequency with which employees communicated upward; however, they did account for distortion. Secondly, in neutral job situations, trust and ambition were negatively related to projected frequency of communication. Thirdly, of all distortion types, withholdings were most prevalent. Next, in problem job situations, trust and ambition were negatively related to withhold distortions. Lastly, in neutral job situations, ambition was negatively related to puff distortions. Multiple regression analyses were conducted to obtain results.

Industrial managers need accurate data if they are to make intelligent, rational decisions. Much of their information is supplied by underlings who are closer to job situations. This research demonstrated that distortion is a predictable part of a subordinate's behavior. Future investigations could test alternative populations, work situations, and communication networks.

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CHAPTER 1

INTRODUCTION

Civilization and organization are inextricably bound. During all of recorded history, and perhaps even before then, organizations have been vital instruments for coordinating political, military, religious, and all the vast array of human social endeavors. The immense tasks of constructing the pyramids or defeating the Carthaginians stand as tributes to ancient organizations. Contemporary examples of organizational life may be equally grandiose, yet some of today's less exalted enterprises also reveal a considerable amount about the continuing human need for organization. America certainly has no dearth of organizations, as was first observed by Alexis de Tocqueville in the early nineteenth century. De Tocqueville, a Frenchman touring the United States, wrote that the main characteristic of Americans was their tendency to band together consciously in cooperative groups to achieve common goals. Deliberate and purposeful organizations still dominate our society.

Though organizations have always existed, they have not always been studied. Prior to World War I, organizational analysis was almost purely anecdotal (Conboy, 1976). Since then, however, serious investigations have been abundant. One of the broad conclusions made possible by the findings of numerous investigations is that "there are few aspects of an organization's development which are not related in some way to its system of communication" (Smith, Richetto, & Zima, 1972, p. 270). It is preposterous to think of a human organization devoid of all communication because communication, even when ineffective, is a vital component in work groups.

Purpose and Significance of the Study

Most organizational theorists and researchers have pursued communication phenomena from the standpoint of either formal or informal channels. Formal communication, the focus of the current study, deals with data emanating from or proceeding to the apex of established authority and traveling along officially prescribed and sanctioned lines. Upward communication, or messages sent from subordinate to supervisor, is one aspect of the formal chain of command. Such formal structure is necessary "to assure that organizational structure could maintain its identity through changes in personnel" (Johnson, 1977). Yet the current writer does not seek to defend or belittle formal communication--merely to investigate it. By comparison the informal system (at least equal in importance) is far more amorphous, nebulous, and difficult to test empirically at this time. Instead, the present study seeks to isolate variables which affect the accuracy of information transmitted upward in industrial organizations. More specifically, its purpose is to determine whether problematic situations, trust, and ambition account for distortion of messages on the job.

In matters of national or international concern, the adverse consequences of inaccurate intelligence can be tremendous. Curt Tausky (1970) points to historical examples which demonstrate the significance of the upward communication problem. The Bay of Pigs fiasco was undertaken in 1961 by President Kennedy partly because the CIA furnished the kind of information he needed to hear in order to make the decision to invade: the likelihood was high that a general revolt against Castro would ensue if an invasion were initiated. The CIA based its assessment mainly upon the word of

Cuban leaders who had fled to America. The refugees' badly distorted view of the situation was passed all the way up the United States political chain of command, and the result was catastrophe. It is probable that the message became increasingly distorted as it passed upward, and the President's decision-making ability was impeded by the incorrect data he received. By applying the same principle to other (less dramatic) work situations, Tausky maintains that distorted information can cause executives to miscalculate and make inappropriate decisions.

As early as 1952, Planty and Machaver were complaining that executives understood the importance of downward communication but not upward communication. They point out five advantages gained from the upward flow of information:

> 1. Management gets an improved picture of the work, accomplishments, problems, plans, attitudes, and feelings of subordinates at all levels.
> 2. Before becoming deeply involved, management spots individuals, policies, actions, or assignments which are likely to cause trouble.
> 3. By helping lower echelons of supervision to improve their selection of those things that are to be communicated upward, management gets them to do a more systematic and useful job of reporting.
> 4. By welcoming upward communicating, management strengthens the only device for tapping the ideas and help of its subordinates. This gives management a better answer to its problems and eases its own responsibility.
> 5. By opening the channels upward, management helps the easy flow and acceptance of communications down (p. 317).

Since the 1950s the acceptance of upward communication's advantages has spread, and industry possesses numerous participatory management neophytes. More recent discussions of the benefits derived from upward communication can be found in the works of Baird (1977), Sanford, Hunt, and Bracey (1976), and Farace, Monge, and Russell (1977), to name a few.

If authority figures do not receive accurate information from underlings, problems can erupt on the job. Chase (1970, p. 478) says that breakdowns result in messages that are not "accepted, understood, or acted upon." Albaum (1964, p. 21) believes that data flow and analysis "facilitate the making of decisions for purposes of planning and development, control, and problem-solving. Decision-making and planning are simplified and improved by proper performance of the information activity." The current study is undertaken on the assumptions that adequate, accurate upward communication is a requisite for smooth organizational operation and that distortion is a predictable part of subordinate behavior.

Statement of the Problem

Effective vertical communication is a necessity for effective corporate management. Without an honest upward flow of information, top executives may be unaware of what is actually transpiring within the organization. Bormann, Howell, Nichols, and Shapiro (1969, p. 37) describe the intrinsic booby trap in ascending communications:

> They often take much longer to reach their destinations, and as they move from individual to individual up the levels, they often experience the distortions common to messages handed on from one person to another. . . . Much of the so-called red tape and the delay that inhibits quick and decisive action in an organization stems from the cumbersome necessity of sending messages through formal channels.

But delay is not the only problem; distortion is also a possibility. The degree to which correct data are transmitted in the subordinate-to-superior relationship has implications not only for the ego-gratification needs of the sender, but for the overall performance of the organization.

While there are myriad variables which might help determine the nature of upward communication, they can be divided into three important categories: situational, interpersonal, and intrapersonal. Situational

factors include the nature of the work environment under consideration. If employees are operating in a stressful situation, for example, their communication patterns may be affected. Perhaps they communicate details concerning problems differently than details about routine, uneventful, non-problematic occurrences. Other situational variables are organization structure, pay scales, and incentives. Interpersonal variables include a host of interworkings among group participants. Whether employees trust, admire, or seek to imitate each other could account for their communication habits. Coalition and conformity needs are also interpersonal factors which could have considerable impact upon upward communication. Interpersonal conflict, not a rarity in organizations, is another potential factor. Intrapersonal variables are those at work within an individual. Ambition, intelligence, authoritarianism, dependency/insecurity, and self-confidence are all intrapersonal variables which could affect communication. Though they are all interesting, they cannot all be studied at this time. Therefore, for this investigation, problem versus neutral job circumstances will represent situational, trust will represent interpersonal, and ambition will represent intrapersonal variables. These particular factors have already received some attention, but their exact relationship to communication remains ill-defined, as the CHAPTER 2 review of literature indicates.

The rationale for choosing these particular variables is partly personal and partly professional. The current writer feels compelled to pursue only those factors which she finds the most curious and fascinating. In fact, personal interest is the primary criterion for selecting variables to study. Fortunately, there are sound professional reasons which support the personal choice. D. C. Miller (1970) poses

possible motives for picking a problem area, and the current study uses them, as follows:

> 1. Relates to a practical problem.
> 2. Relates to an influential or critical population.
> 3. Fills a research gap.
> 4. Sharpens the definition of an important concept or relationship.
> 5. May create or improve an instrument for observing and analyzing data.
> 6. Provides possibility for a fruitful exploration with known techniques (pp. 3-4).

All six of these criteria are applicable to the current investigation.

Several research questions immediately present themselves. Do some employees transmit upward communications more frequently than others? Does the nature of the situation account for distortion? Are problems reported to superiors with less honesty than favorable or neutral incidents? Do employees who have a high degree of trust in their supervisors have less need for misrepresenting potentially damaging information? Are highly ambitious people more apt to distort in order to help insure that they "look good" and advance in the firm?

The conventional image of the ambitious junior executive might easily include a picture of a person who restricts communication and excludes undesirable details. Except in instances where the subordinate has extraordinary faith and confidence in the integrity of the supervisor, an employee with a strong ascendancy drive may or may not choose to alter message content. Research results on these matters are contradictory and inconclusive. Though there is considerable speculation regarding the behavior of trusting and ambitious people, its empirical support is scant and its relationship to communication remains disputed and unestablished. The laboratory experiment presented herein seeks to examine the unsettled issues.

Limitations and Advantages of the Study

Ideally, the controlled field experiment (defined as "an experimental design executed under naturalistic environmental conditions," Haskins, 1968) is a very useful vehicle for investigating communication issues, especially if a cause-and-effect inference is desired. Internal and external validity reach their zenith in these research plans. L. B. Barnes (1967, p. 77) praises the method because "it implies that the sophistication of the laboratory experiment can be transferred to the field situation, thus furnishing the field worker with a rigorous methodological approach." The researcher must manipulate an independent variable, and not leave the task to chance, so that causal relations can be defined (French, 1953). In addition, random assignment of treatments to randomized groups of subjects and unobtrusive measures are required to insure validity (Haskins, 1972). Bavelas and Barrett (1951, p. 371) argue that "the importance of bridging the gap between the simple, directly controlled experiment and the very complex, indirectly controlled social situation cannot be overestimated."

Realistically, however, the controlled field experiment is almost impossible to execute in organizational communication studies. To date, no controlled field experiment, as defined herein, involving upward communication has been published. First, the organizational researcher is a guest at the firm, as Barnes (1967, p. 78) suggests:

> The various organizational parts and persons may all choose to ignore him, or they may all demand attention simultaneously. When they demand attention, it may not be for purposes of cooperating. They may be only suspicious or curious about "what's going on?"

Roberts and O'Reilly (1974, p. 321) point to a second difficulty:

> Because communication is a process rather than a static variable it is one of the most difficult organizational variables to measure. Behavioral observations are often impossible to make and self-report forms are usually phrased in such a way that they take snapshots of process variables.

The participant observer technique, used so successfully by Kraepelin and Freud (Plutchik, 1974), is impractical here as a tool. The researcher cannot be everywhere to hear and record transactions, especially if there are many subjects. Furthermore, his or her presence would almost certainly alter the content of messages between employees. Confederates could be used, but gaining their cooperation and training them are difficult matters. Next, the problem of contamination is great, for employees in the same firm cannot be prohibited from speaking to each other about whatever topics they choose, including the experiment. Fourth, treatment and control are troublesome, for if the treatment is beneficial, management will want all groups to receive it. If the treatment is undesirable or harmful, management will be extremely reluctant to let it be introduced at all. Finally, gaining permission to experiment with vital, ongoing company projects can prove arduous for the seasoned researcher and impossible for the novice. For these and other reasons, organizational communication research specialists (Bavelas & Barrett, 1951; Davis, 1953; French, 1953; Vroom, 1966; Barnes, 1967; and Roberts & O'Reilly, 1974) conclude that moving organizational communication experiments from the laboratory to the field is far too vexing. Organizational communication questions do not lend themselves well to controlled field experiment designs, and they place an almost intolerable burden on the researcher. Barnes' summary (1967, p. 79) echoes the sentiments of the other writers:

> The field experimenter is thus left with an ideal (classical design), a prescribed role (manipulator and controller of variables), and little hope of achieving either in an organizational setting.

If the controlled field experiment is not feasible, the laboratory experiment is the next best thing, for internal validity is high and designs are simpler to execute. Nevertheless, a laboratoty experiment always oversimplifies variables found within complex organizations, and all the shortcomings of studies executed in unnatural conditions are found in the methodology of the current laboratory experiment. External validity is threatened by experimenter effects, atypical reception of messages, subject matter of messages, and sampling of subjects (Haskins, 1972). Fortunately, randomization means that all these factors will be present in approximately equal degrees for both the treatment and control groups.

Making the laboratory experiment as valid as possible is imperative. R. L. Winkler (1973, p. 266) posits:

> Although the behavior of individuals in unrealistic situations may be of some interest, it is of little practical interest with regard to making inferences and decisions in the real world unless the results can be generalized appropriately. Therefore, the need for more realistic experiments seems clear.

If students are used as subjects, then results cannot be generalized to exempt employees. But if exempt employees of a firm are participants, then one common fallacy of the laboratory experiment (sampling of subjects) is lessened. Conducting the experiment on company premises is not exactly equivalent to having subjects receive the treatment in totally natural working surroundings, but it is as close as one can come. In short, the experiment conducted herein is as realistic as possible within the limitations inherent in laboratory experiment designs.

Gaining company officials' approval to conduct the current experiment was potentially a delicate and problematic process, but advice on how to proceed is available. Hillis and Wortman's experiment (1976, p. 95) finds that the researcher "should clearly and unambiguously stress the scientific necessity for randomization and for untreated control groups in treatment-control experimental designs." They also recommend that the long-range usefulness of results be emphasized. If the researcher encounters difficulty in obtaining cooperation from an organization, that fact should be noted. Campbell and Stanley (1963, p. 19) warn that:

> There remains the possibility that the effects validly demonstrated hold only for that unique population from which the experimental and control groups were jointly selected. This possibility becomes more likely as we have more difficulty in getting subjects for our experiment. . . . It would seem well for research reports to include statements as to how many and what kind of [organizations] were asked to cooperate but refused, so that the reader can estimate the severity of possible selective biases.

The present researcher contacted two plants of the Aluminum Company of America (ALCOA), one for the pretest and one for the experiment. Both plants immediately agreed to allow the researcher to conduct her study in the form she proposed.

In conclusion, practitioners in the field (i.e. company executives) are confronted daily with inaccurate communications coming up the chain of command. Predicting and demonstrating which factors increase the distortion would be of intense interest and utility to managers who actually grapple with this problem. If executives are cognizant of the variables which tend to produce distorted communications, they can be on guard when these variables exist. They can work with employees to reduce the variables causing difficulties. And ultimately they may be able to diminish distortion--an ultimate goal worth pursuing.

At the present time, research findings in this aspect of organizational communication are contradictory and inconclusive, so the current study seeks to re-examine the disputed variables. Determining whether problem situations (or job occurrences which present uncertainty, perplexity, or difficulty), trust (or expectations held by subordinates that their bosses will treat them fairly), and ambition (or personal striving to achieve excellence and be rewarded for it) motivate exempt employees to send and distort upward communication is the study's purpose. Though a controlled field experiment is possibly the ideal method to test communication hypotheses, it is not feasible in this instance. Instead, a laboratory experiment is undertaken and attempts are made to make the experiment as realistic as possible in order to enhance external validity.

CHAPTER 2

LITERATURE REVIEW

Virtually all of us today are organizational men and women. We belong to industrial, business, labor, educational, military, governmental, social, professional, religious, philanthropic, and numerous other varities of organizations. More than nine out of ten persons who work are directly affiliated with task-oriented organizations (Levinson, 1973). When leisure as well as work activities are analyzed, there are very few individuals who are uninvolved with organizations.

Since organizations are so pervasive, their study is undertaken from several viewpoints and within various fields. Sociologists traditionally focus on the structure, psychologists on the behavior, political and management scientists on the power, and industrial engineers on the technology found within organizations. In addition, scholars from different academic disciplines empirically examine communications questions. None of these investigative approaches seems to have clear superiority, however, and organizational analysis remains distinctly interdisciplinary in nature (Porter, Lawler, & Hackman, 1975; Smith, Richetto, & Zima, 1972; Hinds, 1957; Goldhaber, 1979). Theory and research have not yet been synthesized into a single, congruent collection of literature in one field. Apparently, those who aspire to understand how organizations function and to administer them well are required to have a generalized, interdisciplinary knowledge of the subject. Regardless of the discipline to which an investigator feels firmest allegiance, a complete and well-rounded study of organizations necessarily includes a probe into communications issues.

Perhaps because communication is widely recognized as being inextricably enmeshed in healthy organizational life, C. O. Krush (1973) facetiously maintains that a malady known as the "communication breakdown" is quickly replacing original sin as the explanation for the world's troubles, and "good" communication is the panacea. Krush believes that this attitude is based on the naive assumptions that forthright communication will eliminate conflict, that continuing disagreement is caused by poor communication, that it is to everyone's advantage to be unambiguous, and that communication failure will disappear if listening, speaking, and reading skills are improved. The fact is, however, that effective transmission of ideas may uncover as many problems as it eliminates. Philosophical and other conflicts may exist camouflaged in conditions of inadequate information flow, so candid and clear communication may be the culprit in organizational strife instead of the cure. Despite this necessary warning against a simplistic view of communication's healing power, the impact of effective communication systems should not be underestimated.

Communication in Organizations

Regardless of the particular angle from which an organization is viewed, operational definitions of the concept are usually provided. There are almost as many definitions of organizations as there are studies about them. For instance, organizations have been called "human groupings deliberately constructed and reconstructed to seek goals" (Bormann, Howell, Nichols, & Shapiro, 1969, p. 47); "a network of interdependent relationships" (Goldhaber, 1979, p. 29); and

> Two or more individuals who recognize that certain goals can be better achieved through interdependent rather than individual action, take on information and/or materials from the larger environment, operate on them in some fashion, and return the modified inputs to the environment (Farace & MacDonald, 1974, p. 2).

A synthesis of existing definitions is undertaken by Porter, Lawler, and Hackman (1975, p. 69) when they describe organizations as:

> (1) who: composed of individuals and groups, (2) why: in order to achieve certain goals and objectives, (3) & (4) how: by means of differentiated functions that are intended to be rationally coordinated and directed, and (5) when: through time on a continuous basis.

The authors compare their own definition to those of others in the following manner (p. 70):

1. who--composition
two or more persons (Barnard, 1938)
a number of people (Schein, 1970)
a group or cooperative system (Gross, 1968)
groups of two or more people (Strother, 1963)
at least several primary groups (Simon, 1952)
social units (Litterer, 1965; Etzioni, 1964)
collectivities (Scott, 1964)
2. why--orientation toward goals
devoted primarily to attainment of specific goals (Etizioni)
achievement of some common explicit purpose or goal (Schein)
obtaining a set of objectives or goals (Litterer)
some kind of collective goal(s) or output(s) (Strother)
pursuit of relatively specific objectives (Scott)
an accepted pattern of purposes (Gross)
toward ends that are objects of common knowledge (Simon)
3. and 4. how--function and coordination
differentiation of function (Gross)
some kind of differentiation of function (Strother)
[differentiation in] terms of authority, status and role (Presthus)
division of labor and function (Schein)
rational coordination of activities (Schein)
high degree of rational direction of behavior (Simon)
conscious integration (Gross)
subject to criteria of rationality (Thompson)
structured interpersonal relations (Presthus)
5. when
more or less continuous basis (Scott)
continuity of interaction (Gross)

In situations where people must work together (organizations, loosely defined), they must exchange information (communication, loosely defined). Communication is therefore referred to as the "neural system" of an organization (Davison & Yu, 1974, p. 83). The communication system is such an integral part of an organization that the two are sometimes difficult to separate. Organizations depend heavily upon data transmission in order to achieve goals, coordinate functions, furnish intelligence for rational problem solving and decision making, and bolster group morale.

Organizational communication occurs within a complex system where there may be hundreds of senders, receivers, and messages that are transmitted up, down, and across chain-of-command lines. When analyzing communications systems, the people's attitudes, interpersonal affiliations, needs, and skills could all be considered. The messages' media, direction, and ease of flow may also be important. Next, the organizations' structures, power bases, and methods of exercising control are of great concern. Finally, the environment--its influence and degree of turbulence--could be taken into account.

Obviously, the field of organizational communication, as it has been introduced and defined, is quite large and in noticeable need of narrowing if hypotheses are to be developed and tested empirically. The upward flow of information and the variables which help determine it are vital aspects of organizational communication and are therefore chosen for intensive investigation herein. The literature indicates trust and ambition to be strong contenders for influencing communication. Other variables have been investigated but do not seem to require more amplification.

Upward Communication in Organizations

Intentionally or not, much transmission of data is arranged hierarchically. Individuals with more authority communicate to those with less authority: parent to child, teacher to pupil, police officer to lawbreaker, boss to employee. While the child, pupil, lawbreaker, and employee may also do their share of communicating, more emphasis and legitimacy may be placed on messages originating from the parent, teacher, police officer, and boss. This is the essence of vertical communication. While it is not unidirectional (messages may flow up or down the hierarchy), less credence is frequently attached to information transmitted upward (Thayer, 1961; Strenski, 1970: Simpson, 1969). Ideas pertaining to upward, chain-of-command communication come to us from the classical theory of organizations.

The classical or scientific management school is more concerned with the design than with the people of an organization. Henri Fayol, Max Weber, F. W. Taylor, and other advocates of the classical approach are concerned with issues such as division of labor, levels of authority, mechanisms for control, and job functions. The organization chart is a primary tool for determining officially sanctioned duties and communication networks.

The first systematic attempts to study organizations were the efforts of classicists. According to Goldhaber (1979, p. 32),

> Classical theory evolved historically from the pre-World War I "scientific management" movement which described man as a rational, economic being who could best be motivated at work by such "carrot and stick" techniques as piecework systems, bonus systems, time and motion studies, and cost figuring systems.

In the 1940s Henri Fayol suggested managerial principles that typify the beliefs of the classical school: labor division, power, discipline

(obedience), unity of command (serving only one master), unity of directon (following only one plan), subordination of individual concerns to the interests of the organization, fair play, equity, centralized authority, low personnel turnover, good morale, and chain of command.

The formal structure of an organization prescribes superior-subordinate relationships and official communication networks. A job-task pyramid or chain of command usually describes the structure graphically. Authority is seen as emanating from the top of the hierarchy and spreading downward through delegation of responsibility. The job-task pyramid therefore illustrates an idealized method of thinking about how the organization operates to achieve its goals. Classical theory fails to go beyond this formal view and "tends to treat any deviates from the established pattern as undesirable and unnecessary" (Rice & Bishoprick, 1971, p. 21). Some now maintain, however, that classical theory is obsolete and that newer directions for the study of organizations are necessary.

The chain of command requires that communications either originate from or proceed to the established authority at the top of the pyramid. Formal communication may be either vertical or horizontal, but major legitimacy is placed on downward messages. Vertical communication is defined as "the transmission of information in the superior-subordinate relationship" (Price, 1968, pp. 167-168). Horizontal communication is transmission of data among peers.

Vertical communication has often been the subject of studies in industrial corporations. For instance, an investigation by R. L. Simpson (1969) advances the notion that mechanization diminishes the

necessity for communication because a machine replaces a foreman. Simpson also reports that automation (extreme mechanization) magnifies the need for communication because employees have to cope with mechanical malfunctions. More specifically, he discovers that: (1) low mechanization yields high vertical communication, (2) medium or traditional mechanization yields low vertical communication, and (3) high mechanization yields high vertical communication.

One of the most frequently used conceptual models to represent classical thinking and vertical communication is the bureaucracy, as illustrated in Figure 1.

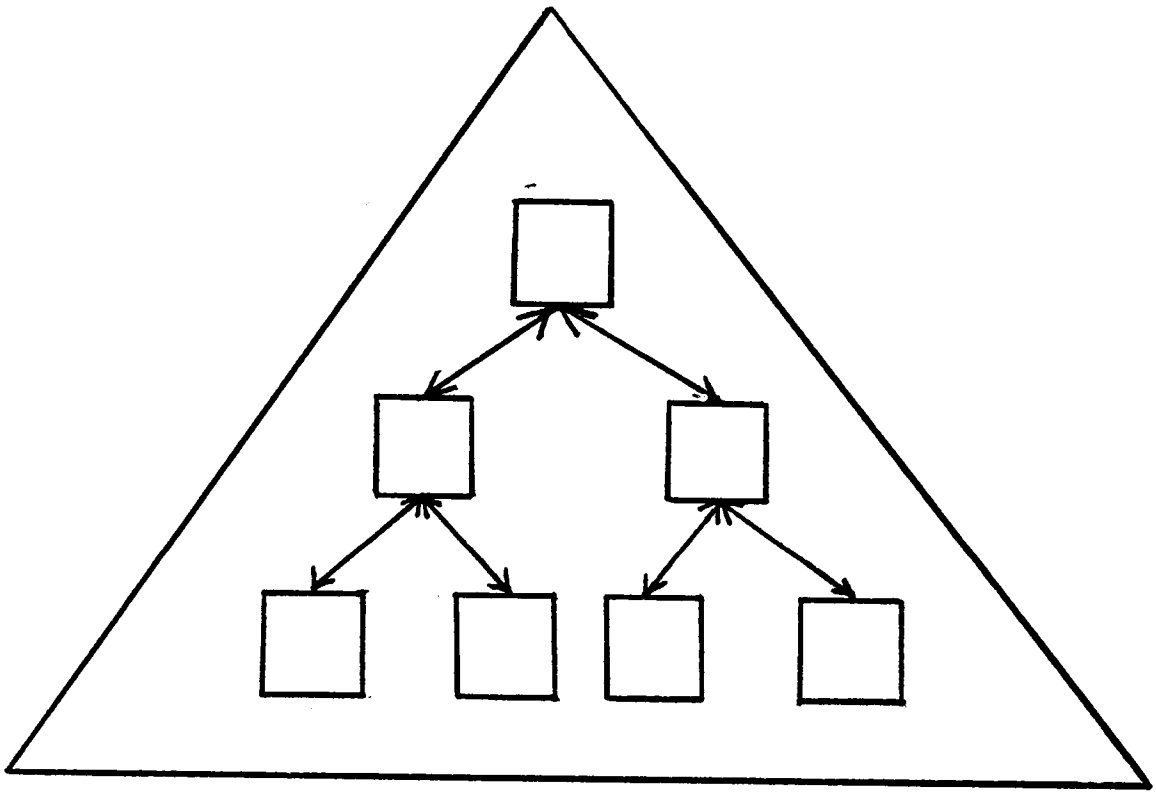


Figure 1

Vertical Communication in the Bureaucracy

Here is represented the chains of unity and command, centralized authority, and other principles advanced by Weber and others. In common usage, "bureaucracy" often describes the pathological, inefficient, red-tape conditions that exist in the administration of many large and complex operations. In organizational theory, however, "bureaucracy" is a value-free term describing an organizational structure which may operate either efficiently, inefficiently, or somewhere in between. Weber and his followers consider it to be the ideal way to maximize stability. Bureaucracies still have their devotees, for J. L. Price (1968) conjectures that organizations which emphasize traditional, bureaucratic communication processes are apt to be most successful. More recently (1976) Francis Rourke hypothesizes that bureaucratic communication

> enhances the likelihood that discrete policy decisions will be consistent with each other. Hierarchy is thus an instrument for coherent policy-making, and in this sense at least, an aid to rational calculation (p. 130).

Bureaucracy can exist in many degrees. The greater the number of administrative levels, the smaller the span of control per manager; the larger the number of required channels of communication, the "taller" an organization is considered to be. On the other hand, "flat" organizations reduce the number of levels through which messages must travel, thus reducing the degree of bureaucratic control but increasing the risk of information overload (entropy). Figures 2 and 3 illustrate tall and flat organizations.

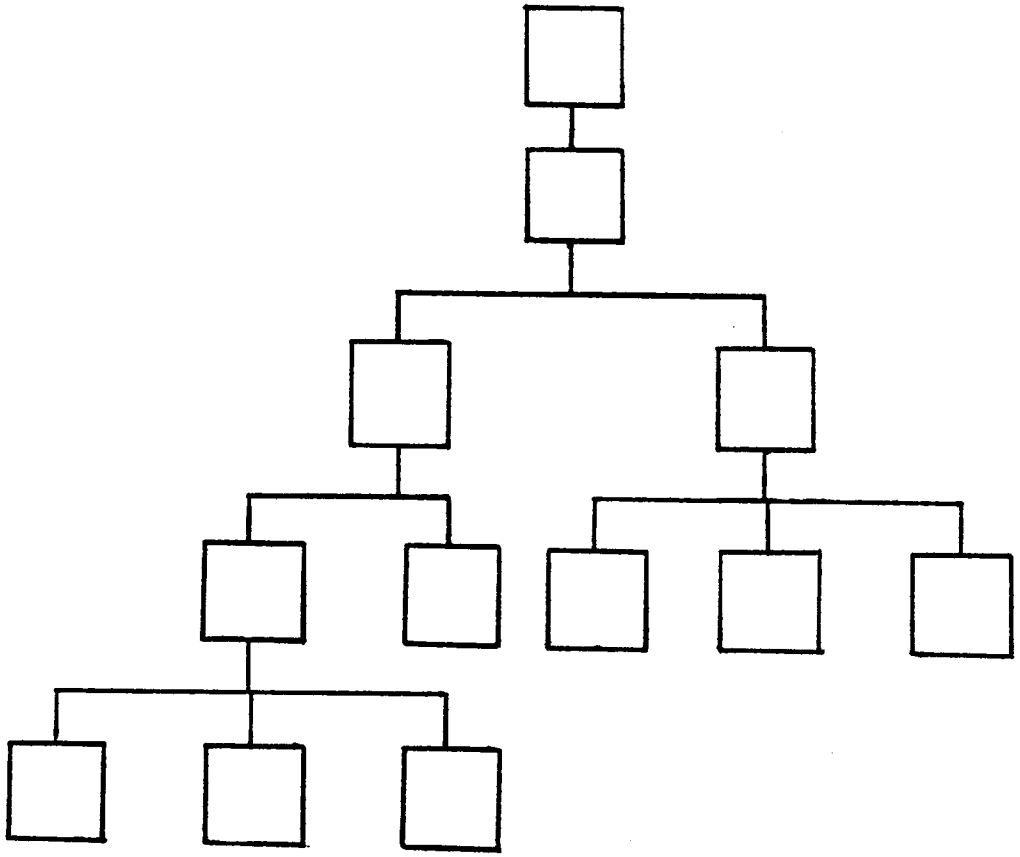


Figure 2

Tall Organization

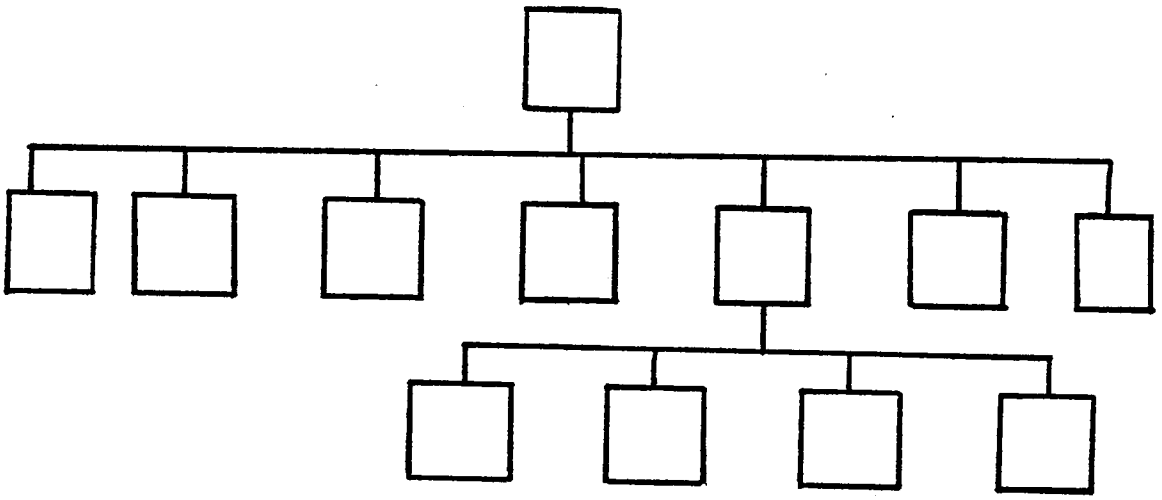


Figure 3

Flat Organization

A laboratory experiment (Carzo & Yanouzas, 1969) tests tall and flat organizations and measures their effects on performance. Not surprisingly, results show that while it takes much more time to process and approve decisions through the multiple levels of tall organizations, flat organizations take longer to resolve communication and personnel difficulties and to coordinate energies. Another study finds that "there is a tendency for those managers who favor an authoritarian view to be less successful if they are in a flat organization and to be more successful if they are in a tall one" (Grishelli & Siegel, 1972, p. 621). Advantages of tall and flat structures therefore would seem to be related more to communication and other preferences rather than to task performance.

The special characteristics of upward communication in business are of primary concern to the study undertaken herein. Under some circumstances, upward communication is a highly prized commodity. One survey (Lawler, Porter, & Tannenbaum, 1968) indicates that middle managers prefer interactions with superiors to interactions with subordinates. The researchers speculate that such preferences result from the fact that managers have fewer opportunities for contact with their superiors. Contact thus becomes a special event, more significant than daily dealings with underlings. In his pioneering article concerning upward communication, A. R. Cohen (1958, p. 41) explains yet another reason why upward communication may be desired by low echelon members of a work group:

> Low-status persons may have fantasies about occupying high-status positions and may strive to communicate with high-status persons as a substitute for actual locomotion when actual locomotion is not possible. This is, in effect, a "status-approximation" theory of communication.

On the other hand, Cohen also discusses the "uneasiness often felt by persons with low rank when interacting with those of high rank, because of the power high-ranking individuals possess" (1958, p. 41). Under some conditions, upward communication is neither sought by subordinates nor welcomed by superiors, although few supervisors may be willing to acknowledge publicly a lack of concern for employee input. Disagreement can thus erupt as to how receptive the boss actually is, so misconceptions about the quality of upward communication run rampant. Smith and Wakeley (1972) report on a survey conducted among top executives, foremen, and laborers in one company. Opinions concerning freedom to discuss job problems, consultation policies, advance notice about change, and understanding of others differ significantly. For example, 90% of the top executives say that foremen would not hesitate to discuss job problems with superiors, but 67% of the foremen say that they actually feel free to do so. Then 85% of the foremen say that their laborers feel free to discuss problems, yet only 51% of laborers agree. Concerning consultation, 70% of top people state that they consult their foremen when making decisions, but 52% of foremen report being consulted. And while 73% of those same foremen claim that they consult laborers, an astonishing 16% of laborers believe they are consulted. The topic of advance notice about changes reveals similar discrepancies. Seventy percent of executives report that they give notice, and 27% of the foremen

agree; 40% of foremen say that they give notice, and only 27% of laborers agree. Finally, 90% of the top executives believe they understand their foremen's problems well, but only 60% of foremen feel understood; 95% of foremen claim to understand the laborers' problems, yet 34% of laborers agree. In short, it appears easy to have the mistaken belief that subordinates are communicating their true feelings up the chain of command or that superiors understand subordinates.

Why are mistaken concepts regarding the openness of communication channels so common? G. A. Bassett (1968) believes that businesses are so oriented to classical theory and so concerned with the legitimacy of downward messages that there is no real mechanism for hearing and attending to information transmitted upward. The result is that data originating from lower-level employees are "muted." In fact, employees may begin to wonder if executives ever listen at all. This complaint by Church (1967, p. 183) is typical of satires on upward communication:

> If messages flow downward through the hierarchy so fast that they seldom register, messages aimed upward travel so slowly that it seems safe to say they never get started. It is only the most persistent child or student [or employee] who manages to get himself heard. My feeling about most organizations is that they are governed by the Wizard of Oz. Lights flash, there is much hissing and puffing of smoke, portentous proclamations thunder forth, but one questions whether there is anybody there.

In virtually every case someone is indeed up there, but subordinates may have to develop special talents in order to get through to those at the top. Management by Objectives (MBO), a goal-setting and performance evaluation technique currently in vogue at many organizations, is one example of a system developed partly to improve communication

skills. MBO purports to facilitate dialogue between those at the top of the hierarchy and those further down the line. If employees do not find success with MBO, they might heed the advice of Robbins and Jones (1976) who write that people who communicate well with their superiors must master several fundamental principles. For instance, the underlings should know their own jobs and responsibilities, know the work and personal needs of their supervisors, and know what types of information should be shared with executives. Though warning that there is no need to become a daily gazette, Robbins and Jones believe that material to be communicated upward includes (1) status reports on long-range undertakings, (2) completion of specific assignments, (3) deviations from standard procedures, and (4) predictions of potential trouble areas. Reaching the Wizard may become easier if subordinates focus on these issues.

Yet even when such situations do occur, important messages from employees to managers can become garbled or lost. Lee Thayer (1968) categorizes the barriers to upward communication as structural, interpersonal, individual, economic, geographic, temporal, channel, and media. Structural barriers include the physical distance in an organizational hierarchy which can cause delays in conveying information. Interpersonal barriers include the feelings and inter-workings among participants in a work group. Individual barriers are numerous and may involve a person's management philosophy. There is some evidence (Robbins & Jones, 1976) that if executives value open communication, act accordingly, and expect others to do likewise, free exchange of ideas is likely to occur. If, however, managers are aloof, act unilaterally, and attempt to resolve problems alone,

information swapping will be reduced. G. L. Hinds (1957) and G. Gimmel (1970) find that the communication behavior of the top executive determines the communication pattern of the entire corporation. Furthermore, individuals may selectively listen only to some messages and/or subordinates. W. R. Kelly (1963, pp. 104-105) speculates further on intrapersonal obstacles to an executive's communication:

> While he may not even be aware of it, his mind, in an effort to maintain a sense of proportion or balance, has developed a protective wall which will filter in only those things which it considers essential or interesting. . . . Another block, of course, exists inside this wall of protection. How well does this mind receive? How fast does it assimilate knowledge?

All the above obstacles to communication can result in misinformation. Distortion may often be considered an inescapable part of organizational life, though few executives would like to know that they are victims of it. What exactly is meant by distortion? O'Reilly and Roberts (1974, pp. 253-254) claim that

> distortion usually involves omission, differential selection, and preferential placement rather than prevarication. A simple, effective method of filtering information, then is to select only certain aspects of it for transmission.

To accent the positive, one singles out favorable information; to minimize the negative, one blocks out unfavorable messages. In a later study, O'Reilly (1978, p. 175) holds that "information distortion is defined as the incorrect reproduction of objectively correct information and can result from either conscious or deliberate alteration or unconscious manipulation." He goes on to say that distortion can include "(1) the blockage or omission of information, (2) summarization or condensation, (3) changing the form of the message, and (4) expanding or emphasizing certain details."

To be sure, there are many times when subordinates tell their bosses the complete and honest truth (as far as anyone can ever know the complete and honest truth). Yet H. Simon (1957) only lists three instances where misrepresentation diminishes: when unpleasant or harmful results are not anticipated, when the superior has a justifiable need-to-know, and when the superior is apt to hear the story from other sources anyway. Focus here is on messages which are distorted as they proceed up the chain of command.

According to Lee Thayer (1961), the organization's structure may be the cause of distortion. The bigger the organization's structure and the more levels through which a message must travel before reaching its destination, the more distortion will probably occur. The original message may be added to or subtracted from, as is known from studies of rumor transmission (Davis, 1953; Goldhaber, 1979).

There is also copious evidence that good news travels unimpeded while bad news is "stonewalled." Reluctance to pass unfavorable or undesirable news can be traced back to ancient Greece where messengers bearing bad tidings were frequently executed. Though we do not fear such severe punishment today, we still attach a stigma to the one who must convey unpleasant messages. This theory that bad news is distorted (transmitted less completely and accurately) than good news is borne out in laboratory experiments by Rosen and Tesser (1970; 1972). The "mum" effect, or keeping quiet about undesirable news, is the dependent variable measured in the studies. Subjects are seated in separate rooms ostensibly to participate in a research project, though the work given to them is unrelated to the experiment. They hear an announcement that Glenn Lester, a confederate, is supposed

to call home to receive good (or bad) news. Glenn Lester then walks in the room. When subjects hear that the news is bad, they tell Lester to call home but do not say why. When the news is good, subjects tell Lester all they know. In other words, unwillingness to relay information is directly dependent upon the transmitter's inference concerning the pleasing nature of events.

Closely related to the findings of Rosen and Tesser are those of W. H. Read (1962, p. 3). Read's survey of three corporations confirms that:

> Pleasant matters are more likely to be communicated upward than unpleasant ones, achievements are more likely to pass upward than information about errors or difficulties encountered at lower levels. . . . This screening of information passed upward is likely to be at a maximum when the information content is of a type which might reflect negatively upon the competence and thus, indirectly upon the security or progress of members of the subordinate level: content such as problems, current and unsolved, faced by members at this level.

Furthermore, the laboratory experiments and surveys of C. A. O'Reilly (1978, pp. 175-176) add further credence to this notion. O'Reilly concludes:

> Two situational variables are postulated to increase the likelihood that a sender will distort a message. (1) the type of information being transmitted, and (2) the directionality of information flow. In the first instance, information which reflects either favorably or unfavorably on the sender, or information which is perceived as important or unimportant to the receiver may be singled out for sharpening or leveling by the sender. In the second instance, there exists some empirical evidence which suggests that information being transmitted upward in a hierarchy is perceived and perhaps treated differently than information flowing laterally or downward.

Another interesting study reveals still more drawbacks to vertical communication as idealized by theorists in the classical school of organization. In a laboratory experiment involving university

professors and police officers, J. C. Anthassides (1973) finds that subordinates believe distortion of upward communication to be essential in helping them attain goals and fulfill needs. The research project indicates that "distortion of upward communication is negatively related to level of security and positively related to achievement of needs" (p. 207).

Gimmel (1970) presents some untested hypotheses concerning upward communication. He theorizes that subordinates conceal or distort because of fear. If the lower echelon employees are convinced that admitting certain facts or judgments may thwart the attainment of personal or work goals, they will not admit those facts. Upward communication is thus more complex than originally thought by classicists.

Breakthroughs in Human Relations Thought

About the time that the organization classicists began publicizing their findings about hierarchy, chain of command, and upward communication, a research team from the National Academy of Sciences began to investigate the correlation between productivity and lighting intensity at the Western Electric Company's Hawthorne plant. When no relationship was found, a second group of researchers, guided by Elton Mayo of the Harvard Business School, began another series of experiments, lasting from 1927 to 1932, on working conditions at the same plant. While testing the lighting conditions, the researchers found that productivity increased in all test groups, even in the group where the lights were almost completely turned off. Mayo and his associates attributed this phenomenon, termed the "Hawthorne

effect," to the fact that the workers knew they were receiving special attention, even though the attention resulted in adverse working conditions. Those studies resulted in nothing less than a revolution in organizational theory and practice--the human relations movement.

According to the human relations school, the employees want their jobs to provide

> security of, progress toward, and justice with respect to: (1) possession of means; (2) optimum performance; (3) health or internal harmony; (4) understanding; (5) autonomy, or freedom of movement and decision; (6) integration, or significant and effective relatedness; (7) respect. (Dale, 1965, p. 246.)

Unlike classical theorists, advocates of human relations recognize the emotional needs of employees and the differences that frequently exist between personal and organizational goals.

The criticism leveled against the human relations movement is that happy employees are not necessarily productive or motivated employees. Frederick Herzberg satirizes the school (1968, p. 54):

> Over 30 years of teaching and, in many instances, of practicing psychological approaches to handling people have resulted in costly human relations programs and, in the end, the same question: How do you motivate workers? Here, too, escalations have taken place. Thirty years ago it was necessary to request, "Please don't spit on the floor." Today the same admonition requires three "pleases" before the employee feels that the superior has demonstrated the psychologically proper attitude toward him.

Despite this legitimate complaint about human relations, much has been learned about organizational life due to interest and research into this area.

Because of the human relations movement we now realize that organizations are social institutions held together by interpersonal

behavior. It stresses the importance of human relationships and explores how interpersonal factors can affect the structural paradigms advocated by classicists. Organization literature reveals trust and ambition to be two strong contenders as determinants of upward communication. Yet research finds are contradictory and inconclusive. Due to breakthroughs brought about by human relations theorists, the impact of these two variables upon hierarchy and upward communication can be studied.

Trust as a Factor in Communication

In 1958 M. Deutsch wrote that

> the research summarized in this paper represents the first attempt to investigate experimentally the phenomena of trust. Clearly, these phenomena warrant more research attention than they are getting (p. 265).

The only earlier research effort uncovered is the Fleishman scale for measuring organizational trust, published in 1957. Clearly, then, the degree to which managers and their subordinates trust each other cannot be tied to pre-World I classical theory. Since 1957, considerable evidence has accumulated which labels trust as a salient element in determining the nature of interpersonal relationships. In society a lack of trust in authority figures such as parents, teachers, and community leaders is cited as a possible cause of deliquency, general failure to learn, and racial unrest (Rotter, 1967). In organizations trust is considered a facilitator of open communication, whereas mistrust can activate defense mechanisms which hinder information flow.

Today there are many definitions of trust. For instance, Rotter (1967, p. 651) calls trust "an expectancy held by an individual or group that the word, promise, verbal or written statement of another

individual or group can be relied upon." Griffin (1967, p. 224) refers to trust as "reliance upon the communication behavior of another person in order to achieve a desired but uncertain objective in a risky situation." Deutsch (1958, p. 266) claims that:

> An individual may be said to have trust in the occurrence of an event if he expects its occurrence and his expectation leads to behavior which he perceives to have greater negative motivational consequences if the expectation is not confirmed than positive motivational consequences if it is confirmed.

According to Deutsch's subjects, trusting people believe that they are better off not to trust at all than to risk trusting others who might betray them. Finally, D. E. Zand (1972, p. 230) defines trust in terms of actions

> (a) that increase one's vulnerability, (b) to another whose behavior is not under one's control, (c) in a situation in which the penalty (disutility) one suffers if the other abuses that vulnerability is greater than the benefit (utility) one gains if the other does not abuse that vulnerability.

It is probable that certain circumstances increase interactants' propensities to trust one another. In a dyad, for instance, if one has a goal, knows that the other person has a similar goal, knows that neither person can achieve his/her goal without the other's cooperation, and is convinced that the other person is similar to him/herself, then high mutual trust can be predicted (Loomis, 1959). Though this example may seem complicated, Griffin (1967, p. 233) presents an even more elaborate, twelve-point theory outlining factors which tend to produce trust by person p for person o:

> 1. A cooperative interpersonal relationship wherein p expects cooperation from o, and p believes he is expected to give cooperation in return.
> 2. Communication from o which indicates to p an intention on the part of o to reciprocate trust when offered by p.
> 3. Communication from o which indicates to p an expectation by o of trusting behavior on the part of p.

4. Communication from o to p which indicates o's plan of reaction to a violation by p of o's trust in p.
5. Communication from o which indicates a way of restoring o's cooperation when o's trust has been violated by p.
6. A condition in which p has a high degree of power (control) over o.
7. Behavior by o which is interpreted by p as a conditional trust of p.
8. Behavior on the part of o which indicates to p that o has nothing to gain by untrustworthy behavior.
9. A situation into which is introduced a third person who is disliked by o and p.
10. An enforcable promise to p from o.
11. Communication from o perceived by p as (a) descriptive rather than evaluative; (b) problem-oriented rather than oriented toward social control; (c) spontaneous rather than strategic; (d) emphatic rather than neutral; (c) between equals rather than between persons of unequal status; (f) provisional rather than certain.
12. The presence of a strong majority opinion on the part of others present.

Though the hypotheses of Loomis and Griffin are untested, they certainly lead one to suspect that trust is a highly complex phenomenon.

There is speculation that trusting behavior produces a positive or negative impact upon the motivation of people in work organizations, depending on whether expectations for return of trust are met. When fulfillment of expectations is doubtful, the employee will have conflicting feelings about trusting others. Such conflict may manifest itself in a sense of fear. Roodman and Roodman (1973) contend that fear for the boss develops when good rapport is missing in the daily work routine. Fear may prevent the subordinate from relating all necessary data to the manager, thus impeding communication.

Yet if such conflict is absent, the beliefs of a trusting person can be examined more easily. In general, the individual who trusts others relies on them and has confidence in them. A questionnaire distributed by Roberts and O'Reilly (1974) reveals attitudes held by persons employed in four business organizations. The researchers

conclude that when low-echelon people express high trust in immediate supervisors, they are also convinced that information received from supervisors is highly accurate. Furthermore, high trust subordinates desire interaction with superiors, but degree of trust is not found to alter the percentage of communications directed up the chain of command.

Though attitudes are of interest, many executives are just as or even more concerned with the actual behavior of trusting employees. Jack Gibb (1962), in a long-range project begun in 1953, finds that defensive behavior in laboratory groups results partly from mistrust. Moreover, Zand (1972) confirms four hypotheses regarding the behavior of highly trusting employees: (1) they exchange pertinent information more readily, (2) they clarify objectives and problems more willingly, (3) they probe for alternative procedures more extensively, and (4) they influence the course of action more noticeably. In the study, groups of businessmen are given packets containing identical factual information about a complex manufacturing/marketing dilemma. Half of the subjects are told to anticipate mistrust. Significant differences in effectiveness resulted in the two groups regarding elucidation of work goals, comprehensiveness of data exchanged, breadth of the search for solutions, and resolution of managers to implement the solution. Shared trust result in higher effectiveness.

The actions of trusting people are the topic of further empirical investigations. Trusting others and actually being trustworthy are linked in Deutsch's 1960 laboratory experiment. Subjects play two interpersonal games. In their first position, they are asked to choose between being trusting or suspicious of other people. In the second

game, they themselves have to decide whether to be trustworthy towards others. There is a very strong tendency for subjects who are trusting to also be trustworthy and for subjects who are suspicious to also be untrustworthy. In other words, attitudes and behavior correspond in this instance.

Mistrust and distortion of communication are also examined. Zand (1972, p. 230) summarizes what can be expected regarding action, mistrust, and communication:

> One who does not trust others will conceal or distort relevant information, and avoid stating or will disguise facts, ideas, conclusions and feelings that he believes will increase his exposure to others, so that information he provides will be low in accuracy, comprehensiveness, and timeliness; and therefore have low congruence with reality.

When people encounter low-trusting behavior, they may naturally hesitate to reveal all they know--even if they are usually confident in others. Short-cycle feedback may tend to perpetuate doubt. Unless a change in someone's behavior occurs, the relationship could stabilize at a disturbingly high level of interpersonal misgiving.

A study of a large governmental research bureau reveals more about concealing true feelings. In the laboratory experiment, the hypothesis is advanced that a communicator, B, who does not trust the receiver of the message, A, tends to hide personal beliefs about a subject, X, when communicating with A. Therefore, A is likely to overestimate the extent to which B agrees with him about X (Mellinger, 1956). Even advocates of bureaucracy, such as Francis Rourke, acknowledge that the best way for a person to advance in an organization "may be to confine himself to advice that fits in with the views of his political superiors, or to give advice only in areas in which he knows his superior has no very strong opinions" (1976, p. 19). Career advancement often

depends upon evaluations of subordinates by their superiors, so ambitious people sometimes forward favorable information and suppress unfavorable. Vincent Ostrom (1974, p. 60) therefore holds the opinion that "large scale bureaucracies will thus become error-prone and cumbersome in adapting to rapidly changing conditions." The accuracy of the upward communication so adamantly advocated by the classical theory of organizations is thus called into question in conditions of low trust.

Ambition as a Factor in Communication

In Organizational Behavior and the Practice of Management, Hampton, Summer, and Webber (1973, p. 88) present three untested--yet provocative--theories:

> 1. In the pursuit of their work goals, people tend to communicate with those who will help them achieve their aims, and not with those who will retard or not assist their accomplishment.
> 2. People tend to direct their communication toward those who can make them feel more secure and gratify their needs, and away from those who threaten them, make them feel anxious, or generally provide unrewarding experiences.
> 3. Persons in an organization communicate to improve their positions.

According to these authors, communication is a self-serving means to another end. And if the employees' desires to accomplish that end are intense, their manipulations of communication should also increase. In fact, the more ambitious employees are, the more they would selfishly use communication. On the other hand, Robbins and Jones (1976) believe that ambitious people associate themselves strongly with their superiors and prefer to treat the executives in a "do unto others" fashion. According to W. E. Henry (1949, p. 290), "the mobile and successful executive looks to his superiors with a feeling of personal attachment

and tends to identify with them" Nevertheless, since the time of the Greek philosophers who believed that hedonism was primarily responsible for man's actions, motivation has frequently been explained in terms of desires to maximize pleasure and minimize pain (Huseman, Lahiff, & Hatfield, 1976). Questions therefore remain regarding the manner in which ascending people behave and whether they merely maximize pleasure.

The path-goal theory of motivation is highly germane to this issue, for it concerns the interrelationships between goal attainment and behavior.

> Briefly, the theory asserts that the individual is goal-directed; that he actively attempts to engage in actions he considers instrumental to the attainment of his goals; that is, the individual will choose those acts (paths) that he perceives as instrumental to his goals (Anthanassiades, 1973, p. 208).

People are incited by their convictions that a certain path will help achieve a certain objective. If the likelihood of achieving the goal is high, the willingness to take risks multiplies. There are many situational variables which could affect the path-goal theory, including the organization's authority structure, the supervisor's behavior, and the group's inclination for secrecy.

M. G. Evans (1970) defines path-goal instrumentality as a person's perception of how his or her action (path) might be related to his or her goal. Instrumentality is the degree to which the path is an asset or a liability to goal attainment. The valence can range from -1.00 to 0.00 to +1.00, with -1.00 designating that the path will definitely not insure goal achievement and +1.00 signifying that the path will certainly insure goal attainment. People with high ambitions would seek positive path-goal relationships in practically all areas, including their communication patterns.

The poet Robert Browning posits that "a man's reach should exceed his grasp, or what's a heaven for?" While this philosophy might prove too frustrating for some people, several industrial psychologists seem to agree with the premise (if not the poetry). N. R. F. Maier, for instance, claims that "under conditions of normal and healthy functioning, a person never achieves the goal because the aspired-to goal moves ahead as it is approached. This permits the person to continue to exert effort" (1973, p. 348). If aspiration levels are too low for ability levels, employees will become content with simple undertakings. Industry, Maier warns, must be careful not to reward employees who have success only because their low goals require little exertion.

Before proceeding, two matters must be considered. First, how important is ambition and, secondly, exactly what is meant by the term? From an extensive study regarding the personalities of hundreds of successful executives, W. E. Henry (1949) concludes that almost 100 percent of them share certain traits. One of the most dominant characteristics is " a high drive and achievement desire" (p. 287). Henry's findings are that executives must accomplish in order to be happy because "they feel the necessity of moving continually upward and of accumulating the rewards of increased accomplishment" (p. 287). While executives vary considerably in intelligence and other factors, their active and striving personalities are almost universal. A less extensive study by Roodman and Roodman (1973) corroborates the earlier formulation made by Henry. Nevertheless, it is simplistic to suggest that ambitious people always make effective managers, and the trait theory enjoys less popularity today than it did a few decades ago.

John Baird (1977) discusses a two-step pattern of leadership emergence. In the first stage, people judged by peers as being unfit for top positions are eliminated as contenders. Individuals seem to know what characteristics they desire in a leader and can determine quickly who possesses those traits. Baird does not speculate, as Henry does, what those traits might be. In the second stage, contenders fight it out.

Ironically, defining ambition is considerably more difficult than pointing out how many people possess it, for the term has been used in widely divergent ways. Aggression, often closely linked or even considered synonymous to ambition, is defined by Berkowitz (1965, p. 302) as "behavior whose goal is the injury of some person or object." This destructive aspect of ambition does exist in some people, but it is beyond the scope of the present study. Aspiration, as it is conceived in this study of organizations, is a twofold (some would say twofaced) phenomenon involving desire for upward mobility and desire to achieve. Those who crave upward mobility have a

> striving to ascend, to rise about others. . . , a drive to move up in hierarchical organizations, in the sense that rising in a hierarchy is an important measure of achievement and success in such organizations (Anthanassiades, 1973, p. 211).

Need to achieve (n Achievement), according to J. H. Turner (1970, p. 147) means simply "the desire to excel in accordance with standards of excellence." In the opinion of the current writer, both the need to rise in a hierarchy and the need to achieve excellence should be examined when discussing ambition.

If employees have high desires for upward mobility, their objective will be to climb the ranks of an organization. They may uproot their families and relocate in a new city if the move promises a promotion.

They may attempt to ingratiate themselves to their superiors in order to gain recognition, approval, and advancement. Yet upward mobility is closely linked to achievement, for one of the best ways to acquire approving nods is to do a good job. In a situation reminiscent of Gilbert and Sullivan's portrayal of the First Lord of the Admiralty's rise to power, McClelland (1961) describes the conduct of a hypothetical young employee, Olin Larson, who has a noticeably high n Achievement. Larson, a business administration major, graduates from college and joins a large firm as an administrative assistant. He is assigned responsibility for a filing cabinet--hardly the kind of challenge he had expected. Nevertheless, he throws himself into his work and immediately sees that the file could be of more use to management if it had a better index. After speaking to executives about what kind of information they need most, he makes decisions about what materials should be entered into the file. Finally, he executes those decisions. McClelland points out that Larson uses five "strategies of advancement" (p. 281). He:

1. wanted to do a good job, to get ahead,
2. developed better strategies for noting relevant features of the job environment (found out what people wanted from the file),
3. adapted his strategies to fit what he perceived (changed what went into the file),
4. did not let the organization define his job for him (did not simply accept the file-supervision job as it was presented to him), and
5. was willing to take reasonable risks (changed the file, even though someone might have liked it better the way it was).

Larson is soon considered a promising junior executive. McClelland believes that this simple scenario illustrates how people with high n Achievement pursue their careers and advance to positions of leadership in their firms.

Though employees may rise because of results which their high n Achievement motivates, high n Achievement does not necessarily equip them to manage groups of people. Hampton, Summer, and Webber (1973) suggest that a need for affiliation and power are both more interpersonally oriented and may thus serve as better indicators of who would be an effective manager. Stimulating others to do well--one task of the responsible manager--requires skills not automatically belonging to persons who themselves possess n Achievement. McClelland (1970, p. 29) agrees that "n Achievement is a one man game which need never involve other people. . . . The man with high n Achievement is not dependent on the judgment of others; he is concerned with improving his own performance." In other words, n Achievement may be strictly intrapersonal and not involve escalation in the company hierarchy. Therefore, high n Achievement alone is insufficient to determine high ambition.

Ambition has long been considered a corrupter of humanity, and literary examples abound. Caesar and Macbeth, to name two Shakespearean characters whose ambition is their downfall, are portrayals of the disasterous effects of overzealousness. Today's aspiring people often fight the stereotype that they are ruthless and uncaring about others. Long before Shakespeare, Homer wrote of dishonest Hermes (Mercury) who is messenger to all the gods and son to Zeus. McClelland (1961) cites the Hermes myth as being the possible origin of today's negative image of ambitious people. Hermes tells outright lies to Apollo and Zeus; he steals Apollo's cattle on the day he is born; he wears his sandles backwards to avert attention from the direction in which he goes; he brags of his exploits. He is, in short, so anxious to succeed that he rarely gives thought to scruples. This unfortunate (and possibly untrue) image can still haunt an ambitious person.

As in the case of Hermes, ambition and distortion of information are commonly thought to be closely linked. The first attempt to test this notion is W. H. Read's 1962 survey of men in three industrial firms. The researcher states (p. 4):

> One would expect that the more the executives are upwardly mobile, that is, the more they value vertical promotion in the hierarchy, the less accurately they will communicate upward "negative" aspects of their work performance. The stronger the mobility aspirations of subordinates, the more will they communicate to their superiors in a way that will maximize positive, and minimize negative, aspects. Thus they would be likely to withhold, restrict, or distort information about the problems, current and unsolved, which they experience in their day-to-day work.

Read confirms his hypotheses, but his methodology is open to criticism. In Read's study, the dependent variable measures the agreement between subordinates and supervisors concerning the gravest problems which exist in the firm, and Read interprets this as a measure of information distortion. While this measure may indicate that employees at different levels do not agree about problems and priorities, it does not really indicate deception or distortion. Read's methodology also has the internal validity drawbacks normally associated with surveys.

Another study (Anthanassiades, 1973) supports Read's findings. In a laboratory experiment the theory is confirmed that:

> A subordinate motivated by a strong drive to ascend (unsatisfied need for achievement) will have ascendance as his main goal. Being motivated to ascend, he will choose to distort his upward communication because he perceives such behavior as instrumental to the attainment of his goals. Moreover, such a subordinate will distort only moderately because persons motivated by need to achieve tend to be moderate risk-takers (pp. 209-210).

Yet the measures Anthanassiades employs are just as dubious as Read's. Anthanassiades uses a revealed versus a hidden personality profile which is filled out by subjects. Though this could indicate that

executives misunderstand the personalities of subordinates, there is no reason why it should prove that executives are deluded by subordinates.

In contrast to the studies of Read and Anthanassiades are studies which find that ambitious employees engage in considerably less information distortion than unambitious employees. For instance, Roberts and O'Reilly's 1974 survey of four different types of organizations demonstrates that only in the tested military organization was upward mobility correlated with distortion of upward communication. Rather than mobility, it is subordinates' perceptions of their boss' influence over careers which is strongly related to accurary of data sent by the subordinates to their superiors.

A key question thus arises: what determines how ethical an ambitious person will be? Does high ambition by itself encourage betrayal unless that drive can be modified by other factors? In the Read study mentioned above, the inclination to change information weakens as the degree of interpersonal trust between employee and boss strengthens. The highly mobile subordinates feel threatened when communicating negative information to a superior they do not trust because the subordinates fear that unfavorable information will be used against them. Yet when the subordinates have high confidence, such fear diminishes and open communication increases. Furthermore, a recent and compelling series of laboratory experiments (O'Reilly, 1978, p. 184) reports that

> under conditions of high trust, subjects pass significantly more total information and more unfavorable-important information. Under conditions of low trust, subordinates pass significantly more favorable items and more favorable-unimportant items.

Interpersonal trust thus seems to be a strong candidate as a mitigating force among those people whose ambition may tempt them to distort communications.

Summary

In conclusion, the classical school of organizational thought focuses on institutional structure, division of labor, levels of hierarchy, chain of command, and upward communication. The bureaucracy is a conceptual model which typifies the classical theory. Formal networks are stressed, and the work rather than the people of an organization are given primary consideration. In contrast to the classical school, the human relations movement is concerned with the individuals who comprise work groups. Questions of importance include roles, status, morale, informal relationships, and needs associated with people's jobs. Representatives of this school are noticeably less production oriented than classicists, with more attention being placed on people and their needs. From an investigation of human needs and motivators we are now aware of several factors, including trust and ambition, which can have an effect on organizational communication.

It is the contention of this paper, as documented from a review of the literature in organizational communication, that factors which affect the classical view of upward communication need to be firmly established. There is currently conflicting evidence regarding the impact of upward mobility, high need for achievement, and interpersonal trust as they relate to an underling's propensity to distort messages. Resolution of this question will have practical application for executives in the field. It may improve their awareness of factors which produce

distortion, and it may even suggest ways that distortion can be eliminated from organizational communication. The task remains to develop and test hypotheses which can adequately answer questions and support theories raised in this literature review.

CHAPTER 3

METHODOLOGY

The most important examinations of upward communication in organizations, as modified by conditions of trust and ambition, are Read's 1962 survey plus Anthanassiades' 1973 and O'Reilly's 1978 laboratory experiments. These investigations are the primary models, and the current study is indebted to the laudable efforts of these researchers. Nevertheless, these studies have produced conflicting results, and the posttest-only laboratory experiment proposed herein seeks to clarify and resolve the dispute.

Hypotheses and Definition of Terms

Two hypotheses are possible concerning transmission and distortion of upward communication among exempt employees.

H1: Job situation, trust, and ambition account for significant variance in the projected frequency of upward communications by exempt employees.

H2: Job situation, trust, and ambition account for significant variance in the number of upward communications distorted by exempt employees.

Key terms are operationally defined as follows.

Projected frequency--one of the dependent variables being measured; means the number of times on a five-interval (always-to-never) scale that subjects elect to communicate with their superiors.

Distortion--one of the dependent variables being measured; means inaccurate transmission of information and may be achieved in three

ways: (1) puffing--accenting, expanding, or exaggerating the unfavorable or favorable aspects of a situation; (2) sieving--minimizing the negative or unfavorable aspects of a situation, as in filtering out or briefly summarizing damaging details to reduce their impact; and (3) withholding--completely omitting or suppressing damaging or unfavorable details. This concept has never before been measured in this exact way, so far as the current writer can tell. The instrument was thus thoroughly pretested before it was employed.

Job situation--an independent variable in message transmission and distortion; refers to a problem or neutral on-the-job occurrence, congruent with pretest findings. The process essentially replicates Read's 1962 procedure and is fully outlined in the pretest section below.

Trust--an independent variable in message transmission and distortion; refers to an expectation held by subordinates that their superiors can be relied upon to treat the subordinates with all due consideration. Fleishman's Supervisory Behavior Description Index (1957) was the measuring tool.

Ambition--an independent variable in message transmission and distortion; means the striving to achieve excellence at work and to be rewarded for outstanding accomplishments on the job. McClelland's Fantasy Index (1961) was used to measure ambition.

Exempt employees--managers and supervisors in the company; the plants themselves, not the researcher, labeled employees who fit into this category.

Pretest

Pretesting was necessary to determine what constituted problems and neutral situations on the job. Though some researchers have already investigated this question, their methodologies are not reported in adequate detail. It was therefore prudent to delve again into this matter and identify salient issues for ALCOA workers.

Design. The research plan for this part of the study was a one-shot, non-experimental design. Using the Haskins (1977) notational system, the diagram is seen in Figure 4.

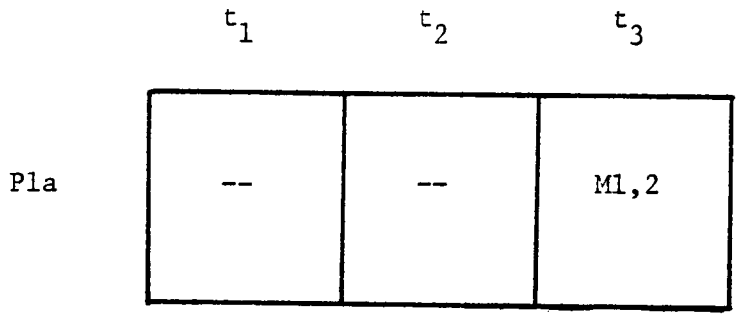


Figure 4

Pretest Design

The symbols are interpreted as follows:

Population P1 = exempt managers from ALCOA, Tennessee Operations

P1a = a stratified random sample of p1, 30 people

Times $t_{1,2}$ = all time prior to the study

t_3 = time of the study

Measures M1 = problems encountered on the job

M2 = neutral situations encountered on the job

Sample. The Aluminum Company of America, Tennessee Operations in Alcoa, Tennessee was selected as the industrial firm where the pretest was conducted. A stratified random sample of its exempt employees, including managers and supervisors, was chosen with formula:

$$n = \frac{p\ (1 - p)}{h^2 + \frac{p\ (1 + p)}{n}} \qquad \text{or} \qquad 30 = \frac{.5\ (1 - .5)}{\frac{.10^2}{1.645^2} + \frac{.5\ (1 - .5)}{55}}$$

A total of thirty employees were thus contacted through a mail survey. The plant provided the researcher with an alphabetical list of all exempt employees and their titles so that the selections could be made. Participants were guaranteed complete anonymity; there was no possible method of connecting their names to the forms they mailed to the researcher. The University of Tennessee, Knoxville requirements for dealing with human subjects were met, and documentation is provided in APPENDIX A. ALCOA permission is also found there.

Measures and data-gathering devices. Determining what problems are faced by exempt employees is a complicated process which is not well validated. O'Reilly (1978) outlines an interesting technique, but fails to cite enough details so the procedure can be replicated. Twenty-four people (their positions not indicated) categorized 110 items (their nature not indicated) as important, unimportant, favorable, or unfavorable. Neutral items were eliminated, and six items (their nature not indicated) distinctly clustered as favorable and important; six as favorable and unimportant; six as unfavorable and important;

and six as unfavorable and unimportant. Unfortunately, the author provides no further specifics, so his method cannot be easily followed or repeated, even though replication would be very appropriate for M1 and M2 of the current pretest.

Read (1962) discusses his pretest which determined the difficulties faced by middle-level managers. He simply interviewed 35 employees and asked an open-ended question: to describe the major problems they faced on the job. All responses were then categorized according to type and collapsed into five dominant classifications: "(a) co-ordination and communication, (b) budget and cost, (c) technical, (d) pressures and deadlines, and (e) administration and supervision" (p. 5).

Since O'Reilly's technique was not available for determining M1 and M2 of the pretest, Read's procedure seemed the best alternative, for no other validated procedure was located. The questionnaire distributed through company mail to the current study's pretest subjects comprises APPENDIX B. Upon completion of these six questions, respondents were asked to mail the form, and the pretest was thus concluded. This information was analyzed and used as the basis for treatment and control groups found in the experimental design.

Laboratory Experiment

After the pretest determined the nature of problem and neutral situations faced by ALCOA employees, a totally separate laboratory experiment was used to establish whether hypotheses could be substantiated.

Design. Using the Haskins (1977) notational system, the posttest-only controlled laboratory experiment with placebo (Figure 5).

	t_1	t_2	t_3
P1a	--	T1(fx)	M1,2(a,b,c),3,4
P1B	--	TP(fx)	M1,2(a,b,c),3,4

Figure 5

Experimental Design

The symbols are interpreted as follows:

Population	P1	= exempt employees from ALCOA, Badin Works
	P1a,b	= two stratified random samples of P1, 20 each
Times	t_1	= all time prior to the study
	t_2	= time of stimulus treatment and control
	t_3	= time of posttest, immediately following t_2
Treatments	T1(fx)	= forced exposure to the problem identified in the pretest as being the most serious faced on the job
	TP(fx)	= forced exposure to a placebo (neutral) job situation
Measures	M1	= upward messages transmission frequency
	M2	= number of upward messages distorted
	M2(a,b,c)	= number of upward messages puffed, sieved, withheld
	M3	= measure of trust in superiors
	M4	= measure of personal ambition

Sample. ALCOA, Badin Works in Badin, North Carolina was selected as the site of the experiment. Permission from Mr. Ralph McAlister, Works Manager, was obtained before conducting the project there. The Badin smelting plant contains a total of 710 employees who fall into three groups: hourly, non-exempt, and exempt. The exempt workers, the population for the current study, include 22 managers and 71 supervisors. A stratified random sample of 45 exempt people was drawn to ensure that managers and supervisors were both adequately represented. Subjects were then randomly assigned to treatment or control groups. The researcher visited the plant on June 8, 1979 and conducted the experiment by gathering the subjects together on company grounds during their normal working shifts.

One limitation of the study stems from the necessity of pretesting one population and experimenting with another. Yet the danger of contamination was so high if the same population had been used twice, so it more than compensated for using two separate branches of the same organization.

Treatment and control. Subjects were randomly assigned to separate treatment and control groups where they received test packets which differed somewhat in content. Those exempt workers receiving the treatment, T1(fx), were presented with a narrative description of the most serious job-related problem uncovered by the pretest. Individuals in the control group, T0(fn), were not confronted with a problem, but instead received a placebo--a description of a neutral situation encountered through daily routine. After reading the materials, all

subjects were asked: (1) to decide how often they would choose to inform higher-level company officials about the situation, and (2) to provide a written statement of what they would say to their superiors in the event that they decided to communicate. Treatment and control packets are included at APPENDIX C.

Measures and data-gathering devices. M1 was a five-interval scale (always through never) of how frequently subjects elected to inform their immediate superiors about the incidents described in treatment and control test packets.

For those messages which were sent upward, content analysis provided three measures of distortion. Following the coding unit method described by Budd, Thorp, and Donohew (1967), assertion analysis was used to examine distortions in content. The authors demonstrate the general technique:

> An assertion could be a sentence, a part of a sentence, or even a single word. For example, the sentence "Alice is pretty" represents a single assertion. But in the sentence "Alice is an attractive, intelligent girl," there are three separate assertions: (1) Alice is attractive; (2) Alice is intelligent; and (3) Alice is a girl (p. 34).

In the current study, the first distortion, puffs or M2(a), were equivalent to the number of positive assertions, per 25 words, not specifically required to describe a situation accurately. For example, "thirty overhead cams" is not puffed because the adjectives are absolutely necessary to identify the object properly. However, a "well thought-out plan" or an "interesting and helpful solution" are each puffed because they accent the positive and are not strictly needed to convey meaning. Sieves, M2(b), are the opposite of puffs and seek to softpeddle unfavorable material. If, for instance,

the treatment packet had described an employee brawl and subjects described a "minor tiff," the transmitters would have filtered out information. The number of sieves per 25 words was counted. Withholdings, M2(c), were the simplest to count. Elements which the subjects completely omitted when communicating to superiors were tallied.

After treatment and control narrative descriptions were prepared, a list of potential distortions was also prepared and a coding system sheet included in APPENDIX D. Determining direction (positive, negative, or neutral valence) of messages is one of the most perplexing duties of the content analyst. Budd, Thorp, and Donohew (1967, p. 51) warn that:

> The scheme for quantifying direction that is eventually established should not be designed before the material has been examined. The analyst should become thoroughly familiar with the material to be analyzed and should determine the modes to be employed for revealing a given stand on an issue. Only when this familiarization process is complete can the researchers determine an effective scheme (including definitions) for classifying and counting direction.

Therefore, the complete scheme could not be developed until after the pretest determined the content of treatment and control messages.

Trust for supervisors, M3, was easily measured by using Fleishman's 1957 Supervisory Behavior Description Index in APPENDIX E. This five-interval, twenty-eight item scale was developed especially for use in industry. It analyzes consideration, which is defined as "the extent to which an individual is likely to have job relationships characterized by mutual trust" (Miller, 1970). The scale is considered simple to administer and is estimated to require only ten minutes to complete. The highest possible score is 140.

Fleishman (1957, p. 118) addresses the utility of his instrument and says that the scale is:

> shown to be independent and reliable. Reliability was assessed in terms of internal consistency, inter-rater agreement, and stability of repeated measures over time. Validity was assessed through correlations with independent leadership measures, such as . . . productivity ratings, peer ratings, and leaderless group situation tests. . . . Correlations with other measures revealed that the scores achieved were independent of certain measures of general intelligence. The low correlations between the scales and other psychometric and background measures, and the substantial correlation with certain leadership criteria, suggest that these scales may be useful additions in the fields of leadership research and assessment.

Though other instruments measure trust (notably Rotter, 1967), they do not focus on trusting work supervisors. Since people could be very trusting in general and still not have confidence that their bosses will treat them with consideration, the Fleishman scale offers specificity lacking in other instruments. Furthermore, since the Fleishman scale has been thoroughly pretested by its originator and used successfully by others, there was no further need to pretest it for the current study. It was implemented in its established form.

Fortunately, a pretested indicator for ambition (M4) was also available. The need for achievement has been thoroughly explored, and methods for determining it are well known in the field. As McClelland (1972, p. 261) points out, "You cannot trust what people tell you about their motives." In order to arrive at an accurate assessment, more sophisticated and subtle techniques are required. Psychologists therefore frequently measure the strength of a motive by recording spontaneous thoughts, as when a subject invents a story to explain a picture. Since we lack what McClelland calls a "psychic X-ray" which would allow us to observe the workings of the mind, we use the closest

substitute--samplings of daydreams, fantasies, or free associations--a technique popular since Freud. McClelland has been instrumental in adapting this procedure for measuring the n Achievement drive among workers. The process is simple. For the controlled laboratory experiment conducted herein, employees from Badin Works were shown the picture included in APPENDIX F and asked to write their impressions. Content analysis again provided for an interpretation of data.

The picture was "sufficiently ambiguous to evoke a variety of ideas" (McClelland, 1961, p. 43). A very objective count of the number of achievement ideas in the subjects' stories represented the degree of concern with achievement. For example, one of McClelland's subjects (1962, p. 101) composed this story when he viewed the picture in APPENDIX F:

> The engineer is at work on Saturday when it is quiet and he has taken time to do a little daydreaming. He is the father of the two children in the picture--the husband of the woman shown. He has a happy home life and is dreaming about some pleasant outing they have had. He is also looking forward to a repeat of the incident which is now giving him pleasure to think about. He plans on the following day, Sunday, to use the afternoon to take his family for a short trip.

No ambition here. This description received a -1 score because its main idea was unrelated to doing a better job and getting rewarded at the office. On the other hand, the next subject earned a +4 score because his story contained four separate ideas directly related to achievement:

> The man is an engineer at a drafting board. The picture is of his family. He has a problem and is concentrating on it. It is merely an everyday occurrence--a problem which requires thought. How can he get that bridge to take the stress of possible high winds? He wants to arrive at a good solution of the problem by himself. He will discuss the problem with a few other engineers and make a decision which will be a correct one--he has the earmarks of competence.

The contrast between the two responses is clear, yet McClelland is careful to point out that the test is very sensitive and easily influenced by the atmosphere in which the instrument is applied. He has found, however, that it is an excellent device for determining n Achievement in sizable groups of people. The assumption is that

> people who spend a lot of their time thinking about getting ahead, inventing new gadgets, defining problems that need to be solved, considering alternative means of solving them, and calling in experts for help should also be people who in real life do a lot of these things (McClelland, 1962, p. 102).

Yet suppose subjects have a Walter Mitty syndrome? Mitty (James Thurber's fictional protagonist who daydreams his life away) engages in endless fantasies about his achievements because his real-life accomplishments are nil. Since his real life provides no possibility for success, his fantasy life is full of it. Randomization of subjects thus became even more critical in the current study so that potential Walter Mittys would be found to a reasonably equal degree in both test groups. With this drawback in mind, the McClelland Fantasy Index was used as the measurement tool for M4.

Data analysis. Campbell and Stanley (1963, p. 22) soberly remind researchers that "good experimental design is separable from the use of statistical tests of significance." The ability to interpret results rests mainly on the control permitted by the design. The authors continue:

> If the comparison is interpretable, then statistical tests of significance come in for the decision as to whether or not the obtained difference rises above the fluctuation to be expected in cases of no true difference for samples of that size.

The results of a controlled laboratory experiment are usually quite interpretable, so the task was to find the strongest available

statistical test. "Multiple regression is a general statistical technique through which one can analyze the relationship between a dependent or criterion variable and a set of independent variables" (Kim & Kohout, 1970, p. 321). The Statistical Package for the Social Sciences (SPSS) subprogram was appropriate here for analyzing dependent variables--frequency and distortion of upward communication. Through this technique the variance that the three independent variables--job situation (dummy variable), trust, and ambition--account for in the dependent variables was identified.

In conclusion, a controlled laboratory experiment was conducted to test two hypotheses concerning upward communication in industrial hierarchies. Two separate branches of ALCOA were used. The experimental design allowed a cause-and-effect relationship to be established between the dependent variables and the independent variable manipulated by the researcher (job situation). Trust and ambition remained predictor variables.

CHAPTER 4

RESULTS

In order to establish valid experimental and control treatments, a pretest was conducted among ALCOA employees. The pretest took the form of a mail survey sent through company mail beginning on May 21, 1979 at the Tennessee Operations in Alcoa, Tennessee. Thirty managers and supervisors were contacted; a description of the population and the sampling procedure are fully described in CHAPTER 3.

Pretest Results

Seventy percent of those employees who were sent the questionnaire (plus its advance warning and follow-up reminder) completed the forms and mailed them back to the researcher. ALCOA officials expressed surprise to find that 21 of the 30 persons polled would cooperate.* One might conjecture that this participation rate, evidently high for Tennessee Operations exempt employees, resulted from a desire to discuss difficulties faced at work, but such an explanation is purely speculative.

Each response was read carefully and categorized according to the type of job situation which it presented. The categorization process is fully outlined in CHAPTER 3. The 21 respondents listed and provided examples of five different types of problems, defined as

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*In telephone and face-to-face conversations, the Public Relations Manager voiced serious doubt that more than 20% of ALCOA employees would respond to a mail survey. In one professionally conducted poll at the plant, only 4% of persons contacted agreed to participate.

situations which produced trouble or distress at work. The first category identified was problem or troublesome communication, which drew 10 responses (47.62% of the total). Examples of vexing communication included hearing bad news through the grapevine instead of through approved channels, failure in giving effective instructions or orders to subordinates, and fearing to tell honestly what was on one's mind. The second most common problem was employee relations, which earned five responses or 23.81%. Unreasonable union or supervisor demands, high employee turnover, and serious injury were cited as being responsible for tense dealings with employees. Third was the category of equipment breakdowns, drawing three answers (14.29% of the total). Next was anxiety due to pressures and deadlines. Two persons (9.52%) wrote of strain caused by the necessity to furnish relevant, timely information and by internalizing work difficulties, especially when employees disagreed with higher-level decisions. Ranked fifth was one response (4.76%) about the problem of coordinating work among various shifts.

Subjects were also asked to recount their most common neutral job situations. The events or circumstances were not to be considered positive or negative, good or bad. Instead, they were merely to be occurrences deemed part of a normal day's work. For this question there was considerable more consensus among respondents, and only three answer categories emerged. Eight persons (38.10% of the total) listed routine communication as a neutral situation. They judged consultations, staff meetings, answering mail, and making logs at the end of shifts to be examples of ordinary, non-problematic communication. Seven responses (33.33%) clustered under the category

of normal employee relations, including training new personnel, inspecting project progress, and handling complaints about paychecks, overtime allocations, and vacations. Last, scheduling was regarded by six employees (28.57%) as being a routine situation. They mentioned daily decisions about working times and matches between people assignments and equipment capability as examples of this category.

TABLE 1 contains easy reference to problem and neutral job situations and to the total and percent of times they were identified by pretest subjects.

TABLE 1

Pretest Problem and Neutral Job Situations

Job Situation	Frequency	Percent
Problem		
Troublesome Communication	10	47.62
Troublesome Employee Relations	5	23.81
Equipment Breakdowns	3	14.29
Pressures/Deadlines	2	9.52
Coordinating Work Shifts	1	4.76
Total	21	
Neutral		
Routine Communication	8	38.10
Routine Employee Relations	7	33.33
Scheduling	6	28.57
Total	21	

Because troublesome communication was cited most frequently as being a common cause of job uncertainty or perplexity, it was chosen

as the topic for the researcher's experimental group. Based on the narratives returned by survey participants, the researcher composed the hypothetical problematic situation for the experimental group at Badin Works. Moreover, since the pretest found routine communication to be the most often discussed neutral situation, it was used as the basis for the control group narrative. APPENDIX C contains the resulting stories.

After the pretest was concluded and the experimental and control group narratives were developed, the stories were pilot tested. Budd, Thorp, and Donohew (1967) point out the necessity of this step. In content analysis, a list of assertions and a mode of analysis must be established prior to the experiment to prevent the researcher from engaging in a fishing expidition and to provide a blueprint for the study. In this instance, a list of possible distortions was also required for the same reasons. The researcher needed assistance in preparing the analysis scheme. To that end, a purposive sample of twenty-three University of Tennessee freshmen enrolled in English 1010, Section 37528, were subjects; the researcher was their instructor, and the limited usefulness of such a group is noted. They were randomly divided into two groups and asked to make anonymous, written responses to the experimental or control narratives. Responses were read, tallies of distortions made, and the list of assertions which might possibly be distorted was created (APPENDIX D).

Experiment Results: Descriptive Data

The experiment was conducted on June 8, 1979 at ALCOA, Badin Works in Badin, North Carolina. A description of this population is included in CHAPTER 3. Forty randomly selected exempt employees

participated, 20 in a control and 20 in an experimental group. Employees, randomly assigned to the two groups, met with the researcher one hour after their normal shift commenced. For instance, subjects working the graveyard shift (11pm to 7am) met at the designated plant conference room at 12 midnight, and other groups followed the same pattern to avoid contact and contamination of group members.

Experimental group members were exposed to the problem communication message identified by the pretest; control subjects were shown the routine communication situation. All subjects were asked how frequently (on a five interval scale) they would transmit news of the situation to their superiors, should such a situation arise at work. They then composed memoranda to superiors informing them about the problem or neutral situations, depending upon the group in which they were placed. Responses were content analyzed for distortions, following the procedure suggested by the pilot test. The number of withhold, sieve, puff, and total distortions was tabulated for each subject. Aggregate findings are presented in TABLES 2 and 3.

TABLE 2

Frequency of Message Distortion in Upward Communication

Group	Withhold Distortions #	%	Sieve Distortions #	%	Puff Distortions #	%	Total Distortions
Experimental (Problem)	61	53.04	48	41.74	6	5.22	115
Control (Neutral)	79	82.29	4	4.17	13	13.54	96
Total	140	66.35	52	24.64	19	9.00	211

TABLE 3

Range and Mean Number of Distortions

Group	Withhold		Sieve		Puff		Total	
	Range	Mean	Range	Mean	Range	Mean	Range	Mean
Experimental (Problem)	0 - 7	3.05	0 - 6	2.40	0 - 2	.30	0 - 10	5.75
Control (Neutral)	2 - 9	3.95	0 - 2	.20	0 - 2	.65	2 - 9	4.80

The largest number of distortions was in the form of withholdings; TABLE 2 shows 61 and 79 in experimental and control groups, respectively. In fact, for the problem message 53.04% of distortions were withholdings, 41.74% were sieves, and only 5.22% were puffs. For the neutral message, a full 82.29% of distortions in upward communication were withholdings, 4.17% were sieves, and 13.54% were puffs. TABLE 3 also gives information as to the range and mean number of distortions. For withholdings, for instance, at least one experimental group member withheld no messages and at least one withheld seven. The group mean was 3.05. In the control group, the highest number of withholdings by any single subject equaled nine and the lowest was two. Data are presented for each distortion type.

The frequency with which employees stated that they would probably communicate upward was extremely high. On a one-to-five scale with one being "never" and five being "always," most subjects indicated that they would always relate narrative incidents to their bosses. TABLE 4 contains results.

TABLE 4

Projected Frequency of Upward Communication

Group	Range		Mean
	High	Low	
Experimental (Problem)	5	3	4.70
Control (Neutral)	5	2	4.50

As seen in TABLE 4, both groups displayed a noticeable tendency to communicate upward. In both treatment and control situations, the mean scores almost reached the fifth interval ("always" sending news about the situation up the chain of command).

In addition to the high tendency to communicate, subjects also exhibited an above average inclination to trust their immediate supervisors. Scores for the trust index are found in TABLE 5.

TABLE 5

Degree of Trust in Immediate Superiors

Group	Range		Mean
	High	Low	
Experimental (Problem)	129	52	106.00
Control (Neutral)	129	72	103.25

The lowest possible score on the trust index was 28, which would result if scores of one ("never") were uniformly given. If scores of two ("seldom") were checked consistently, the result would be 56 points; three ("occasionally") would yield a score of 84; four ("often") would yield 112; and five ("always") would add up to 140. In both the problem and neutral groups, trust scores were high; means almost reached the fourth interval. This would seem to indicate a noticeable degree of goodwill and esprit de corps among participants. Apparently a strong degree of devotion and enthusiasm exists among ALCOAns one for another, their firm, and its purposes.

The projected frequency of upward communication and the trust scores appeared high, but results of McClelland's Ambition Index did not reveal an unusually great striving for excellence among Badin subjects. On the contrary, little ambition was uncovered. Moreover, just as there was very little difference between problem and neutral message groups with respect to projected frequency and trust, the ambition scale also indicated little difference between groups. TABLE 6 illustrates.

TABLE 6

Degree of Personal Ambition

Group	Range		Mean
	High	Low	
Experimental (Problem)	+3	-3	-0.15
Control (Neutral)	+4	-4	+0.25

In the experimental group, negative ambition scores were obtained from ten subjects, eight provided positive scores, and two had zero scores for a group total of minus three. The neutral message group had six negative, seven positive, and six flat zero ambition scores for a group total of plus five.

Experiment Results: Predictive Data

To test the hypotheses, several multiple regression analyses were conducted, one for each of the dependent variables (H1: projected frequency of communication and H2: distortion of communication plus

sub-types withholdings, puffs, sieves, and totals). Independent variables were job circumstances (problem or neutral), trust, and ambition.

Projected frequency of upward communication. Trust and ambition accounted for only 9% of the variance in the projected frequency of upward communication; all variance arose in the control group. None of the relationships were significant at the .05 level, as TABLE 7 shows. In the control group exposed to a neutral work situation, there was a negative relationship between the independent variables (trust and ambition) and the dependent variable of frequency, though coefficients were quite small. This signifies that persons possessing a high degree of trust or ambition transmit routine data to their superiors slightly less often than do non-trusting, low ambition employees.

Hypothesis 1 was thus rejected. Neither trust, ambition, problem situation, nor neutral situation accounted for any significant variance in the projected frequency of upward communication.

Distortion of upward communication. TABLES 8, 9, 10, and 11 show relationships with the second dependent variable, distortion, and its sub-types of withholdings, puffs, sieves, and totals. TABLE 8 is devoted to withhold distortions. Thirty-one percent of variance in withholdings could be accounted for by trust and ambition in the experimental group; 9% in the control. Two relationships were statistically significant: experimental (problem) trust and problem ambition. In the experimental group, negative r values also appeared; the more trust and ambition, the less withholding occurred. On the basis on TABLE 8, Hypothesis 2 was accepted.

TABLE 7

Summary of Relationships with Projected Frequency of Communication

Independent Variables	r[a]	Variance (RSQ) Total	Variance (RSQ) Proportion	df	Mean Square Regression	Mean Square Residual	F
Experiment/ Trust	0.08	0.00	(0.00)	1/18	0.04	0.34	0.13
Experiment/ Ambition	--	--	--	--	--	--	--
Total		0.00					
Control/ Trust	-0.07	0.01	(20.00)	2/17	0.35	0.72	0.49
Control/ Ambition	-0.20	0.04	(80.00)	1/18	0.54	0.69	0.78
Total		0.05					

[a] = correlation coefficient

Dashes = level insignificant for computation

Unexpected yet explainable findings are shown in TABLE 9, a summary of relationships with the dependent variable of puff distortions. In the control group, ambitious subjects demonstrated a tendency not to distort upward communications. The F score of 6.03 is significant at the .05 level. This indicates that when ambitious people choose to relay common, everyday messages up the chain of command, they do not exaggerate the importance of the message. Furthermore, in the control group 29% of the total variance in puffs was accounted for by trust and ambition; 4% was in the experimental group.

TABLE 8

Summary of Relationships with Withhold Distortions

Independent Variables	r[a]	Variance (RSQ) Total	Proportion	df	Mean Square Regression	Residual	F[b]
Experiment/ Trust	-0.11	0.01	(3.23)	2/17	18.90	4.77	3.96
Experiment/ Ambition	-0.55	0.30	(96.77)	1/18	36.07	4.60	7.84
Total		0.31					
Control/ Trust	0.14	0.03	(33.33)	2/17	3.71	4.09	0.91
Control/ Ambition	0.25	0.06	(66.67)	1/18	4.74	4.01	1.18
Total		0.09					

[a] = correlation coefficient

[b] = underlined values significant at .05

The independent variables accounted for very little of the variance in sieve and total distortions (TABLES 10 and 11), and not much else of importance was found regarding these dependent variables.

In summary, the first hypothesis was clearly not accepted. The projected frequency of upward communication was not related to trust and ambition. The second hypothesis was confirmed. H2 stated that distortion (meaning any type) was related to the independent variables. Four separate kinds of distortion were tested: withholdings, sieves, puffs, and totals. Withholdings were found to be related to

problem situations, trust, and ambition. Additionally, when faced with routine job occurrences, subjects tended not to puff upward communications.

TABLE 9

Summary of Relationships with Puff Distortions

Independent Variables	r[a]	Variance (RSQ) Total	Variance (RSQ) Proportion	df	Mean Square Regression	Mean Square Residual	F[b]
Experiment/ Trust	0.14	0.02	(50.00)	2/17	0.16	0.46	0.35
Experiment/ Ambition	0.15	0.02	(50.00)	1/18	0.17	0.45	0.39
Total		0.04					
Control/ Trust	0.28	0.04	(13.79)	2/17	1.80	0.53	3.43
Control/ Ambition	-0.50	0.25	(86.21)	1/18	3.15	0.52	<u>6.03</u>
Total		0.29					

[a] = correlation coefficient

[b] = underlined values significant at .05

TABLE 10

Summary of Relationships with Sieve Distortions

Independent Variables	r[a]	Variance (RSQ) Total	Variance (RSQ) Proportion	df	Mean Square Regression	Mean Square Residual	F
Experiment/ Trust	--	--	--	--	--	--	--
Experiment/ Ambition	0.08	0.01	(100.00)	1/18	0.56	4.48	0.12
Total		0.01					
Control/ Trust	0.18	0.03	(42.86)	1/18	0.17	0.28	0.60
Control/ Ambition	0.18	0.04	(57.14)	2/17	0.20	0.28	0.70
Total		0.07					

[a] = correlation coefficient

Dashes = level insignificant for computation

TABLE 11

Summary of Relationships with Total Distortions

Independent Variables	r[a]	Variance (RSQ) Total	Variance (RSQ) Proportion	df	Mean Square Regression	Mean Square Residual	F
Experiment/ Trust	-0.08	0.01	(5.00)	2/17	12.11	5.97	2.03
Experiment/ Ambition	-0.43	0.19	(95.00)	1/18	23.46	5.68	4.13
Total		0.20					
Control/ Trust	0.24	0.06	(85.71)	1/18	5.21	4.92	1.06
Control/ Ambition	0.07	0.01	(14.29)	2/17	3.23	5.13	0.63
Total		0.07					

[a] = correlation coefficient

CHAPTER 5

SUMMARY AND CONCLUSIONS

Accurate upward communication is one requisite of effective corporate management, for without an honest ascending flow of information, top decision makers may be unaware of phenomena within their organization. This study is based on two assumptions: that managerial success depends partly upon understanding communication processes and that distorting upward communication is a predictable part of subordinate behavior. The primary focus is upon misrepresentations. Distortions are defined as inaccurate messages transmitted up the chain of command, and this experiment seeks to describe conditions contributing to employees' tendencies to distort. Secondary attention is given to the projected frequency with which lower echelon group members choose to convey messages to their superiors, regardless of the correctness or completeness of those messages. Accounting not only for whether but for what subordinates communicate to their bosses is the dual purpose of this research project. The variables thought to influence projected frequency and distortion are job situation, trust, and ambition.

Research Questions Revisited

The research questions posed in CHAPTER 1 (p. 6) provide a convenient framework for synthesizing the findings. The first question asked:

1. Do some employees transmit upward communications more frequently than others?

The current study is restricted in its ability to provide an answer to all questions. In addition to the limitations inherent in all laboratory experiments, data gathered to answer the first question require that particular caution be exhibited in interpreting results. On a five-interval (never to always) scale, the mean frequency score was 4.60. In other words, all subjects, regardless of whether they were in the problem or neutral group and possessed high or low trust and ambition, usually decided to communicate news about job situations to their immediate superiors. No statistical significance was found regarding this dependent variable. Therefore, job situation, trust, and ambition were rejected as accounting for the number of times that subordinates sent verbal messages to higher echelons.

Though the first hypothesis was rejected, it was rejected reluctantly. If projected frequency of upward communication scores varied, then the results would possibly have been different. Though explanations are speculative, perhaps the nature of the work environment in the test population was a factor. Badin Works subjects, randomly drawn and thus representative of the whole population, exhibited an unusually high tendency to communicate. The plant itself is located in a very small town: Badin, North Carolina, population about 2,000. Most wage-earners who live in the town work at the plant, and the few surrounding Stanly County mills offering alternative jobs also offer inferior wages and working conditions. The shift workers with whom the researcher chatted informally all complained about the nuisance of rotating shifts, but all felt that the financial incentive made working for ALCOA worthwhile. In fact, they felt lucky to have such good jobs. The supposed small-town atmosphere in Badin, the

homogeneity of employees, and their positive feelings about Badin Works might contribute to an abnormally high desire to communicate with superiors. In an atmosphere of friendliness and camaraderie it is not too surprising that communication is the norm. Additional research at a more hostile or less congenial plant is needed. Nevertheless, in the situation created to this experiment, projected frequency of upward communication could not be explained in terms of job situation, trust, or ambition.

The remaining questions pertained to distortion. The second one asked:

2. Does the nature of the situation account for distortion; are problems reported to superiors differently than neutral incidents?

In this study the answer is affirmative; there appears to be a direct relationship between job situation and distortion. The researcher manipulated the independent variable of job situation. The experimental group had an a priori precarious situation, while the control group was exposed to a placebo--a non-problematic situation. With one exception (to be discussed in regards to the fourth question), job situation did not account for puffs, sieves, or total distortions. The problem group subjects did, however, withhold less data from their superiors than the control group employees. Perhaps in an emergency situation, subjects thought that superiors had more right or need to know what was happening. Perhaps they felt that superiors would soon learn of the problem anyway and that it was wiser to try defusing inevitable rumor. Perhaps trusting people felt their superiors would understand and not be angry. Perhaps ambitious people identified with their supervisors and therefore did not

hesitate to convey the news. Motivations may have varied from person to person, but these are good possibilities.

The findings concerning withholdings and problems were expected and confirm face validity. If employees face a routine, everyday situation, there is very little reason to burden executives with details. Ordinary matters can be handled without involving higher management. If a crisis arises, however, subordinates may feel compelled to relay information up the hierarchy. Though bad news may cause subordinates to be less favorably evaluated by their superiors and though subordinates may be blamed for the problem, management still deserves to be fully informed. Any number of negative repercussions could arise from failure to report a problem or emergency situation. Omitting particulars could be dangerous to the individual and the firm.

The third question asked:

3. Do employees who have a high degree of trust in their supervisors have less need for misrepresenting potentially damaging information?

In this instance, yes. In problem situations, trusting subjects were less likely to withhold upward communications. Once again, this finding confirms both the literature and common sense. If one trusts his or her immediate superior, there is less reason to withhold data when problems arise at work. All known facts may be presented.

As in the case of projected frequency scores, trust scores were high. The mean was 104.63, with 140 being the highest possible tally. Eighty-four would have been a middle score, so Badin Works employees rated their superiors well above average. Perhaps the congenial

environment explains the high marks, and perhaps the results would have been more dramatic in an organization torn by conflict and dissension. Additional research could clarify this matter.

The final question asked:

4. Are highly ambitious people more apt to distort in order to help insure that they "look good" or advance in the firm?

No, not when faced with problems. In precarious situations, the ambitious subjects withheld fewer messages than the non-ambitious. The literature reveals a thriving controversey on this matter. The present study confirms the rigorous laboratory experiments of O'Reilly (1978) and refutes the less scientific studies of Read (1962) and Anthanassiades (1973). Perhaps the explanation for the results is again that ambitious people identify with their superiors, recognize their desire to know what is happening, and wish to be of assistance to them. These findings help to dispell the traditional convention that ambition is usually a negative, destructive force.

Conclusions

Pretesting suggested that within the limited parameters of a non-experimental, one-shot survey, a serious problem uppermost in the minds of subjects was troublesome communications. Respondents gave examples of communication dilemmas which caused anxiety or friction on the job. Areas mentioned included rumor transmission, fear to tell superiors the truth, and inability to give subordinates clear orders. When asked to recount a neutral job situation, the majority of subjects wrote about routine communication situations. No one mentioned a specific communication event that had been

considered a problem by anyone else. Examples of everyday communication included consultations with other employees, staff meetings, and answering mail.

As a result of pretesting, experimental (problem communication) and control (neutral communication) groups could be established and tested empirically. A controlled laboratory experiment was conducted where problem and neutral job situations were manipulated while trust and ambition were predictor variables in projected frequency and distortion of upward, written messages.

Major findings of the study are:

1. Job situation, trust, and ambition do not adequately explain the projected frequency with which employees communicate upward, but they do account for distortion (withholdings).

2. In neutral job situations, trust and ambition are negatively related to projected frequency of communication. That is, the more trust and ambition people have, the less need they have to communicate routine messages upward.

3. Of the four types of distortions, withholdings are most prevalent.

4. In problem job situations, trust and ambition are negatively related to withhold distortions. That is, the more trust and ambition people have, the less they need to withhold problems from superiors.

5. In neutral job situations, ambition is negatively related to puff distortions. That is, the more ambition people have, the less need they have to puff routine situations.

Implications for Future Research

It is hoped (and rather well documented in recent literature) that a better understanding of the communication process is emerging in industrial organizations. This comprehension is being advanced by solid empirical research and not merely by executive conjecture. Though personal managerial experience and intuition are helpful in formulating theories and hypotheses, there is need to substantiate them with scientific methodologies. This study provides one such methodology which has been applied to the study of upward communications, but many messages are not upward in nature. The entire format presented here could thus be replicated and applied to downward and horizontal transmissions. Such research could make a positive contribution to knowledge in the field.

The laboratory experiment, as conceived and executed herein, might have had different results if alternative populations had been tested. Findings cannot be generalized to other populations. Instead of drawing subjects from a small town, friendly company where people seem to have genuinely high regard for each other, subjects should also come from large, highly urbanized, more cosmopolitan areas. Moreover, if there were a greater degree of conflict among employees, there might be less tendency to communicate so often and so accurately. To replace the posttest-only laboratory experiment design employed here, a Solomon Four-Sample would be more appropriate. Subjects could thus be tested for conflict before the experiment commenced. An immense organization would be required, however, so that subjects could be randomly placed in four groups instead of two. Badin Works definitely does not employ

enough people to make the Solomon Four-Sample design feasible. Other organizations would have to be contacted.

Additional population variations would also be interesting. Rather than studying the communication habits of exempt employees, non-exempt workers could also be examined. The clerical and laboring sections of a firm are critical to production, but testing these employees poses special problems. First, union rules may often obstruct a researcher's access to laborers. Unions may, in fact, prohibit their members from participating in experiments. Furthermore, in the opinion of this researcher, general intelligence level may be a factor in how well subjects can complete the indexes developed by psychologists. Personal interviews would be necessary to insure that subjects could read and comprehend questions. Direct observation of behavior would be even better. Many Badin Works managers and supervisors are highly talented, college educated men and women, but some are not. Some subjects experienced a slight degree of difficulty responding to the trust and ambition scales, and a distressingly large number displayed deplorable writing skills. If this is the result among exempt employees, then the situation may be even worse among non-exempt employees. One would conclude that there is a need to study the communication skills and habits of the lower echelons. Little work has been done in this area. If a researcher could overcome the obvious obstacles, the benefits could be considerable in terms of plowing unfurrowed fields.

Finally, one more independent variable could be manipulated by the researcher. For the current study, only problem and neutral job situations were deliberately created for experimental and control

groups. In addition to these, subjects could also be exposed to favorable circumstances. Perhaps distortions, especially puffery, would increase if employees encountered blatantly positive job events and had an opportunity to transmit the news to superiors. Or maybe modest, trusting subjects would downplay such events. Either way, the outcome would be useful to know.

Potential varieties of future studies in industrial communication are vast. Corporations are generally receiving an increasing degree of attention by researchers, and communication issues are recognized as being crucial. Besides job situation, trust, and ambition, there are other variables which may affect information flow and distortion. There is much work for future researchers in isolating and testing these variables.

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APPENDIXES

APPENDIX A

PERMISSION TO PROCEED

THE UNIVERSITY OF TENNESSEE, KNOXVILLE
KNOXVILLE 37916

OFFICE OF THE VICE CHANCELLOR FOR
GRADUATE STUDIES AND RESEARCH

404 ANDY HOLT TOWER

AREA 615
TELEPHONE 974-3466

April 25, 1979

Dr. L. Evans Roth
Vice Chancellor for Graduate
Studies and Research
404 Andy Holt Tower
The University of Tennessee
CAMPUS

Dear Dr. Roth:

Janet Gaines, Department of Communications, has submitted a project entitled "Upward Communication in Industrial Organizations," CRP #811. The departmental human subjects committee has reviewed and approved this project. In their judgment, this project comes within that section of their approved guidelines which permits the Chairperson of the Committee on Research Participation to give approval to the project on behalf of the Committee.

After reviewing this project, I certify that it does conform to Committee and Departmental guidelines. Therefore, acting on behalf of the Committee, I have approved this project.

The responsibility of the project director includes the following:

1. Prior approval from the Committee must be obtained before any changes in protocol are instituted.

2. Signed consent statements from each experimental subject must be kept for the duration of the project and for at least three years thereafter.

3. The Committee must be informed of any physical or psychological effects on subjects for re-evaluation of the protocol approval.

4. A statement must be submitted (Form D) at 12-month intervals attesting to the current status of the project (protocol is still in effect, project is terminated, etc.).

The Committee wishes the project director success in her research endeavors.

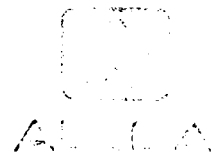
Sincerely,

ORIGINAL SIGNED BY L. B. CEBIK

L. B. Cebik, Chairperson
Committee on Research Participation

/meg
cc: Janet H. Gaines ✓
Jerry R. Lynn

ALUMINUM COMPANY OF AMERICA
P. O. BOX 576 · BADIN, NORTH CAROLINA 28009



1979 June 01

Mrs. Janet Howe Gaines
900 Forest Heights
Knoxville, Tennessee 37919

Dear Ms. Gaines:

We are pleased to have Alcoa salaried employees at Badin Works participate in the study related to your dissertation research. The letters inviting employees selected at random to participate have been mailed. I have also sent a personal note to Badin's Managers and Superintendents encouraging their full support to the program.

Best wishes for successful completion of this important research project.

Sincerely yours,

Ralph M. McAlister

RALPH M. McALISTER
WORKS MANAGER

RMM:jbp

APPENDIX B

SURVEY BOOKLET

SURVEY--PART 1

[Size of post card drawn in]

May 21, 1979

TO: Participants of an Opinion Poll

You have been randomly selected to represent your plant in an opinion survey. ALCOA managers have kindly given me permission to conduct an independent research project concerning your work environment. Therefore, in the next few days you will receive a short questionnaire to complete and mail back to me. Your responses will be completely anonymous and confidential, and I think you will even enjoy participating.

Best wishes,

Janet H. Gaines
Project Director

SURVEY--PART 2

[Size of questionnaire drawn in]

College of Communications
THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TENNESSEE 37916

Graduate Studies and
Communications Research Center
(615) 974-6651

May 24, 1979

TO: Participants in the Opinion Poll

Here's the brief opinion questionnaire I wrote you about a few days ago. I hope you can take a little time right now to share your thoughts.

This survey is part of a larger research study which also involves another southern ALCOA plant, and company managers have approved of my contacting you. The purpose of the project is to investigate potential problems which you face at work. Your responses will be completely anonymous, so please answer frankly. You are one of the few persons randomly selected to represent your plant. Therefore, your views are extremely important.

I might just mention that:

1. The questionnaire takes only a few minutes;
2. Your name should not be included;
3. There are no right or wrong answers--I just want your personal opinions.

Many thanks for your help in this research project.

Janet H. Gaines

Project Director

OPINION POLL

Please answer as freely as you can. Your responses will be completely anonymous and confidential.

1. Name the most serious problem you face on the job. It should be something which causes you some trouble or distress.

2. Do you usually discuss this problem with your immediate superior?

Yes ___ No ___

3. Recall the last time this problem occurred at work. In the space below and on the next page, write a description of the incident. You might include general references to factual events, to your opinions about the incident, or to whatever details help illustrate the problem.

4. Name your most common neutral job situation. This event or situation should occur routinely and should not be thought of as positive or negative, good or bad. Instead, it is just something that is part of a normal day's work.

5. Do you usually discuss this neutral situation with your immediate superior?

Yes ___ No ___

6. Recall the last time this neutral situation occurred at work. In the space below and on the next page, write a description of the incident. You might include general references to factual events, to your opinions about the incident, or to whatever details will help illustrate the neutral situation.

THAT'S ALL!

Many thanks for your help. Will you please check to be sure every question is answered? Then just seal this booklet, which is already stamped and addressed to me, and drop it in the mail as soon as possible.

College of Communications
THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TENNESSEE 37916

[Stamp Attached]

Janet H. Gaines

900 Forest Heights

Knoxville, Tennessee 37919

SURVEY--PART 3

College of Communications
THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TENNESSEE 37916

Graduate Studies and
Communications Research Center
(615) 974-6651

May 30, 1979

TO: Participants of the Opinion Poll

This is just a brief report on the opinion survey for which you received a questionnaire a few days ago. The completed questionnaires are starting to come in, and the results look interesting and useful. Many thanks for taking part and sending me your opinions.

With great appreciation,

Janet H. Gaines

APPENDIX C

EXPERIMENT PACKETS

INFORMED CONSENT

I voluntarily consent to participate in the research project conducted by J. H. Gaines. She has presented orally a brief description of the procedure, risks, and benefits and has offered to answer procedural questions.

_____

Signature, Participant

_____

Signature, Researcher

_____

Signature, Witness

INSTRUCTIONS: Please read the selection below very carefully and respond to the three questions at the end. There are no right or wrong answers, only your personal opinions about what you would do if faced with such a situation.

You work for the Aluminum Company of America as a department head. The work is carried out by subordinates in several shifts.

On the first shift are two key employees and a foreman. The employees, John Anderson and Paul Brown, have trained most of the other people who work with them. As a result, there is an unusually strong feeling of loyalty and solidarity among group members. The foreman, Henry Parker, agrees with the workers' general philosophy: "Keep your mouth shut when you see someone wearing a necktie." As a department head, you are a tie wearer, and you have found that very little information is ever volunteered to you.

One day Anderson discovers a way to improve a tool which is used daily on the job. He and Brown are able to draw and make the new instrument in the machine shop. The tool is a great improvement and speeds work. The men share their tool with others on the shift but employees are sworn to secrecy. Although the plant offers a $1,000 award to anyone who offers management a useful idea, the men decide that it's not enough. They believe that such rewards are really taken out of the workers' pockets. They fear that the improved tool might lead to layoffs or increased quotas. All workers agree to keep silent. Foreman Henry Parker soon learns about the tool, but he is content to let the employees handle the situation in their own way. You are unaware of all this, but your department soon earns an excellent efficiency rating. The plant manager notices the fine performance and warmly congratulates you. You are considered a likely prospect for promotion.

Several months pass and you discover the new tool quite by accident. You recognize that other necktie wearers will certainly expect you to report what you know. Other ALCOA plants would benefit, and you don't want to obstruct technical improvement. On the other hand, you don't want to "rat" on the employees, lose their goodwill, or admit that for months you haven't known what's been going on in your own department. If you tell anything, the whole story is likely to come out. You approach the foreman and ask him to convince the employees to make the discovery public and accept the cash award. He refuses. You then approach the employees directly, urging them to submit the discovery to management. They refuse.

1. What will you do now? If situations of this nature arise at work, would you inform the plant manager or others of your superiors:
(check one)

Always _____ Often _____ Occasionally _____ Seldom _____ Never _____

2. Will you inform them about the new tool?

Yes _____ No _____

3. Regardless of your answer to the first two questions, assume that you decide to inform your immediate superior about the tool. On the next page, write a memorandum in which you relate pertinent details.

[EXPERIMENTAL (PROBLEM) SITUATION]

1979 June 8

MEMORANDUM

TO: Immediate Superior

FROM: Department Head

INSTRUCTIONS: Please read the selection below very carefully and respond to the three questions at the end. There are no right or wrong answers, only your personal opinions about what you would do if faced with such a situation.

You work for the Aluminum Company of America as a department head. The work is carried out by subordinates in several shifts.

On the first shift are two key employees and a foreman. You have worked closely with the most capable employees, John Anderson and Paul Brown, and they have trained most of the other people who work with them. As a result, there is an unusually strong feeling of loyalty and solidarity between you and the group members. The foreman, Henry Parker, agrees with the workers' general philosophy: "Help management and management will help us."

One of your duties is to inspect progress on projects. On a routine visit, you find a mechanical problem similar to many others you've faced before. You immediately send for Anderson, Brown, and Parker to get their suggestions. After lengthy discussion, you all agree that future machine breakdowns can be corrected more quickly if one of the tools used daily on the job is modified. Anderson and Brown come up with the revision design, and with Foreman Parker's help they are able to draw and make the new tool in the machine shop.

You decide to test the modified tool for several weeks to see if it is really an improvement. The new tool turns out to be moderately successful and speeds work slightly. The plant offers a $1,000 award to anyone who offers management a useful idea. The three men turn in their idea and wait to hear if they will receive the prize money.

1. What will you do now? If situations of this nature arise at work, would you inform the plant manager or others of your superiors:

(check one)

Always _____ Often _____ Occasionally _____ Seldom _____ Never _____

2. Will you inform them about the new tool?

Yes _____ No _____

3. Regardless of your answer to the first two questions, assume that you decide to inform your immediate superior about the tool. On the next page, write a memorandum in which you relate pertinent details.

[CONTROL (NEUTRAL) SITUATION]

1979 June 8

MEMORANDUM

TO: Immediate Superior

FROM: Department Head

APPENDIX D

LIST OF ASSERTIONS AND POSSIBLE DISTORTIONS

LIST OF ASSERTIONS AND POSSIBLE DISTORTIONS

Experimental (Problem) Group

1. Anderson discovers a way to improve an existing tool.

   Withhold: failure to mention the assertion in any form.

   Sieve: failure to mention Anderson by name.

   Puff: Stating that Anderson discovers or invents a new tool.

2. He and Brown make the new instrument in the machine shop.

   Withhold: failure to mention the assertion in any form.

   Sieve: failure to mention the employees by name.

   Puff: stating that Anderson and Brown work long overtime hours to develop the tool.

3. The tool is a great improvement.

   Withhold: failure to mention the assertion in any form.

   Sieve: none.

   Puff: stating that the tool is the most original and creative invention ever designed by ALCOA employees or that it is mediocre.

4. The men share the tool with others who work on the shift.

   Withhold: failure to mention the assertion in any form.

   Sieve: none.

   Puff: stating that the men freely share the tool with anyone but management.

5. All employees keep the tool a secret.

   Withhold: failure to mention the assertion in any form.

   Sieve: stating that some employees agree to remain silent.

   Puff: stating that all employees take a solemn oath never to reveal the news to anyone.

6. The plant offers an insufficient award for useful ideas--$1,000.

   Withhold: failure to mention the assertion in any form.

   Sieve: failure to mention that the award is deemed too small.

   Puff: stating that the plant offers an extremely generous reward.

7. Foreman Parker learns of the tool but keeps silent.

   Withhold: failure to mention the assertion in any form.

   Sieve: failute to mention Parker by name.

   Puff: stating that Parker always had full knowledge of the tool but kept it secret or that he never knew.

8. You [the reader] learn about the tool by accident.

   Withhold: failure to mention the assertion in any form.

   Sieve: none.

   Puff: stating that you are directly told about the tool soon after its appearance.

9. You ask the foreman to inform management about the tool, but he refuses.

   Withhold: failure to mention the assertion in any form.

   Sieve: failure to mention that the foreman was asked to talk.

   Puff: stating that you threatened to fire or reprimand the foreman, but he still would not talk.

10. You ask the employees to inform management about the tool, but they refuse.

    Withhold: failure to mention the assertion in any form.

    Sieve: failure to mention that employees have been urged to talk.

    Puff: stating that you threatened to fire or reprimand the employees, but they still would not talk.

Control (Neutral) Group

1. You [the reader] find a routine mechanical problem.

   Withhold: failure to mention the assertion in any form.

   Sieve: failure to mention that it is you who discover the problem or that it is routine.

   Puff: stating that the problem is exceptional in some way.

2. You immediately consult with Anderson, Brown, and Parker.

   Withhold: failure to mention the assertion in any form.

   Sieve: failure to mention people by name.

   Puff: stating that you have the most ideas during consultation.

3. You all agree that future problems can be avoided if a tool is modified.

   Withhold: failure to mention the assertion in any form.

   Sieve: failure to mention the consensus.

   Puff: stating that the tool modification is totally or mainly your idea.

4. Anderson and Brown redesign an existing tool.

   Withhold: failure to mention the assertion in any form.

   Sieve: failure to mention employees by name.

   Puff: stating that a totally new tool is created.

5. Parker helps them make the tool in the machine shop.

   Withhold: failure to mention the assertion in any form.

   Sieve: failure to mention Parker by name.

   Puff: stating that Parker is mainly or solely responsible for the modification.

6. You test the tool for several weeks to see if it is an improvement.

   Withhold: failure to mention the assertion in any form.

   Sieve: none.

   Puff: stating that you test the tool for an extremely long or short period.

7. The tool is only moderately successful.

   Withhold: failure to mention the assertion in any form.

   Sieve: none.

   Puff: stating that the tool is unsuccessful or greatly successful.

8. The tool speeds work slightly.

   Withhold: failure to mention the assertion in any form.

   Sieve: none.

   Puff: stating that the tool does not speed work or that it speeds work greatly.

9. The plant offers $1,000 to anyone who offers a useful idea.

   Withhold: failure to mention the assertion in any form.

   Sieve: failure to mention that anyone can win the award.

   Puff: stating that the award is frequently or never given.

10. The three men turn in the idea themselves.

    Withhold: failure to mention the assertion in any form.

    Sieve: none.

    Puff: stating that you encourage the men to turn in their idea or that you did it for them.

NOTE: This is not an exhaustive list of distortions.

APPENDIX E

TRUST SCALE

INSTRUCTIONS: Please answer the questions below by checking the appropriate response. Do not spend more than a few seconds on any one item, and be sure to answer all questions. There are no right or wrong answers, only your opinions about what your own immediate superior actually does.

1. He refuses to give in when people disagree with him.

   Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

2. He does personal favors for the people under him.

   Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

3. He expresses appreciation when one of us does a good job.

   Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

4. He is easy to understand.

   Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

5. He demands more than we can do.

   Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

6. He helps his employees with their personal problems.

   Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

7. He criticizes his employees in front of others.

   Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

8. He stands up for his employees even though it makes him unpopular.

   Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

9. He insists that everything be done his way.

   Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

10. He sees that an employee is rewarded for a job well done.

    Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

11. He rejects suggestions for changes.

    Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

12. He changes the duties of people under him without first talking it over with them.

    Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

13. He treats people under him without considering their feelings.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

14. He tries to keep the people under him in good standing with those in higher authority.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

15. He resists changes in ways of doing things.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

16. He "rides" employees who make a mistake.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

17. He refuses to explain his actions.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

18. He acts without consulting his employees first.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

19. He stresses the importance of high morale among those under him.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

20. He backs up his employees in their actions.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

21. He is slow to accept new ideas.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

22. He treats all his employees as his equal.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

23. He criticizes a specific act rather than a particular individual.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

24. He is willing to make changes.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

25. He makes those under him feel at ease when talking with him.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

26. He is friendly and can be easily approached.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

27. He puts suggestions that are made by people under him into operation.

Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

28. He gets the approval of his employees on important matters before going ahead.

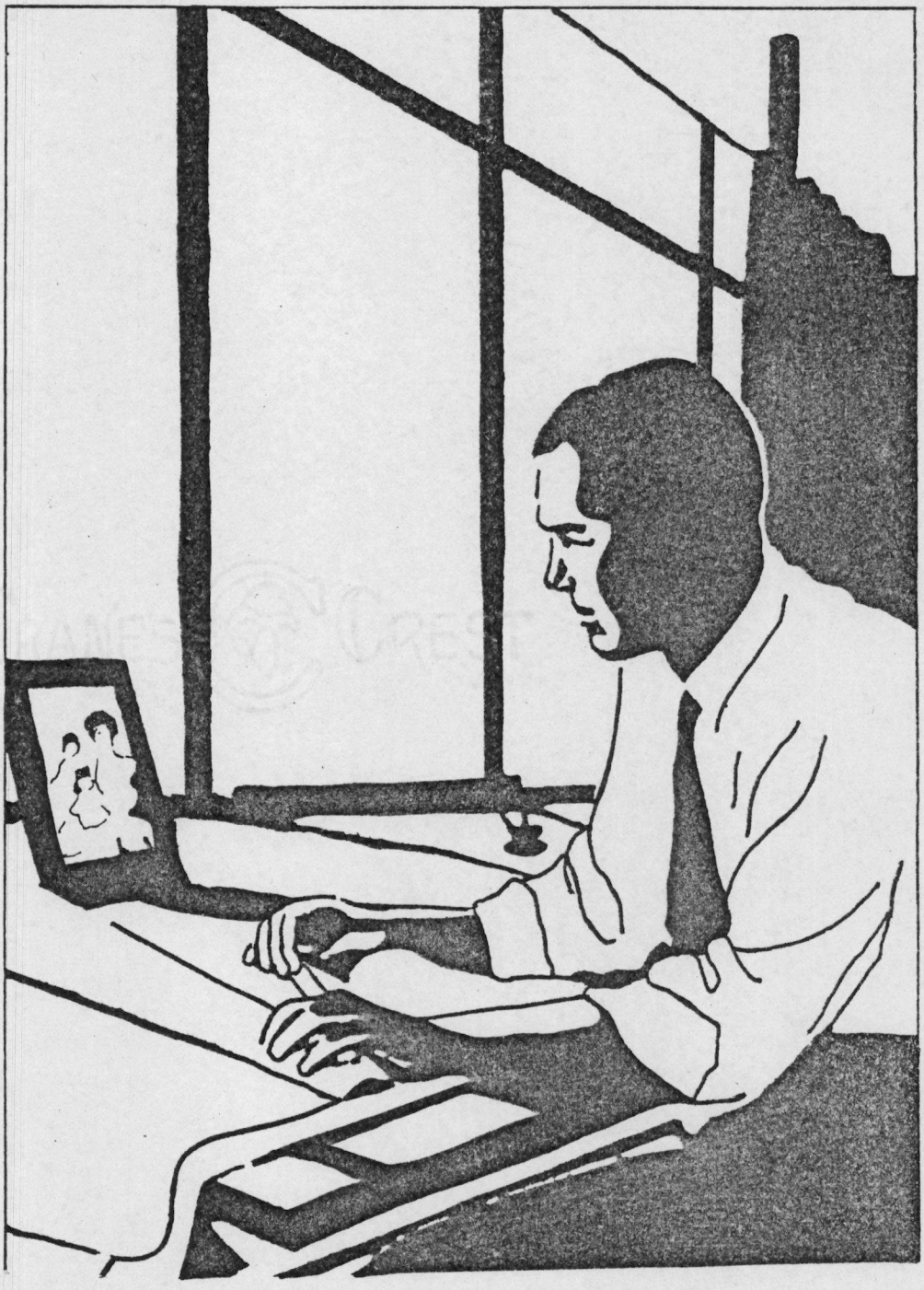
Always ___ Often ___ Occasionally ___ Seldom ___ Never ___

[TRUST INDEX]

APPENDIX F

AMBITION SCALE

[AMBITION INDEX]



INSTRUCTIONS:

Look at this picture for ten or fifteen seconds. Then on the next page write a brief, imaginative story about the picture and the following questions:

1. What is happening? Who is the man?

2. What has led up to this situation? That is, what has happened in the past?

3. What is the man thinking? What is wanted? By whom?

4. What will happen? What will be done?

VITA

Janet Howe Gaines was born in Albemarle, North Carolina on September 30, 1950. She graduated from North Stanly High School in June of 1968. The following August she entered Lenoir Rhyne College in Hickory, and in May of 1972 she received a Bachelor of Arts (with honors) in English. She was awarded an English Department graduate teaching assistantship at The University of Tennessee, Knoxville and received the Master of Arts in College Teaching degree in 1974.

After working as a Research Associate at The University of Tennessee's Office of Institutional Research, she entered the College of Communications in the fall of 1976. While there she served as a teaching assistant in the Department of Speech and Theatre, and in 1979 she received the Doctor of Philosophy degree with majors in organizational communication and speech.

Upon graduation she will teach at the University of New Mexico in Albuquerque.