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**THE LOCUS AND BASIS OF INFLUENCE
ON ORGANIZATIONAL DECISIONS**

by

Martin Patchen

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A conceptual approach to studying interpersonal influence is outlined as a framework within which results of a study of purchase decisions in business firms are presented. Data concerning the bases of influence in these organizations---especially data showing the importance of a person's stake in the decision---do not fit neatly into the well-known influence categories proposed by French and Raven. Disagreements among informants about who had most influence on each decision also raises questions about the general applicability of certain often-used measures of influence in organizations.

The Locus and Basis of Decision-making in Organizations¹

A number of recent writers have emphasized that the process of decision-making within organizations is a group process involving some kind of accommodation among individuals and units. This accommodation has been variously discussed in terms of such processes as resolving conflict (March and Simon, 1958), mutual adjustment (Lindblom, 1968), forming a winning coalition (Bauer, 1968; Thompson, 1967), and of both conflict and consensus-building (Hilsman, 1959).

Given that decision-making in organizations is a process of accommodation among individuals and units, it is important to know the basis on which given individuals or units exert more or less influence on the final decision. Who is influential and why? This paper discusses the basis of interpersonal influence and reports the results of a study which focuses on the bases of influence on organizational decisions.

The Bases of Influence

On the subject of the bases of influence, the work of French and Raven (1959) has been widely cited. However, while French and Raven have pointed to some important aspects of influence, their classification is limited in important ways.

¹The study reported here was conducted by the Survey Research Center of the University of Michigan under the direction of the author. Interviewing was done by the field staff of the National Opinion Research Center under the immediate supervision of Eve Weinberg and Jean Schwartz. The study was sponsored by Time, Inc. Arnold Tannenbaum and Robert Perrucci made helpful comments on an earlier version of this paper.

French and Raven define the basis of power in terms of "the relationships between O and P which is the source of that power" and then discuss five bases of power. Two of these (reward power and coercive power) are defined in terms of resources available to the influencer--i.e., "reward power is defined as power whose basis is the ability to reward" and coercive power is "similar to reward power in that it also involves O's ability to manipulate the attainment of valences" (1959:157).

However, referent power is said to have "its basis in the identification of P (target) with O (influencer)...a feeling of oneness of P with O, or a desire for such an identify" (1959:161). Thus, reference power is described not in terms of the resources of the influencer but in terms of the characteristics and motivations of the target. Similarly, legitimate power is defined in terms of the target person's characteristics and motivations--i.e., "as that power which stems from internalized values in P which dictate that O has a legitimate right to influence P and that P has an obligation to accept this influence" (1959:159). Finally, "expert power" is discussed in terms which appear that it in part depends on certain characteristics of the influencer (e.g., his credibility) and in part on certain resources he possesses (e.g., facts). It appears, then, that the five "bases of power" distinguished by French and Raven are not described in a conceptually parallel way. Instead, for different types of power, different aspects of the process underlying successful influence are highlighted.

Table 1 presents a conceptual framework for analyzing social influence which is intended to consider more systematically the various components of the influence process. Looking first at the person exerting influence, the scheme directs the investigator's attention to the relationship between his characteristics, the resources available to him, and his role in the decision process. Thus, for example, the person with the characteristic of specialized training and experience has information resources and may, because of his expertise, conduct certain investigations or tests relevant to the decision. Similarly the scheme draws attention to the relation between the characteristics, needs, and decision-making role of those who are the targets of influence.

Most important, the scheme directs attention to the degree of correspondence between the resources of the influencer and the needs of the target as well as to the types of communication between them following from their respective decision-making roles. Thus, for example, the person with information about the consequences of possible decisions has an important resource which meets the needs of the target person who has a need for such information. The person exerting influence may have the role of giving relevant information to the target person whose role may be to review such information from this and other sources. The interaction between these persons is likely to have an effect on the target person, by making certain options seem more or less desirable and perhaps by indicating new options not considered previously.

The five rows of table 1 correspond to the five bases of power discussed by French and Raven--i.e., expert power, reward power, coercive power, referent power, and legitimate power. (The sixth row will be discussed later). Note that the more explicit recognition of these separate aspects calls attention to some possible important features of the influence process which might otherwise be overlooked. For example, in considering referent power (defined by French and Raven in terms of characteristics of the target person), one is led to look also for characteristics and resources of the influencer which may lead the target person to conform because of a desire to be similar to, or to be approved by, the influencer (see the fourth row of Table 1).

Though the examples in Table 1 are intended to mirror the five bases of power discussed by French and Raven, there is no necessary implication that these are the only five types of power that could be distinguished. A listing of types of power would probably depend on a categorization of the needs of the target person and/or the resources controlled by the influencer.

The conceptual framework outlined in Table 1 suggests a number of empirical questions. What types of characteristics will influential persons be found to have in various types of situations? What types of resources will they be found to command? In what types of activities will they be found to engage? Similar questions may be asked about the characteristics of targets of influence, their needs and their activities, as these relate to the characteristics, resources and activities of influencers.

With respect to influence on organization decisions, the writings of a number of theorists suggest some answers to these questions. A number of writers have stressed the importance of specialized knowledge in gaining organizational influence (Thompson, 1967, Chapter 10; Lawrence and Lorsch, 1967). March and Simon (1959, Chapter 5) have discussed the problem-solving process as one of the fundamental ways of resolving conflict in organizations. These writings would lead us to expect influentials in organizations often to have the characteristics, resources, and activities which are consistent with expert power.

Many discussions of decision-making and influence in organization, especially recent ones, have stressed bargainings as a key process by which accommodation is reached in organizations (March and Simon, 1959; Bauer, 1968; Lindblom, 1968; Hilsman, 1959). As Lindblom points out, discussions of bargaining are concerned essentially with "the play of power." They are, thus emphasizing the importance of reward power and coercive power in organizations. This line of theoretical work would lead us to expect influentials (and targets of successful influence) often to have the characteristics, resources and activities which characterize reward power and coercive power. On the basis of Weber's classical work (Weber, 1947) and our knowledge of bureaucracies we also would expect influentials often to have the characteristics, resources and activities which typify legitimate power. (Referent power has received less theoretical attention as a basis of power in organizations.)

However, although there has been some research on the bases of supervisory influence over subordinates in organizations (Bachman, Bowers and Marcus, 1968), there is little empirical evidence concerning the bases of influence in organizational decision-making.

The rest of this paper presents a report of a study which provides data on this topic. That portion of the data which concerns the characteristics, resources, and activities of influential persons suggest certain bases of influence not covered by the French and Raven schema. The data also raise some important methodological questions about the measurement of influence in organizations. (A descriptive account of each case is available elsewhere (Patchen, 1969).

Description of the Study

The study concerned decisions by business firms to make specific purchases. Thirty-three such decisions in eleven firms were studied. Most of these decisions (e.g., to use hydrochloric acid instead of sulfuric acid for steel producing) were of considerable importance to the companies, as judged by their possible effects on company operations, although some decisions (e.g., to purchase a pick-up truck) were of more minor import.

Companies Studied. The names of the companies which were asked to participate in the study were obtained from the Fortune Plant and Product Directory of the 1,000 largest U.S. Industrial Corporations, 1966. Only companies which have central or divisional headquarters in Chicago were contacted. Letters, followed by telephone calls and sometimes by personal visits from the study director, were sent to companies selected in alphabetical order from the Fortune Directory until the goal of ten co-operating companies had been obtained. (Approximately thirty-five companies were contacted before the goal of ten was reached). An eleventh company was added to the study after it proved possible to study only one purchase decision in one of the original set of companies.

The companies included in the study fall in the following categories: (a) manufacturers of heavy industrial equipment (e.g., railroad cars, moving equipment, presses)--three companies; (b) manufacturers of lighter goods, including consumer products (e.g., farm implements, automotive parts)--two companies; (c) producers of food products--two companies; (d) producers of musical instruments, especially organs and pianos--two companies; (e) steel producer--one company; (f) publisher--one company.

Since the sample of companies is small and is composed of companies which were willing to co-operate in the study, it is not necessarily representative of all companies listed in the Fortune Directory, nor, of course, of the larger population of business organizations. However, as indicated, the companies included do represent considerable diversity in the type of product produced.

Choice of Decisions. At each company which agreed to co-operate in the study, a person knowledgeable about the purchasing function (almost always the head of the Purchasing Department) was interviewed informally by the project director. The project director indicated that "we'd like to focus not on repetitive purchases where the same product is bought over and over again by the company, but rather on non-repetitive purchases where a product was bought for the first time or had been bought only infrequently before." In clarifying the type of non-repetitive purchase with which the study was concerned, an interest in purchases which required deliberation about whether or not to make the purchase, and/or what type of product to obtain, was emphasized. A preference was also expressed by the study director for

cases of purchase decisions (a) which had been made within the last year, and (b) for which more than one supplier of the product is available. No minimum or maximum dollar amount for purchases was specified.

Once the general type of purchase to be focused on had been clarified, the project director asked whether the company had made any purchase recently in each of several product categories. If a brief description of the purchase decision satisfied the study director that the case met the criteria for inclusion in the study, it was accepted and further basic data about the purchase (e.g., dates of requisition and purchase order, suppliers name) were obtained. In almost all companies, purchase decisions in the designated product categories which met the criteria were few and there was little opportunity for selection among cases. An average of three purchase (or lease) decisions were studied at each of the companies. The products about which the purchase decisions were made fall in the following categories: (a) use of new materials (metal, plastics, chemicals, rubber)--eleven decisions; (b) office machinery--eight decisions; (c) machinery and tools--six decisions; (d) trucks--four decisions; (e) office furniture--one decision.

Interviewing. For each purchase decision to be studied, the project director asked his informant in the company (usually the head of Purchasing) for the names and titles of those people who were involved in the purchase. These names, along with other basic data about the purchase, were given to the interviewer who was assigned to that particular company.

Each interviewer was told: "You are to make appointments with all those to be interviewed. You should interview all those persons who had any part in the purchase. Not all of these persons' names will be given to you by the project director. As you interview initial persons, you will learn the names of other persons whom you will need to interview."

The original intention was, thus, to follow the chain of communications concerning the purchase so that interviews would be conducted with every person who had any part in the events surrounding the purchase. This intention was, because of practical constraints, only partially realized.² However, with the exception of a few purchase cases (which were dropped from the study), it proved possible to interview enough persons connected with each purchase decision to get a substantial amount of information about how the decision was made. A total of 180 interviews were obtained concerning the thirty-three cases, an average of 5.5 interviews per purchase decision.

The great majority of interviews were conducted on the premises of the company concerned. A few interviews, with persons in company facilities located in other cities, were conducted by telephone.

²The major constraint was that those at the participating companies who were kind enough to offer their company's co-operation in the study almost always felt it necessary to put limits on the amount of personnel time which could be devoted to the study. This meant, in some companies, that permission was obtained to interview the persons who had the greatest involvement in a purchase decision, but not those peripherally involved. In addition to this frequent general constraint, it was sometimes impossible to interview specific persons for one of a variety of other reasons--such as refusal by this person on the grounds of lack of time, illness, or the person having left the company.

Information Obtained. Each person involved in the decision was asked about a variety of relevant matters, including the following:³

1. Who brought the problem to his attention and with whom he discussed the problem.
2. His role in the decision.
3. Who was involved at any stage of the decision.
4. Any differences of opinion within the company.
5. How differences of opinion were resolved.
6. Whom he judged to have had most influence on the decision and why this person exerted such great influence.

Results

People involved in Decisions. In order to provide a context for the results concerning influence on decisions, it is useful first to examine information bearing on the number of people involved in the decisions studied.

First, we may consider the total number of persons who were mentioned by respondents as having been involved in some way in each of the decisions studied--i.e., as having participated in discussions, gathered relevant data, given final approval, etc.

For all thirty-three decisions in eleven companies, an average of 15.0 persons were mentioned by respondents as having been involved in any way in each decision. Typically, especially for the more important purchases, the persons involved in each decision represented a variety

³Other questions asked in the interview concerned the reasons for the decisions which were made, sources of relevant information, personal contact with suppliers, satisfaction with the decision, and a few basic personal facts about the respondent.

of types of organizational units and specialities. For example, in a company which makes automobile parts, a decision to use zinc rather than aluminum for one of their products involved engineering, sales, manufacturing, and purchasing, as well as some other units. In some cases men at several levels of company structure (e.g., local plant and corporate office) were involved in a decision. In one such case, a respondent describing the decision to purchase a new piercing press quipped, "They have everybody but the Pope in on a decision like this."

The number of participants in a decision varied more by the magnitude of the decision involved than by company. For twenty decisions rated by the researcher as being of moderate or major importance, an average of 19.8 persons were mentioned while for thirteen more minor decisions, an average of 7.9 persons were mentioned. Since we may not have identified some of the people involved in each decision (especially those with more peripheral involvement), these figures are clearly not precise, but they should serve to give at least a rough estimate of the number of persons with some involvement.

In addition to the question of how many people were involved in any way in the decisions, we may ask also how many people had an important role in the decision. We asked each respondent, "Did you have any responsibility for deciding that the company should get a (general type of product)?" If he said "no," we asked, "Were you consulted about the need for getting a (general type of product)?" Later in the interview we asked similar questions concerning his responsibility for (or being consulted about) "the specific type of (product) to be purchased (rented) or the particular supplier from whom it was obtained."

Out of an average of 5.5 respondents per decision, an average of 3.7 persons said they had some responsibility for the basic decision to buy a product in this category and an average of almost one additional person (.8) said he was consulted about the basic decision. With respect to the choice of a particular product or supplier, an average of 2.8 persons said they had some responsibility for this decision and an average of .9 persons said they were consulted about the decision. Overall, an average of 4.8 out of 5.7 respondents indicated that they had some responsibility for or were consulted about either the basic to buy or the decision about the specific product to buy. These figures give very conservative estimates of the actual numbers with an important part in the decision since they are based only on the number of persons interviewed; in some cases, one or more persons with an important role in the decision could not be interviewed. However, these data do indicate that the decisions studied were typically made by a group of people and not by just one or two persons. Additional confirmation that a number of people typically had important roles in the decision comes from the data, to be discussed later, concerning the identity of those who had greatest influence on each decision.

Resolving Differences of Opinion

After asking about the respondent's role in the decision to get a product in the general category, we asked: "When the subject was first discussed, were there any differences of opinion within the company about the desirability of making this purchase (rental)?" Later in the interview we asked a similar question concerning possible differences of opinion in choosing a particular type of product or a particular supplier.

With respect to the basic decision to buy, there was at least some evidence of differences of opinion (one or more reports) in twenty-two out of the thirty-three cases and considerable evidence of disagreements (reports by half or more of the respondents) in thirteen cases. With respect to the decision about what specific product to buy, there was at least some evidence of differences of opinion in eighteen cases and considerable evidence in nine cases.⁴ Taking the cases as wholes, in twenty-seven of the thirty-three cases at least one person reported a disagreement within the company at some point during the decision-making process. In nineteen cases, half or more of the respondents reported a disagreement at some point.

When a disagreement was mentioned, the respondent was asked the reasons for this difference of opinion and then was asked, "How were the differences resolved?" Table 2 shows a tabulation of answers given to this question.⁵ The answers are shown separately for resolution of differences concerning whether to make a purchase of the general type and for resolution of differences concerning the specific type of purchase. The table shows the number of cases in which a given method was mentioned one or more times as a method used to resolve differences and also shows the total number of mentions for each method.

⁴The decision to buy a product in a certain category and the decision about the specific type to buy were separate decisions in some cases but were closely intertwined in other cases.

⁵Reliability between two coders (the study director and an assistant) in coding these responses was .76. Reliability was computed by dividing the number of coding agreements by the sum of agreements plus disagreements. The "don't know" category was omitted and categories considered sub-categories of "problem-solving" (1, 2, and 3 in table 2) were combined for this computation. (If the three problem-solving sub-categories are considered separately, the reliability is .73.) Differences between codings were decided by the study director.

The data show that getting more information (or further analyzing information) was the method most frequently reported as the way in which differences were resolved. For example, describing the resolution of initial differences over what computer would best fill their needs, an executive of one firm said, "We brought in all known computer manufacturers and requested an exact explanation of price, work, etc." An engineer in another company, describing the resolution of differences concerning whether a certain type of laminate should be used in cabinet manufacture, said, "Sales dropped their opposition when they saw a sample of a cabinet which was made up."

Meetings or discussions were mentioned with second greatest frequency as the way in which differences were resolved. Also mentioned with moderate frequency were finding a new solution to the problem which apparently satisfied everyone (e.g., "We decided to carry only stress-proof (material) which got rid of the increase in inventory problem"); persuasion (e.g., "After a long, slow process, they (division heads) were convinced"); and getting consensus ("e.g., an agreement was made by consensus of opinion"). Resolution of a dispute by a person in higher authority was mentioned in only a few cases while mention of a decision being made (or most influence being exerted) by a person not in higher authority was slightly more frequent.

Other methods of resolving differences which were mentioned only rarely were conducting a vote or survey of opinion within the company; further defining or specifying goals; and negotiations or bargaining (only one mention). No mention at all was made of differences being resolved in ways which could be coded as "rewards promised or expected" for giving in or as "threat or expectation of penalties" for not giving in.

In general, the picture that emerges from these data is that differences of opinion concerning these company purchases seem to be resolved with a heavy emphasis on problem-solving, especially by getting more information and devising new solutions and occasionally by further defining goals. The data also suggests a frequent emphasis on reaching consensus, as indicated especially by the references to meetings and discussions, persuasion, and getting consensus. Even the few references to taking a poll or vote seem to reflect a concern with getting widespread agreement, if not total consensus. Also, the mention of devising a new solution, which is in part problem-solving, may sometimes be used to help reach consensus.

Judging Who is Most Influential

So far the data have indicated that a group of people were usually involved in making most purchase decisions and that when disagreements arose, as they frequently did, they tended to be resolved by further information-seeking and by a process of reaching consensus. But we have not yet considered who was most influential in this process of accommodation nor why certain persons were particularly influential.

After each respondent was asked about his part in the purchase decision, about any differences of opinion within the company, and about the reasons for the decision to get a product in this general category, he was asked: "Regardless of who had the final authority, who, would you say, had the most influence on the decision to get a (product)?" Later in the interview, after the choice of a particular type of product and/or supplier was discussed, he was asked a closely similar question: "Regardless of who had the final authority, who, would you say, had the most influence on the choice of which particular (product) to get?"

The most striking fact about the answers to these questions about influence is that the people involved in each decision do not agree very much about who had "most influence." For both types of decision, the number of persons named as most influential increases almost as fast as the number of informants increases, as Table 3 shows. Although the proportion of persons named as most influential to informants tends to drop as the number of informants increases, this drop is not large or consistent. Clearly, there is much disagreement among informants as to who had the most influence on specific decisions.

These differences in judgments about who is most influential may stem from a number of sources. First, persons who took some part in an organizational decision sometimes have varying amounts and kinds of information about the entire process by which the decision was made. Secondly, a few informants may have wished to inflate their own importance by naming themselves as most influential. However, this cannot be a large effect because the average number of persons naming themselves was 1.3 per decision (out of an average of 5.5 informants), both for decisions to buy and for decisions about what particular product to buy.

Several more fundamental reasons for differences in perceptions of influence have to do with the nature of the decision-making processes. The data on resolution of differences have already suggested that purchase decisions are usually made by mutual agreement among the interested parties. A review of the individual cases (see Patchen, 1969) indicates also that in most cases there was no single prime "decision-maker" but that instead the decision was made through a

process of consensus and accommodation. One illustrative case is the decision by an engineering "job shop" to use a new type of steel for cross-rods in conveyors which they were manufacturing. Discussing this decision, the Superintendent of the Machine Shop said, "It's a combined effort between Engineers, Shop, and Purchasing." The Superintendent of Industrial Engineering added that, "No one had the final say on it... all three decisions (engineering, purchasing, manufacturing) were favorable."

In addition to the fact that the locus of decision-making is often diffuse, it also frequently happens that various people play different kinds of roles in the decision, often at different stages. For example, the decision by a manufacturing company to lease, and switch additional clerical work to a larger computer involved persons in a variety of roles. The Plant Accountant at one of the major plants, informants said, "led the way" in pointing out the need for this computer. Several persons, including the Corporate Manager of Computer Operations conducted an "economic feasibility study." The Chief Engineer was a central person in the discussions because much of the work would be done for his department's operation. After long study and discussion, formal reports were presented to the Plant Manager whose job was to evaluate the reports and to weigh differences of opinion. Then the Plant Manager decided, he said, that the "advantages outweighed the disadvantages." Finally, the Chief Engineer and Plant Accountant had to "sell" the computer idea to the Controller at the Corporate level, who is in charge of Data Processing for the entire company. Reporting on a decision of this kind (which is much abbreviated here) it is small wonder that respondents will differ on whom they name as most influential in a decision.

Bases of Influence

While informants often did not agree on who was most influential in decisions, it seems clear from their descriptions of the decisions that a person named as most influential had an important role in the decision.

After an informant had named a person as having the most influence on a specific decision (either the basic decision to buy or the more specific decision), we asked, "Why did (person) have so much influence on this decision?"⁶ Responses were coded by the author and another coder into the categories shown in Table 4.

For each purchase decision, the percentage of answers falling into each response category was tabulated. Then these percentages were averaged for the thirty-three decision cases studied. This procedure gives each purchase decision an equal weight in the results regardless of the number of respondents answering about that case. The results were tabulated separately for (a) reasons given for influence on the decision to buy a product of the general type; (b) reasons given for influence on the decision to buy a specific product within the general type (e.g., a particular make or from a particular supplier); and (c) reasons relevant to influence on both sub-decisions combined. To what, then, was influence attributed?

⁶Reliability between the two coders was .82. The reliability was computed by dividing the number of agreements in coding by the sum of agreements plus disagreements. Differences between coders were decided by the study director after discussion with the other coder. In a few cases, codings whose reliability was originally assessed under the same general category (e.g., expertise) were separated in Table 4 in order to show the distinction between characteristics and activities of the influential person.

Characteristics of Influentials

A large majority of answers concerned characteristics of the influential (see Table 4). The most frequently mentioned characteristics are ones which have to do with the extent to which a person will be affected by the decision. Sometimes the explanation for influence was a general statement that someone would be affected. For example, in a company which makes musical instruments, the choice of a tractor truck was said by one informant to have been influenced most by the traffic supervisor. "He lives with the situation so he must have the choice," he said. Closely related is the somewhat more specific assertion that a certain person was influential in the decision concerning a purchase because the product would be used by him or by his department. For example, in describing the decision to use vanadium in the production of steel, the Superintendent of the Mill involved named himself as most influential "because I had to use it in my open hearth."

In addition to being affected by virtue of having to use the product, a man may be affected in other ways by the decision. A variety of responsibilities, the meeting of which might be affected by the decision, were mentioned as reasons for great influence. These included a man's responsibility for the unit where the product was to be used; responsibility for the performance of the product; responsibility for outcomes (e.g., sales, profits) which may be affected by the purchase decision; and financial responsibility for the purchase. For example, in discussing the decision by a steel company to switch from using

silico-manganese to ferro-manganese in the production process, the Assistant to the Works Manager named the Open Hearth Superintendent and himself as having been most influential in this decision. "We are the two people directly responsible for the product," he explained. In discussing the decision to buy a new printing press, the Corporate Vice President in charge of purchasing named the manager of a new plant which would use the press as most influential; "Mr. B. has to run the plant at a profit," he explained. In another company, the Plant Engineer named the Sales Manager as having most influenced the decision to buy a new piercing press for manufacturing, saying, "He says he needs it and if he can't get it he won't fulfill sales." In each of these cases, the person or persons named as most influential did not have the formal authority to make the decision.

Another way in which a man may be affected by a decision is because he or his unit has need for a particular product or service. Such need as a basis for strong influence was mentioned particularly with respect to the general decision to buy a product in a certain category. An example of need being a basis for influence is provided by the case of the decision by a manufacturing company to lease a large computer. The Chief Engineer was named as most influential in this decision by one respondent who explained, "Because he's the one that would require it for his department's operation."

For all cases, an average of 24.5 percent of all reasons given to explain a person's strong influence concerned the influential being affected by the decision in some way. Such reasons were somewhat more frequent with respect to the basic decision to buy a product in the

general category than with respect to the decision about what specific product to buy.

Expertise

The second most frequently mentioned characteristics of influentials were ones bearing on their expertise (an average of 16.9 percent of all reasons given for influence). Sometimes this was general knowledge relevant to the decision--e.g., a vice president of engineering was said by one informant to have been most influential in the choice of a type of piercing press "because he knows presses--forty years experience." Sometimes it was information specifically about the decision to be made. For example, in another company, the manager of the engineering and control department was named as having had most influence in the decision to buy a new printing press "because he analyzed it all and knows the most about all--price, specs, and everything about the whole deal." The data show also that expertise is an important basis of influence both in the basic decision to buy a product in some general category and in the decision about what specific product to get. However, expertise is more prominent as a basis of influence with respect to the latter type of more specific decision.

Responsibility for Decisions

Another type of characteristic mentioned with some frequency was a man's formal responsibility to recommend a product (an average of 15.5 percent of reasons given concerning both decisions) or to perform tasks which provide vital information for the decision (15.7 percent of reasons about both decisions). For example, a buyer in a musical

instruments company was said by a respondent to have had the most influence in choosing a mold used for making organ parts. "That's how this company is operated and it's also his function," the respondent said. In most cases such influence reflects a particular division of labor in the company. However, it appears rare for someone (e.g., a purchasing agent) to be delegated so much responsibility for purchase decisions of a given type that his recommendation will override the wishes of those who will use the product or be affected by it. Thus, in the case of the mold for organ parts just mentioned, other respondents (including the buyer himself) named several engineering personnel as most influential.

Other Characteristics

Although we asked informants to judge who had greatest influence "regardless of who had the final authority," some respondents referred to a person's authority (an average of 5.4 percent of all reasons). Such comments almost always referred to a person's formal, legitimate authority--e.g., "He has final approval," rather than to a man's ability to reward or punish others.

Interest of the person or his unit in the decision (perhaps due to being affected by this decision) was mentioned occasionally as a reason for influence. In addition, a few other characteristics of the influential person--e.g., judgment, alertness, key position for contact with the vendor--were mentioned, but none of them more than once or twice.

Finally, a general reference to the responsibility or the position of a man--e.g., that he is head of engineering or quality control

manager--was made at times. However, such answers are not specific enough to be very useful. One does not know what it is about this position--the knowledge, being affected by decision, responsibility to recommend the decision, etc.--which is seen as leading to influence.

Activities of Influentials

Although their characteristics were most often cited as the reasons certain persons were most influential, the activities of particular persons were sometimes given as reasons for influence. The most frequent type of action (an average of 6.7 reasons of all reasons given) had to do with prodding others to act. Sometimes this involved bringing a need (either one's own or others') or a new product to the attention of others. Sometimes the activity consisted of championing an idea within the company. For example, one manufacturing corporation made a decision to switch from aluminum to zinc for the manufacture of an auto component. The purchasing director, who had been concerned about problems in getting sufficient aluminum, attributed the greatest influence in this decision to himself, saying, "I just pushed it."

The other type of activity mentioned with any frequency (5.5 percent of all reasons for influence) concerned information-gathering or technical activities. These included such activities as gathering or reviewing facts, conducting tests, and preparing product specifications.

A scattering of other activities--including making a recommendation, presiding at a meeting, and getting money for the purchase--were also mentioned as reasons for influence but none with any frequency. It

should be noted that there were no references in all the responses to making either a threat or a promise as a reason for influence.

Discussion

Assessment of Influence. In reviewing the results, we may first consider some methodological implications of the data. The data have indicated that there is often much disagreement among informants in response to general questions about who had the most influence on each of these decisions. This result raises questions about the usefulness of such general, global questions as a method of assessing relative influence.

Students of power and influence in organizations have often asked informants to make an overall assessment of the amount of influence exerted by each of several groups or levels in an organization. Many studies (including several directed by this writer) have used the "control graph" devised by Tannenbaum and Kahn (1957). This technique relies on questions of the general form: "In general, how much say or influence do you feel each of the following groups has on what goes on in your organization?"

A number of studies using the control graph (Tannenbaum, 1968) or other global measures of influence (e.g., Lazarsfeld and Thielens, 1958) have found interesting relationships between measures of control and other aspects of organizational structure and function. But questions have arisen concerning the reliability of global judgments of influence in organizations. Although the available evidence is somewhat mixed, it has generally indicated that people at different hierarchical levels have somewhat different perceptions concerning the amount of influence

exerted at each organizational level (Williams, Hoffman, and Mann, 1959; Tannenbaum, 1961; Patchen, 1963, Bowers, 1964; Baum, Sorenson and Place, 1969). The data from the present study suggest two important sources of differences in judgments about influence. One derives from the fact that the nature of the contributions which various persons make to the overall decision varies considerably.⁷ Different respondents may have in mind different types of contributions, at different stages of the decision process, when they answer questions about overall influence. The second, and related, source of unreliability in judgments arises from the fact that the process of decision-making is often one of accommodation. A decision is often, in essence, a joint one. This does not necessarily mean that all of the persons and units involved in the joint decision are equal in influence (though the influence of all may be substantial). The lack of a clear-cut decision-maker does, however, make it more probable that these informants will differ in their global judgments of influence--particularly with regard to relative influence.

Where there are large differences among organizations with respect to the relative influence exerted at various levels, global measures of influence may still be most useful. They offer advantages of economy and their generality permits the comparison of identical measures across organizations.

⁷See Gergen (1968) for a discussion of the different types of inputs which persons may make to decisions during the course of the decision process.

However, the present results suggest that where a number of people (or levels) have had some substantial role in a decision, it is necessary to go beyond general questions in order to make meaningful distinctions concerning relative influence. It may be more meaningful in many cases to determine the specific actions of various persons throughout the decision-making process and the reactions which these actions elicit from others (their effects). On the basis of such information, the investigator could assess the relative importance (i.e., influence) of each person with respect to the outcome of specific aspects of the decision-making process (e.g., the judgment that a problem requiring action exists, compilation of information about alternatives, recommendation of action, approval of recommendations). Or he might ask informants to make such specific assessments. Such assessments by informants about specific aspects of the decision-making process may be expected to show better agreement than their assessments of "overall" influence.⁸ Where the researcher wishes to get a measure of the total influence of various persons, he can do so by combining in some way data concerning the inputs of each person into each aspect of the decision process.

⁸Earlier investigation by the author (Patchen, 1963) indicates that judgments of influence are more reliable when the topic of influence is made specific; that investigation did not consider separate aspects of the influence process, however.

Bases of Influence

We turn now to a consideration of the implications of the substantive findings. The data from these cases fit well the description by recent theorists of organizational decision-making as a process of accommodation among a number of concerned individuals and units. When differences of opinion arose in these cases, they appear to have been resolved usually by a process of seeking consensus, in part through further information-seeking. Evidence of bargaining as a method of reaching a decision is rare. As March and Simon point out (1958, p. 131), bargaining as a decision-making process has some potentially disruptive consequences, placing strains on the status and power systems in the organization. The present results supports their speculation that organizations will tend to try to solve disputes by problem-solving and persuasion. Of course, such techniques may not be successful in some circumstances--e.g., when common goals are weak and where each side is committed to a different solution.

With respect to the central question addressed by the study--that concerning the basis of influence--the data permit some conclusions about influence in these situations. Considering the five types of power distinguished by French & Raven, the data indicate first that coercive power and reward power are noticeable chiefly by their absence. Influence was never attributed to the characteristics of control over material sanctions nor to activities involving use of such sanctions (e.g., threat, promise, punishment, reward). It is possible that some respondents were reluctant to talk about such modes of influence. It may be, too, that the possible use of sanctions

lurks behind other characteristics or activities which were sometimes mentioned by respondents as reasons for influence. Still, the total absence of reference to sanctions suggests that their direct use was rare in these situations. Also, apparently rare in these situations, was referent power. Such a basis of power might be expected to be revealed in part by references to admirable personal characteristics of influentials, which might serve as a basis for identification. Alternatively, mention of the personal loyalty a man commanded might also reveal the presence of referent power. Such explanations of the basis of influence were almost totally absent.

Influence did appear to be due often to expert power. A man's expertise was frequently mentioned as the reason he was influential in a decision. Activities connected with expertise--e.g., running tests--also were mentioned sometimes. A second basis of power which was present, was legitimate power. The responsibilities, duties, or formal authority which a man had--the characteristics of someone with legitimate power--were given with some frequency as reasons for influence.

What is most interesting in the data, however, are the reasons for influence which are given most often by respondents and which do not fit neatly into any of French and Raven's five categories. These explanations concern characteristics of influential persons which make them affected in some way by a decision. (Also relevant here are explanations of influence in terms of activities which are most likely to be carried out by those affected by the matter--e.g., bringing a need to the attention of others). Why should being affected by, and thus having a stake in a decision, give one strong influence on the outcome? What is the basis of the power which is apparently exerted by such persons?

Part of the answer to this question probably lies in the fact that those who have the greatest stake in a decision are likely to bring their needs to the attention of others and may push their preferences. However, these factors alone do not seem to be the major ones involved. The comments of many persons focused not on the fact that those affected pushed their preferences but that others thought it appropriate (other things roughly equal) to defer to those preferences. The key to understanding the influence of those most affected by a decision is, I suggest, that these affected persons are likely to react to the decision in a way which affects others. And others know this.

First, if faced with too many contrary decisions on matters which directly affect him, a man's satisfaction and motivation on the job may be reduced. He may even leave the organization if he can. Knowing this, the superiors of those most affected by a decision may tend to defer to their wishes.

The peers of those most affected by a decision (e.g., those in other departments) may also have important reasons for deferring to those most concerned. The man most affected by a decision may react with anger toward a peer who opposes his wishes in this matter. He may also be more inclined to oppose this peer on a later decision which affects the latter most directly. Knowing these things, the peer may feel it wise to defer to the wishes of the man most concerned in this instance.

From such individual motivations of superiors and peers, norms may grow which make it customary to grant strong influence to those most affected by a decision. (This is usually accompanied by a norm

which specifies that strong influence will also be granted to those with formal responsibility for the decision). The advantages of norms, as compared to direct influence attempts, have been discussed by Thibaut and Kelley (1959)).

What is being asserted, then, is that those who are affected by a decision usually have resources (their cooperation at least) which are relevant to the needs of others. Their motivations to use these resources may depend on the nature of the decision. If this interpretation of the present results is tenable, it suggests that an adequate conceptualization of the influence process must take account not only of the influential's control over resources but also of his motivations to use these resources. From this perspective, the characteristics which make certain persons influential include not only those which affect their control over resources but those (like being affected by a decision) that make credible their motivation to use the resources they possess. In parallel fashion, for the target of influence we need to consider not only his needs but also his perception of the likelihood that compliance with the influencer's request will cause the influencer to use his resources in a given way.

This discussion suggests that two columns might be added to make Table 1 more complete--one showing the readiness of the influencer to use the resources he controls in order to influence the target and the other showing the target's perception of the likelihood that compliance will lead the influencer to take certain actions.

These general points concerning the will to use sanctions and the perceived likelihood of their use are not completely new ones. They are

familiar, for example, to those concerned with deterrence in international affairs. But the importance of motivation to use resources has tended to be neglected in discussions of power in interpersonal and intra-organizational relationships.

Other types of Decisions. The findings reported here are based on a very special type of decision (purchasing) in a particular type of organization (business firms). To what extent are these findings, especially those concerning the influence accorded to those with greatest stake, useful in understanding decision-making in other, sometimes more exciting, contexts. We may note, first, some indications that the kinds of decision processes found in these settings are not unique.

In discussing his study of foreign policy decision-making in the American government, Pruitt (1964) states that influence is based in part on the "importance of his position" to each participant. Though Pruitt does not indicate whether there were implicit norms to grant influence to those with most concern and stake, his research is consistent with the present study in showing an association between concern about the decision and influence.

Some observations by Bauer, based in part on research done by him and his associates, are also relevant. He says:

"In any ongoing institution, the ability to get important things done is dependent upon maintaining a reservoir of goodwill. The person who fights every issue as though it were vital exhausts his resources including, most especially, the patience and goodwill of those on whom he has to depend to get things done. Therefore, it should be considered neither surprising nor immoral that, when an issue is of low salience, the sensible individual may use it to build goodwill for the future, or pay off

past obligations, by going along with some individual for whom the issue is of high salience. Bauer, Pool, and Dexter found many men in Congress treating foreign trade legislation in this way. On the other hand, business men for whom this was an issue of low salience were careful not to expend an excessive amount of their finite goodwill on it. (1968:17)

In Congressional decision-making as in business purchasing, then, influence on specific decisions often appears to be determined by informal norms which accord influence to those with greatest stake in, and concern about, the decision. However, it should not be expected that those who have a strong stake in a decision will be influential in all organizational settings. It seems likely that "stake" will be most important as a basis of influence in those situations where the continued co-operation of those with the stake is important for those with greater control over sanctions, and where such continued co-operation is not assured (e.g., subordinates have opportunities to go elsewhere). This is likely to be true in many different types of organizations--e.g., governmental, educational, voluntary. Many such organizations are likely to be concerned about creating a high level of harmony, co-operation and motivation throughout the organization. Thus, as in the case of the business purchase decisions studied here, we would expect to find that those in authority often will be willing to grant strong influence to relatively low-rank persons (e.g., middle-level management) when these low rank persons have a strong stake in the decision in question.

On the other hand, there are some situations where those with greatest authority and greatest control over organization sanctions (e.g., pay, promotion) are not greatly concerned about the continued

cooperation of those persons with a strong stake in a decision. This may be because a high level of motivation is not required for such persons to do their jobs reasonably well (e.g., in routine jobs), because others in the organization are not much dependent on their help (situations of low interdependence), or because their opportunities to go elsewhere are limited. In such kinds of situations one might expect to find influence on decisions less often being enjoyed by those affected by the decision and more often by those in formal positions of authority and/or those able to use or threaten direct use of sanctions.

Table 1. A Framework for Analyzing Social Influence, with some Examples

Person Exerting Influence			Target(s) of Influence			Effect of Influencer on Target
Characteristics	Resources	Decision Role with respect to target	Characteristics	Needs	Decision Role with respect to Influencer	
Expertise: special training special experience, etc.	Knowledge about how to reach certain goals	Investigates, makes tests, gives information to others	Inexpert	Wants to find best ways to reach goals	Reviews information presented by experts	Sees new options; sees new favorable or unfavorable consequences following various actions
Occupies important position in hierarchy	Control over material rewards (money, promotion, etc.)	Makes request, coupled with promised of reward for compliance	Occupies less important position in hierarchy	Wants rewards controlled by influencer	Decides whether to accede to request of others	Compliance seen as means to rewards
Occupies important position in hierarchy	Control over material penalties (fines, demotions, etc.)	Gives order, coupled with threat of punishment for non-compliance	Occupies less important position in hierarchy	Wants to avoid punishment but maintain self-esteem	Decides whether to accede to order	Compliance seen as way of avoiding penalty but may be seen as blow to self-esteem
Strong; successful; has attractive qualities	Approval	States own opinions, preferences	Less strong, less successful	Wishes to be similar to, approved by, influencer	Hears opinions, preferences of influencer	Sees compliance as similar to approved by, influencer

Person Exerting Influence			Target(s) of Influence		Effect of Influencer on Target
Characteristics	Resources	Decision Role with Respect to Target	Characteristics	Needs	
Occupies legitimate position of authority; secured position by legitimate methods	Symbols of legitimacy; label of others' action as right or wrong	announces decision; asks for support	occupies position of subordination; accepts legitimacy of others' position	Wishes to fulfill moral obligations	sees conformity to requested action as morally correct
Is affected by certain decisions (by virtue of work needs, responsibilities, etc.)	Own cooperation; (may also have some resources listed in other rows)	vigorously makes preference known to others	peers' final decision-making; authority	want high level of cooperation from influencer	see acceptance recommendation as leading to future cooperation by influencer

^aThis framework may be expanded to include a) the motivation of the influencer to use his resources in support of his goals and b) the perception by the target that the influencer will use his resources in support of his goals.

Table 2. Reported Ways in Which Differences of Opinion were Resolved

Method of Resolving Differences	Differences about Getting Product of General Type (N=22 cases)		Differences About Specific Product to Get (N=18 cases)		All Differences Total No. of Mentions
	No. of Cases Where Method Mentioned	Total No. of Mentions	No. of cases where Method Mentioned	Total No. of Mentions	
1. Getting more information, or further analyzing information	16	29	11	18	47
2. Finding new solution to problem	7	8	2	2	10
3. Further defining, specifying goals	1	1	2	2	3
4. Discussions or meetings	5	6	10	14	20
5. Persuasion	4	5	3	3	8
6. Vote or survey of opinion taken	0	0	3	3	3
7. Agreement or consensus reached	4	5	2	2	7
8. Decision made by person in position of higher authority	1	2	2	3	5
9. Decision made or most influenced by person not in position of higher authority	3	3	3	3	6
10. By negotiations, bargaining	1	1	0	0	1
11. Reason(s) for decision given without telling how difference resolved	2	2	1	2	4
12. Other answers					
a. relevant to how differences resolved	2	2	1	1	3
b. not relevant to question	4	4	1	1	5
13. Don't Know	2	2	3	3	5

a. More than one method could be mentioned in by any respondent

Table 3

Number of Persons Named as Having Most Influence
in Relation to Number of Respondents^a

A. Decision to Buy Product in General Category

(1)	(2)	(3)	Column (3) Column (2)
N of Decisions	Number of Respondents ^b Per Decision	Average Number of Persons Named Per Decision	
7	2	1.43	.72
4	3	2.50	.83
7	4	2.86	.72
3	5	3.33	.67
4	6	3.00	.58
3	7	3.00	.43
0	8	--	--
2	9	5.50	.61

B. Decision About Specific Product to Buy

(1)	(2)	(3)	Column (3) Column (2)
N of Decisions	Number of Respondents Per Decision	Average Number of Persons Named Per Decision	
5	2	1.80	.90
7	3	2.00	.67
4	4	2.75	.69
8	5	3.75	.75
0	-	--	--
2	7	3.00	.43
1	8	6.00	.75

^a A few respondents named more than one person as most influential; in these cases, the total number of separate persons named was counted. A few respondents named a group or unit as most influential; this was counted as one "person." Names of persons outside the regular organization--e.g., "the customer," the (outside) architect--were counted when mentioned.

^b Cases in which fewer than two persons answered the question about who had most influence are omitted from the table.

Table 4

Reasons Given As To Why Person Named As Influential
Was Able to Exert Influence on Purchase Decisions

Reason Given for Influence	Average Percent of All Responses ^a		
	About Decision to Make Purchase of General Type (N=33 Decisions)	About Decision to Make Specific Purchase (N=32 Decisions)	About Both Decisions Combined (N=33 Decisions)
I. <u>Characteristics of Influential</u>			
A. <u>Expertise</u>			
General knowledge	(7.8)	(10.9)	(9.4)
Information on specific matter	(4.1)	(10.3)	(5.6)
Opinion respected due to expertise	(2.6)	(0.0)	(1.9)
Sub-total expertise	14.5	21.2	16.9
B. <u>Is Affected by Decision</u>			
He (his dept.) uses product	(6.1)	(10.1)	(8.5)
He (his dept.) has need for product	(5.8)	(1.0)	(3.5)
He (his dept.) affected by decision	(2.4)	(2.4)	(2.2)
Responsible for unit where product used	(5.1)	(1.3)	(3.2)
Responsible for performance or output of product	(2.8)	(3.8)	(3.4)
Responsible for something (sales profits etc.) affected by product	(5.1)	(1.4)	(3.5)
Has financial responsibility	(0.0)	(0.4)	(0.2)
Sub-total affected by decision	27.3	20.4	24.5
C. Interest of person or his unit	1.6	1.7	1.9
D. Duties (responsibilities) include making choice of or recommend- ing product	13.2	18.3	15.5
E. Duties include tasks (tests specs etc.) relevant to decision	4.3	5.7	5.7

Table 4 (Continued)

F. Has authority to make decision	7.5	2.0	5.4
G. Responsibility or position: general unspecified	5.7	3.8	4.7
H. Other characteristics (judgement; alertness; in position to get information	0.8	1.0	0.5
II. <u>Activities of Influential</u>			
A. <u>Information-gathering or technical</u> Gathered or reviewed information (2.7)		(4.6)	(3.2)
Did relevant technical work <u>(tests, specifications etc.) (2.5)</u>		(2.6)	(2.3)
Sub-total information-gathering or technical	5.2	7.2	5.5
B. <u>Prodded others to act</u> Brought need to attention of others	(4.8)	(1.6)	(3.1)
Brought product to attention of others	(0.6)	(0.4)	(0.5)
Prodded others; pushed it; commun- icated much	(3.6)	(2.0)	(3.1)
Sub-total prodded others	9.0	4.0	6.7
C. Other actions of influential Made recommendation made decision gave support to action or other miscellaneous actions	3.5	5.1	4.0
Made threat or promise	0.0	0.0	0.0
III. Reasons Influential had for his viewpoint	4.4	1.0	3.2
IV. Answer unclear	0.9	7.3	3.0
V. Other answers	2.4	1.1	1.8
All Answers	100%	100%	100%

^aFor each purchase decision the percentage of answers falling into each response category was tabulated. Then these percentages were averaged for all thirty-three decision cases. Each entry in the table represents the average percentage of answers falling in the particular category. One case, is omitted with respect to reasons for influence about decision to make specific purchase, since no answers to this question are available in this case.

REFERENCES

- Bachman, J., D. Bowers, and P. Marcus
1968 "Bases of Supervisory Power: A Comparative Study in Five Organizational Settings in A. Tannenbaum (Ed.) Control In Organizations, New York: McGraw-Hill.
- Bauer, R.
1968 "The Study of Policy Formation: An Introduction." In R. Bauer and K. Gergen (Eds.). The Study of Policy Formation. New York: Free Press
- Baum, B., P. Sorensen, Jr., and W. Place
1969 "Patterns of Perception of Organizational Control." Sociological Quarterly 10, 3:335-340.
- Bowers, D.
1964 "Organizational Control in an Insurance Company." Sociometry 27:230-244.
- French, J., Jr. and B. Raven
1959 "The Bases of Social Power." In D. Cartwright (Ed.), Studies in Social Power. Ann Arbor: Institute for Social Research
- Gergen, K.
1968 "Assessing the Leverage Points in the Process of Policy Formation." In R. Bauer and K. Gergen (eds.). The Study of Policy Formation. New York: Free Press.
- Hilsman, R.
1959 "The Foreign-Policy Consensus: An Interim Research Report." Journal of Conflict Resolution III, 4:361-382.
- Lawrence, P. and J. Lorsch
1967 "Differentiation and Integration in Complex Organizations" Administrative Science Quarterly, Vol. 12, No. 1, 1967, 1-47.
- Lazarsfeld, P.F. and W. Thielens, Jr.
1958 The Academic Mind. Glencoe, Illinois: Free Press.
- Lindblom, C.
1968 The Policy-Making Process. Englewood Cliffs, New Jersey, Prentice-Hall, 1968.
- March, J. and H. Simon
1958 Organizations. New York: Wiley.
- Patchen, M.
1963 "Alternative Questionnaire Approaches to the Measurement of Influence in Organizations." American Journal of Sociology, 69,1:41-52.
- Patchen, M.
1969 Case Studies of Decision-Making in Organizations: Purchase Decisions in Business Firms. Ann Arbor: Survey Research Center, University of Michigan.

- Pruitt, D.
1964 Problem-Solving in the Department of State. Denver: Department of International Relations, Monograph Series in World Affairs, University of Denver.
- Tannenbaum, A. and R. Kahn.
1957 "Organizational Control Structure: A General Descriptive Technique as Applied to Four Local Unions." Human Relations X, No. 2:127-140
- Tannenbaum, A.
1961 "Control and Effectiveness in a Voluntary Organization." American Journal of Sociology, LXVII, No. 1:33-46.
- Tannenbaum, A. (ed.)
1968 Control in Organizations. New York: McGraw-Hill.
- Thibaut, J. and H. Kelley.
1959 The Social Psychology of Groups. New York: Wiley.
- Thompson, J.D.
1967 Organizations in Action. New York: McGraw-Hill.
- Weber, M.
1947 Theory of Social and Economic Organization. New York
- Williams, L., L. Hoffman, and F. Mann.
1959 "An Investigation of the Control Graph: Influence in a Staff Organization." Social Forces, 37:189-195.

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