The Bases and Use of Power in Organizational Decision Making: The Case of a University

Gerald R. Salancik and Jeffrey Pfeffer

The effects of subunit power on organizational decision making and the bases of subunit power are examined in a large midwestern state university.* It is hypothesized that subunits acquire power to the extent that they provide resources critical to the organization and that power affects resource allocations within organizations in so far as the resource is critical to the subunits and scarce within the organization. Departmental power is found to be most highly correlated with the department’s ability to obtain outside grants and contracts, with national prestige and the relative size of the graduate program following closely in importance. Power is used most in the allocation of graduate university fellowships, the most critical and scarce resource, and is unrelated to the allocation of summer faculty fellowships, the least critical and scarce resource.

Power in social systems may be vertical or horizontal. It may also be interpersonal or involve relations between organizational units. Social science research has been dominated historically with a concern for vertical interpersonal power—the influence of one person over another, usually in a superior-subordinate relationship (Cartwright, 1959; French and Raven, 1968; Leavitt, 1965; Tannenbaum, 1968). Milburn (1972) criticized this emphasis on vertical power in a review of behavioral science contributions to the literature on conflict and power and Perrow (1970) criticized the emphasis on interpersonal power, noting that this preoccupation has created a lack of attention to the important issue of power differences among subunits in organizations.

This article reports a study of the bases and use of power in decisions concerning resource allocations in a large American university. The focus is on subunit horizontal power differences, the factors which lead to those differences, and on the conditions under which power is used to affect the resource allocation process. Horizontal power is the use of influence among coacting peers to obtain benefits for themselves. It is an important mechanism used within and between organizations in allocating resources.

It has been argued that subunit power is an important determinant of budget allocations within organizations (Pfeffer and Salancik, 1974). An examination of the use and determination of organizational power is made here in detail. It is hypothesized that power is used in organizations to influence decisions concerning the allocation of resources which are critical to the subunit using the power and scarce within the organization. Further, it is argued that subunits will acquire power in the organization to the extent they contribute critical resources, including knowledge, to the organization; in return, other participants in the organization will respond to the demands of a subunit as some function of its power. In brief, a subunit instrumental in obtaining critical resources for the organization is in a better position to obtain the critical and scarce resources of the organization.

BACKGROUND

In this examination of power in organizations, the organization is viewed as a coalition, as suggested by Cyert and March (1963; March, 1962). Simon’s (1959) criticism of economic rationality as an explanation of decision making provided the foundation for this conceptualization. Simon, Cyert, and March explicitly rejected the notion that organi-

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zations operate as if they were individuals, resolving conflicts with the use of economic incentives to finally create an ordering of preferences that is shared by all organizational participants. Rather, the coalitional view of organizations emphasizes the differences in objectives and preferences of subunits and participants and seeks to describe the process by which conflicting preferences and beliefs are resolved. Thompson and Tuden (1959) argued that computational, bureaucratic forms of decision making could be employed only when there was agreement both about goals and about the causal connections between actions and the results of those actions. When there are differences and uncertainties about the appropriateness of actions, judgment and compromise become necessary to reach a decision.

The question of whose preferences and whose opinions are to prevail raises the possibility that subunit power may partially determine decisions. When there is disagreement about priorities and disagreement about the consequences of possible actions, decisions cannot be rationalized. Wildavsky speaks to this point in discussing budget decisions.

The crucial aspect of budgeting is whose preferences are to prevail in disputes about which activities are to be carried on and to what degree, in the light of limited resources. The problem is not only "How shall budgetary benefits be maximized?" as if it made no difference who received them, but also "Who shall receive budgetary benefits and how much?" [1961: 184]

Political decision making is not limited to governmental budget disputes. Stagner (1969) reported that business executives said that the decisions of their organizations were frequently determined by considerations of power rather than what action was optimal for the total organization. Baldridge (1971) argued that a coalition model of decision making more accurately described decision making at New York University than either a bureaucratic or collegial model. The coalition model developed by Baldridge emphasizes power and conflict and de-emphasizes maximization and the use of bureaucratic, universal rules and procedures.

Organizations tend to operate as coalitions and subunit power affects decisions not because organizational participants are necessarily intentionally political, prone to conflict, or interested in self-aggrandizement. Rather, nonbureaucratic decision mechanisms are required to resolve differences in preferences and beliefs about what actions will produce what outcomes. Even the most objective indicators are open to different interpretation. When organizational participants derive different meanings from the same set of details, no bureaucratic decision procedures will unambiguously decide the issue. As Wildavsky noted, it is not just whether or not to do more or better, but who shall receive the benefits.

**BASES OF SUBUNIT POWER**

Perrow (1970) suggested that despite protestations to the contrary, not all organizational subunits were equally influential within the organization. The question then arises as to what distinguishes some organizational subunits such that they become more powerful than others. Several answers have been provided in the literature. Crozier (1964), in a study of a French factory, noted that power accrued to the plant’s maintenance engineers because they possessed the knowledge relevant to the repair of the equipment, the breakdown of which was the only remaining area of uncertainty affecting the operations of the plant. From this
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finding, Crozier has argued that uncertainty critical to the organization’s functioning determines the distribution of power across organizational subunits. Thompson (1967) proposed a similar hypothesis by suggesting that power is held by those subunits that can cope with critical organizational contingencies. Perrow (1970), surveying persons in 12 industrial firms about the relative power of departments, argued that “the most critical function tends to have the most power” (1970: 66). He found that the marketing departments were consistently perceived as more powerful and suggested that this was because of the position of marketing in reducing the organization’s most critical area of uncertainty.

Hickson et al. (1971) developed a theory of relative subunit power also based on the idea of coping with critical contingencies. Their model hypothesized that power was a function of (a) the ability to cope with organizational uncertainty, (b) the substitutability of subunits in their capacity to cope with uncertainty; and (c) the centrality of the subunit in the organization’s workflow, a measure of the criticality or importance of the uncertainty to the organization. Hickson and his colleagues (1972) attempted to test their theory in a study of five breweries and one container company in Canada. They found that measures of perceived subunit power were correlated with measures suggested by their theory (Hinings et al., 1974).

Critical organizational contingencies can arise either within the organization (Crozier, 1964) or from its environment. One persistent and critical area of organizational uncertainty for universities, and for other organizations as well, is the provision of resources required for continued operations. Organizations as open social systems depend on a cycle of resource acquisition, throughout, and output for their survival. Resource acquisition is so important and fundamental that Yuchtman and Seashore (1967) have suggested it as a measure of organizational effectiveness.

Organizational subunits may contribute resources to the organization that are of lesser or greater importance and may be more or less successful than other subunits in these pursuits. It was hypothesized in this study that subunits will possess relatively more power to the extent they provide resources for the organization and to the extent that the resources provided are critical, important, or valued by the organization. Ensuring an adequate flow of resources into the organization deals with one kind of uncertainty and, consequently, this hypothesis is a specific example of the general proposition. One advantage of this specific empirical referent is that it is more easily and unambiguously measured than the more generalized concept of uncertainty. By being less inclusive, however, it may account for less of the critical and observed variance in certain instances. If the acquisition of important resources for the organization is a source of subunit power, it is likely to be a more important source of power to the extent that the resource acquisition process itself becomes increasingly uncertain and problematic for the organization.

DATA AND METHODS

The examination of the sources and use of power in organizational decision making uses data from the University of Illinois at Urbana-Champaign. This is a large state university which had 34,000 students in 1972, including 8,000 graduate students. Many of its departments have achieved national
prominence (Roose and Andersen, 1970) and it is a major center for federally funded research projects.

Within the university, 29 departments or subunits were studied. The departments are listed in Table 1. These departments cover several, but not all, of the colleges. Because one department chairman chose not to participate in the study, the number of data points in any given analysis varies from 29 to 28, depending upon whether the analysis involves interview data or not. This slight variation in sample size has virtually no effect on any statistical tests, nor on the substantive conclusions reached.

To test the hypothesis that variations in departmental power are explained by variations in the extent to which departments provide scarce and important resources for the university, data were required on (a) the dependent variable, subunit power, and (b) the independent variable, the extent to which the subunit provides resources to the organization and the importance of the resources provided.

**Measurement of Subunit Power**

Social power is a concept with more intuitive appeal than empirical precision. March (1966), among others, has questioned its usefulness, particularly because of measurement difficulties. For this reason, particular care was taken to develop an adequate measure of subunit power. This involved developing multiple measures of the concept, seeing if the measures correlated as expected with hypothesized outcomes of power, and checking whether the measures correlated with other attributes of the subunits.

The first procedure for measuring subunit power was to interview each of the department heads, or their close assistants, and ask for their rating of the power of each of the subunits, including their own, on a 7-point scale ranging from a great deal to very little power. A column for a don’t know response was also included. Respondents were told that power was the ability of the department to affect decisions so that they conformed more closely to what the department wanted. The departments were listed in random order. This interview-based measure of power corresponds to the measure used by Perrow (1970) in his study of power in industrial firms.

The second measure of subunit power was the subunit’s representation on important university committees. As Cyert and March (1963) have noted, functions are allocated in organizations and this allocation contains information about the relative importance and power of various persons and functions. Because some of the committees had actual impact on resource allocation within the university, membership on the committee would provide the subunit with some power. Thus, committee membership may be both a source of power or an outcropping indicating the relative influence of organizational subunits or some combination thereof. Subunit representation on important university committees during the period 1958–1970 was thus the second indicator of subunit power. The committees employed in the analysis are listed in Table 1.

As reported elsewhere (Pfeffer and Salancik, 1974), these measures of subunit power are valid. The interview-based measure of power with don’t know responses omitted is highly correlated with the interview-based measure of power with don’t know responses coded to indicate very little power ($r = .96, p < .001$). More important, the interview-based measure of power is significantly correlated with total subunit
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Table 1

<table>
<thead>
<tr>
<th>Departments</th>
<th>Committees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics</td>
<td>Nonrecurring Appropriations</td>
</tr>
<tr>
<td>History</td>
<td>Building Program</td>
</tr>
<tr>
<td>Psychology</td>
<td>University Research Board</td>
</tr>
<tr>
<td>Anthropology</td>
<td>Budget</td>
</tr>
<tr>
<td>Political Science</td>
<td>Student Affairs</td>
</tr>
<tr>
<td>Sociology</td>
<td>Senate Coordinating Council</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>Educational Policy</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td></td>
</tr>
<tr>
<td>Physics</td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td>College of Liberal Arts and Sciences</td>
</tr>
<tr>
<td>Mathematics</td>
<td>College of Commerce and Business</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Administration</td>
</tr>
<tr>
<td>Aeronautical and Astronautical</td>
<td>College of Engineering</td>
</tr>
<tr>
<td>Engineering</td>
<td>College of Agriculture</td>
</tr>
<tr>
<td>Geology</td>
<td>College of Physical Education</td>
</tr>
<tr>
<td>Computer Science</td>
<td>College of Fine and Applied Arts</td>
</tr>
<tr>
<td>Classics</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td></td>
</tr>
<tr>
<td>Spanish and Italian</td>
<td></td>
</tr>
<tr>
<td>French</td>
<td></td>
</tr>
<tr>
<td>Germanic</td>
<td></td>
</tr>
<tr>
<td>Dairy Science</td>
<td></td>
</tr>
<tr>
<td>Home Economics</td>
<td></td>
</tr>
<tr>
<td>Accounting</td>
<td></td>
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<tr>
<td>Finance</td>
<td></td>
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<tr>
<td>Architecture and Fine Arts</td>
<td></td>
</tr>
<tr>
<td>Health Education</td>
<td></td>
</tr>
<tr>
<td>Business Administration</td>
<td></td>
</tr>
<tr>
<td>Animal Science</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td></td>
</tr>
<tr>
<td>Geography</td>
<td></td>
</tr>
</tbody>
</table>

Membership on all committees \(r=.61, p<.001\), with membership on the University Research Board, probably the most influential committee \(r=.62, p<.001\), with membership on the respective college executive committees \(r=.60, p<.001\), and with membership on the budget committee \(r=.46, p<.01\). Thus, the interview-based measure of power and the committee-representation measures are correlated, indicating some convergent validity.

One possibility is that all the measures of subunit power are spuriously correlated with each other because they are all indicators of subunit size. This does not appear to be the case, however. Two measures of subunit size can be considered: the number of student-hours—instructional units—taught and the number of full-time equivalent teaching faculty. The proportion of total instructional units taught by the department is correlated \(r=.46 (p<.01)\) with proportional membership on the Research Board, \(r=.30 (p<.10)\) with the interview-based measure of power, and \(r=.16 (\text{not significant})\) with the proportional membership on all committees. The correlations of the proportion of full-time equivalent teaching faculty are \(.56 (p<.001)\) with membership on the Research Board, \(.31 (p<.10)\) with membership on all committees, and \(.32 (p<.10)\) with the interview-based measure of power. While there are significant correlations with some measures of subunit size, it is also the case that the correlations are generally smaller than the intercorrelations among the power measures themselves, providing some evidence for the discriminant validity of the measures.

Finally, both measures of subunit power are significantly correlated with the budget allocations received by subunits,
even when indicators of subunit size are statistically controlled (Pfeffer and Salancik, 1974). Since power should affect resource allocation and the measures of power do indicate this effect, even when competing explanations for allocations are statistically controlled, it can be said that the measures achieve a reasonable degree of construct validity as well.

Measurement of Resource Importance

Two ways of assessing the importance of resources to the total organization were employed. First, the department heads were asked to rank six dimensions in order of importance in terms of the effect each should have in allocating budgets to departments. The six bases for allocating the budget, ranked from 1 for the most important to 6 for the least important, were (1) the number of graduate students, (2) the number of undergraduate students, (3) national rank or prestige of the department, as assessed, for example, by the American Council on Education, (4) administrative and service contributions to the university, (5) amount of outside grants and contracts, and (6) public visibility of the department. The average ranking of each dimension was taken to be the consensual opinion concerning the importance of that dimension as a preferred basis of resource allocation within the university.

The respondents were also asked directly to assess the importance of resources departments provided to the total university. The following question was asked:

Departments do not just get resources from the university, they also provide resources for the university. Below we list 7 resources which departments bring into the university in 1 way or another. We would like to get an idea as to how important these resources are to the university as a whole. Please rank from 1 (most important) to 7 (least important) the following for their importance to the overall operation of the university.

The resources, ranked in order of importance as assessed by this question, were (1) number of graduate students, (2) national rank or prestige of the department, (3) number of undergraduate students, (4) amount of outside grants or contracts, (5) public visibility of the department, (6) administrative and service contributions to the university, and (7) business and professional contacts.

Measurement of Subunit’s Contribution

Two methods were used to assess the extent to which the subunit actually contributed a particular resource to the organization. First, for some resources, historical measures were available. From archival records, the proportion of total grants and contracts a particular department received—restricted funds in the budget categories—and the proportion of undergraduate and graduate students taught were obtained for the 13-year period, 1958–1970. For the 17 departments in which rankings were available, data on national prestige were obtained from the studies conducted by the American Council on Education (Cartter, 1966; Roose and Andersen, 1970)?

Second, each department head interviewed was asked to assess the extent to which his department contributed each of the seven resources compared to other departments in the university. The scale used for this question was a 5-point rating scale, ranging from 1 for much more than average to 5 for much less than average.

For those four resources which are measured both from the interviews and from archival data, the extent to which the
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department heads accurately perceived their relative standing in terms of their provision of each resource can be assessed. The correlations between the proportion of each resource accounted for by a given department and the department heads' ratings of their relative position for that resource were .66 (p < .001) for the graduate instructional units taught, .70 (p < .001) for outside grants and contracts, .67 (p < .001) for national prestige, and .24 (p < .15) for the proportion of undergraduate instructional units taught. The department heads knew their relative position compared to other departments least accurately for undergraduate teaching, which they had rated as the second most important basis for allocating the budget.

RESULTS

Table 2 presents the average responses to the question asking how the budget should be allocated and the responses to the question asking the importance of various resources the departments bring into the organization. The department heads' most preferred basis of budget allocation was the

Table 2

<table>
<thead>
<tr>
<th>Criteria and resources</th>
<th>Average preference rank</th>
<th>Average importance rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of graduate students</td>
<td>2.12</td>
<td>2.22</td>
</tr>
<tr>
<td>Number of undergraduate students</td>
<td>2.44</td>
<td>2.94</td>
</tr>
<tr>
<td>National rank or prestige of the department</td>
<td>2.97</td>
<td>2.85</td>
</tr>
<tr>
<td>Amount of outside grants and contracts</td>
<td>4.33</td>
<td>3.88</td>
</tr>
<tr>
<td>Public visibility of departments</td>
<td>4.92</td>
<td>4.42</td>
</tr>
<tr>
<td>Administrative and service contributions to the university</td>
<td>4.18</td>
<td>5.68</td>
</tr>
<tr>
<td>Business and professional contacts</td>
<td>*</td>
<td>5.95</td>
</tr>
</tbody>
</table>

* This criteria or resource was not included in the preference measure.

number of graduate students, with the number of undergraduate students being second, and the department's national reputation third. Considering the rankings of the importance of resources provided to the university, graduate students were the most important, with national prestige second, and undergraduate students third. The department's acquisition of outside grants and contracts ranked fifth as a desired determinant of budget allocation and fourth in terms of the importance of the resource to the university.

These rankings place surprisingly low emphasis on the importance of obtaining outside funds. While graduate students are important in a graduate-oriented university such as Illinois, much of the support for training graduate students is obtained from outside research grants. Indeed, 40 percent of the university's budget was in the form of grants and contracts for research. These funds, through the provision of overhead dollars, are a major source of discretionary resources providing organizational slack for the university. This would suggest that outside funding should be the most important resource which departments provide and should be highly related to subunit power within the organization.
Determinants of Subunit Power

The three measures of subunit power, the interview-based measure, the membership on the University Research Board, and representation on all the committees considered were used as dependent variables to measure power.

In Table 3 correlations between the three indicators of subunit power and objective measures assessing possible bases for this power are displayed. Except for the national rank of the department, the number of observations is 28. For national rank, only the 17 departments covered by the American Council on Education were used. For all three indicators of subunit power, the best predictor was the proportion of faculty supported by restricted funds. Contrary to the results obtained from the interviews, the most important determinant of subunit power was the subunit’s provision of outside funds to the organization. Closely following outside funds as a predictor of subunit power was the relative proportion of graduate students, with that followed closely by the department’s national rank. Less important as a determinant of subunit power was the relative proportion of undergraduates taught by the department.

Much as the common folklore has it, graduate education and research were empirically found to be the best predictors of subunit power within the organization. Undergraduate instruction holds a distinctly secondary position.

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The various measures of graduate education, national rank, and amount of outside funding are themselves intercorrelated. Two sets of multiple regressions were therefore obtained, one for the set of 28 departments and the other for the set of 17 ranked departments, to assess more precisely the relative contribution of each variable to predicting subunit power. These results are displayed in Table 4. The coefficients are the standardized regression coefficients (beta) and the numbers in parentheses are the t-values of the respective regression coefficients.

Table 4

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Constant</th>
<th>Proportion of graduate instructional units taught</th>
<th>Proportion of total FTE faculty supported by restricted funds</th>
<th>National rank</th>
<th>r²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview measure of power</td>
<td>4.34</td>
<td>.222</td>
<td>.641</td>
<td>.61</td>
<td></td>
</tr>
<tr>
<td>Membership on University Research Board</td>
<td>(-.008)</td>
<td>.348</td>
<td>.594</td>
<td>.70</td>
<td></td>
</tr>
<tr>
<td>Representation on all committees</td>
<td>.027</td>
<td>.048</td>
<td>.416</td>
<td>.19</td>
<td></td>
</tr>
</tbody>
</table>

\(N=29\)

| Membership on University Research Board | \(-.042\) | .247 | .867 | .234 |
| Interview measure of power | 3.94 | .203 | .562 | \(-.179\) |
| Representation on all committees | .022 | \(-.069\) | .706 | \(-.006\) |

\(N=17\)

The results for the three measures of power, with national rank included or excluded from the equation, all indicate that outside funding was the best predictor of subunit power. In all the regressions, faculty funded by restricted funds—grants and contracts—is statistically significant and, in all equations, the beta weight for this variable is larger than for the other explanatory factors.

In addition to relating the measures of subunit power to the objective measures of the subunit’s provision of resources, the measures of power can also be related to the subunit’s own assessment of its relative standing in the university with respect to seven resources. Department heads were asked to assess how much of a given resource his department contributed compared with other departments within the university. Table 5 presents the correlations between the measures of subunit power and the extent to which the heads estimated their departments provided each of the seven resources.

As with the preceding analyses, the most highly correlated resource for all three measures of subunit power was the department’s relative standing in the university in terms of its bringing in grants and contracts. This tended to be closely followed by the number of graduate students and the department’s national prestige. Because of the consistency in the results over the two types of analysis, the acquisition of outside funds can more confidently be attributed as the major source of subunit power.

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Table 5

Correlations between Measures of Subunit Power and Department Head’s Assessment of Subunit’s Relative Contribution of Resources

<table>
<thead>
<tr>
<th>Variables</th>
<th>Representation on the University Research Board</th>
<th>Interview-based measure of power</th>
<th>Representation on all committees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of graduate students</td>
<td>.37***</td>
<td>.48**</td>
<td>.07</td>
</tr>
<tr>
<td>Outside grants and contracts</td>
<td>.44**</td>
<td>.80*</td>
<td>.39***</td>
</tr>
<tr>
<td>Undergraduate students</td>
<td>.26****</td>
<td>.31***</td>
<td>.01</td>
</tr>
<tr>
<td>National prestige</td>
<td>.38***</td>
<td>.33***</td>
<td>.15</td>
</tr>
<tr>
<td>Public image and visibility</td>
<td>.14</td>
<td>.19</td>
<td>.38***</td>
</tr>
<tr>
<td>Administrative expertise</td>
<td>.24</td>
<td>.37***</td>
<td>.08</td>
</tr>
<tr>
<td>Business and professional contacts</td>
<td>.24</td>
<td>.36***</td>
<td>.29****</td>
</tr>
</tbody>
</table>

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Analysis of Favored Bases of Budget Allocation

Department heads, on the average, judged graduate students and national prestige to be more important resources than outside grants and contracts. Empirical analysis indicated, however, that outside research funds were the best predictor of subunit power. This discrepancy in the findings suggests that either (1) the hypothesis is incorrect and subunit power is not related to the subunit’s relative contribution of important resources or (2) the averaged assessments of the department heads provided biased or incorrect information concerning the relative importance of various resources to the total organization.

It is possible that the department head’s judgments concerning the preferred bases of budget allocation and the importance of various resources provided to the total organization reflect their desire to use criteria which favor their own departments. One use of organizational power may be to influence the criteria used in organizational decision making. If this is the case, the procedure employed of averaging all department heads would overemphasize factors favored by subunits with lower power in the organization.

There is support in the data for the idea that when asked what the criteria for budget allocations should be respondents replied with criteria that tended to favor the relative position of their own organizational subunit. The correlation between the proportion of restricted funds obtained and the ranking of grants and contracts as a preferred basis for budget allocation was .27 (p < .10), while the correlation with the department head’s assessment of his department’s obtaining grants and contracts was .52 (p < .005). To the extent the department head perceived a comparative advantage in terms...
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of his department’s obtaining grants and contracts and to the extent his department actually did receive more restricted funds, the department head tended to favor grants and contracts as a basis of budget allocation.

Preferences for basing budget allocation on the number of undergraduate students was correlated .34 \( (p < .05) \) with the proportion of total undergraduate instructional units taught by the department and was correlated .24 \( (p < .15) \) with the department head’s assessment of his department’s position in terms of the relative number of students taught. Preferences for basing budget allocations on the national rank of the department were correlated .43 \( (p < .05) \) with the national rank of the department in 1969, but were correlated only .13 with the department head’s assessment of his department’s standing in the university in terms of national prestige. Preferences for basing budget allocations on graduate students were unrelated to the department’s relative position in this respect. This result may have occurred because the graduate emphasis in the university is so pervasive and generally accepted that it is favored by persons regardless of how well their department ranks on this particular criterion.

The data indicate that departments with a comparative advantage in a particular area favored basing budget allocations more on this criterion. Given the bias to overvalue those resources which your department possesses and the fact that the ability to support graduate students is, in part, affected by the ability to obtain outside research support, it is not as surprising that the department’s provision of outside funds has become an important predictor of subunit power within the university.

THE USE OF POWER IN ORGANIZATIONS

In considering the conditions under which power will be used in the allocation of resources within organizations, it is assumed that organizational subunits on the same horizontal level in the organizational hierarchy possess differential power within the organization. Defining power as potential influence (Lewin, 1951), the study focuses on the allocation of resources within the organization and addresses the issue of under what circumstances subunits will attempt to influence the allocation of these resources for their benefit.

It is hypothesized that power is used in the allocation of an organizational resource to the extent that the resource is scarce within the organization.

Hypothesis 1. The scarcer the resource, the more power is used to allocate it among subunits.

In the limiting case of no scarcity, every subunit can obtain all of the resource it desires, which presumably would be based on perceptions of its needs, as evidenced by objectively based criteria. As long as there is no scarcity, there is no problem of resource allocation and no reason for subunits to use their differential influence within the organization. With increasing scarcity, resource allocation becomes problematic; every subunit will vie for resources according to its needs and demands, but not all will be able to completely satisfy their demands. If a subunit is to obtain resources, it must overcome the pressures of other subunits for the same contested resource. In short, the subunit must have power to affect the outcome greater than the power of other subunits. A testable implication of the first hypothesis appears in the following revised version:

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Hypothesis 1a. The more scarce an organizational resource becomes, the less objective criteria will be used in its allocation and the more power will be used. The amount of variance explained by objective criteria in resource allocation will be an inverse function of the scarcity of the resource.

While resource allocation becomes problematic only when resources are scarce, resource allocation is a problem only when the subunit wants the resource. It is therefore argued that

Hypothesis 2. The more critical the resource for the survival or effective operation of an organizational subunit, the more the subunit will make attempts to acquire it.

A corollary of this hypothesis is that the more critical a resource becomes to the effective operation of an organizational subunit, the more the subunit will use its power to acquire it; the less critical, the less power will be used in allocating the resource.

The use of power has costs; it requires resources to attempt to influence organizational decisions. Decisions to use power should depend, therefore, on the criticality of the resource to the subunit. It is unlikely that a subunit will attempt to use its power to acquire an unimportant, or less critical, resource. From the preceding arguments, two additional hypotheses can be derived.

Hypothesis 3. For a resource critical to most subunits, the scarcer it becomes, the more power will be used as the basis of its allocation in the organization.

Since the resource is critical or important, subunits will desire to acquire it. As this critical resource becomes more and more scarce, the total requirements of all subunits will be less satisfied and subunits will have to contend with each other to a greater degree for the resource. It is under these conditions that power is more likely to become used as the organization’s basis for resource allocation.

On the other hand, given that the use of influence has its costs and that those costs increase with scarcity, subunits would be less likely to use power to acquire scarce, non-critical resources. Therefore,

Hypothesis 4. For a noncritical resource, the scarcer it becomes, the less power will be used for its allocation.

Implicit in the description of the use of power by organizational subunits is the notion that resource allocations decisions within organizations are not constrained by either organizational or extraorganizational sanctions against the use of power. In fact, power is exercised only when there is discretion in the allocation of resources. The greater the external constraint on the decision, the less power will be used in the allocation decisions. With scarcity, the use of power becomes necessary and with criticality, it becomes desirable. Without discretion, however, there is no opportunity to use subunit power. Discretion is missing when (a) there is no resource to allocate at all and (b) when the allocation process is determined by law, strongly held norms, or by some external agency affecting the organization. If, for instance, the state legislature were to pass a law that a university’s department budget must be some multiplier of its instructional units taught, there will be no opportunity to use power in the allocation of the budget. It is likely, however, that such a law would have the effect of shifting the focus of power to the acquisition of students so that budget could be acquired.

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DATA AND METHODS

Data on the allocation of graduate university fellowships, summer faculty fellowships, University Research Board grants for faculty research, and appointments to the Center for Advanced Study were obtained from archival records for the 29 departments listed in Table 1 for the period 1958–1970, except for the Center for Advanced Study which did not start its fellows program until 1962. To control for inflation and growth, allocated resources were defined proportionally. Thus, in the analyses of graduate fellowships, the departmental allocations are represented as proportions allocated to each of the 29 departments in a given year.

Graduate university fellowships are fellowships allocated to the departments by the Graduate College and are provided by the general resources of the university. Fellowship support derived from outside grants, contracts, or direct contributions to the department are not subject to university discretionary allocation and are therefore not included. The summer faculty fellowship program is one in which primarily junior faculty submit brief proposals for a study to be conducted during the summer. The university provides $900 in tax-free support. The program provides some support for research activities for faculty without outside funding during the summer and also provides summer money for faculty who either do not want or do not have the opportunity to teach in the summer session. The Center for Advanced Study is an organizational subunit that administers programs to recognize outstanding junior and senior faculty, both at the University of Illinois and at other universities. Persons may be brought in to spend their sabbatical at the Center or, most frequently, if on the campus, may be appointed to the Center for either a semester or a full year. The Center reimburses the faculty member’s department for the loss of his services. Appointment to the Center is considered an honor and provides the faculty member with time to study and to do research. The University Research Board provides small internally-funded research grants to faculty on the basis of proposals received. Support is typically in the form of research assistants or computer money.

Measurement of Resource Scarcity

As part of the interviews, department heads were asked to rank seven resources in terms of how scarce they were. They were told that scarcity implies that there is not enough of the resource for every department to get all it would like and is defined by the amount of the resource available divided by the amount requested. The rankings proceed from 1 for the most scarce to 7 for the least scarce. Included in the list of seven were the four resources examined in this study and, in addition, computer money for faculty research, computer money for instructional use, and new courses.

The best measure of resource scarcity would be to have an exact measure of the amount of the resource requested and the amount available and divide the amount requested by the amount available. Unfortunately, data on requests for the resources were not available. Even if it were, it is not clear that requests that are actually made are good estimates of anything except availability. Department heads may adjust their requests according to what they expect to receive or to what they have received in the past. Davis, Dempster, and Wildavsky (1966) illustrate this with respect to the budget requests of federal agencies. If requests are determined by the expected outcome of the request, requests compared to
availability is not an ideal measure of resource scarcity. The department head’s judgments were used as estimates of the scarcity of the resources and it is assumed that in averaging the individual responses, an accurate ranking of relative scarcity will be obtained.

Measurement of Criticality and Subunit Power

In the same interview, the department heads were asked to rank the same seven resources in terms of their criticality, from 1 for the most critical resource to 7 for the least critical. Criticality was defined as the extent to which the resource is absolutely necessary for the effective operation of the department.

The measures of subunit power were the same as were explained above in the analysis of the determinants of subunit power and as presented in a study of budget allocations (Pfeffer and Salancik, 1974).

Objective Criteria

It has been argued that resources can be allocated based on subunit power or on more universalistic bureaucratic criteria. One possible use of power is to ensure that criteria favoring the powerful departments are employed. For this analysis of the use of power, it is necessary to also obtain indicators of objective criteria for allocating the four resources. These criteria were obtained from discussions with persons involved in the allocation decisions and represent the ones they articulated as being reasonable bases for allocation. These criteria represent quantity indicators of a department’s need for a resource independent of its assessment of the criticality of the resource.

Allocations of summer faculty fellowships and appointments to the Center for Advanced Study are made to faculty members. The principal criterion listed for eligibility is that a person be a member of the faculty. Thus, an objective indicator of a department’s allocation of the resource would be the number of full-time equivalent faculty in the department. If strict proportionality were used in the decision making, the proportion of fellowships and appointments would be equivalent to the proportion of the faculty. Quality, of course, is also taken into account. It is difficult to compare individuals or departments in different fields. While no perfect solution is available, the quality of the department as assessed through its ratings by the American Council on Education was employed as the indicator of quality.

Allocations of university fellowships to graduate students should be based on (a) the number of graduate students and (b) the relative quality of those students. Since there were no tests or measures available that could compare graduate students across the departments studied, the department’s national ranking was used. The assumption was that more highly rated departments would attract better graduate students. In place of the actual number of graduate students, the proportion of advanced graduate instructional units taught was used. This variable, highly correlated with the number of graduate students, is slightly more highly correlated with graduate fellowship allocations. It therefore is a slightly more powerful controlling variable.

Research Board allocations for faculty research should be based on the number of persons needing such funds and their relative abilities. The departmental need for research money was represented by the proportion of total graduate
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units taught by the department, since need for research funds and research activity were assumed to be related to graduate education. Again, the indicator of quality is the departments' national rank in 1969 (Roose and Andersen, 1970).

RESULTS

The average assessment of the criticality and scarcity of the four resources being examined is displayed in Table 6. The Table 6

Average Rankings of Criticality and Scarcity of 4 Resources

<table>
<thead>
<tr>
<th>Resource</th>
<th>Average criticality</th>
<th>Average scarcity</th>
</tr>
</thead>
<tbody>
<tr>
<td>University graduate fellowships</td>
<td>2.46</td>
<td>2.45</td>
</tr>
<tr>
<td>Research Board grants for faculty research</td>
<td>3.00</td>
<td>3.20</td>
</tr>
<tr>
<td>Summer faculty fellowships</td>
<td>5.36</td>
<td>4.37</td>
</tr>
<tr>
<td>Appointments to the Center for Advanced Study</td>
<td>5.75</td>
<td>3.89</td>
</tr>
</tbody>
</table>

lower the number, the more critical or the more scarce the resource was thought to be. Department heads showed significant agreement about the rankings. Kendall’s coefficient of concordance (Siegel, 1956) was .33 (p < .001) for criticality rankings and .22 (p < .001) for scarcity.

Table 6 suggests that the four resources perceived as most scarce on the average were also perceived as most critical. The similarity in the overall rankings, however, is not due to a confounding of the separate concepts themselves by the respondents. The correlations between the criticality and scarcity rankings based on the department head’s responses were .26 (p < .10) for appointments to the Center for Advanced Study, .20 (n.s.) for Research Board grants for faculty research, .20 (n.s.) for university graduate fellowships, and -.07 (n.s.) for summer faculty fellowships.

One phenomenon discovered during the interviewing was that persons tended to adjust to the realities of their situation. Thus, if a department found it difficult to obtain a resource, the department head was likely to say that the resource was not critical. The point is that organizations and organizational subunits adapt to the constraints of their situations. If the subunit cannot obtain an important resource, the subunit is likely to redefine its activity, find substitutes for the resource in question, or in some other way cope with the situation it confronts. The situation of a resource being both important and difficult to obtain is not likely to be stable. Either the subunit will ensure adequate provision of the critical resource or else the subunit will alter its preferences and beliefs about resource criticality.

Use of Power in Resource Allocation

It has been hypothesized that the use of power in resource allocation will become more prominent the more scarce the resource (Hypothesis 1) and the more critical the resource (Hypothesis 2). Thus, power would be expected to be most used in the allocation of graduate fellowships, since this is the most scarce and most critical resource, and would be used least in the allocation of summer faculty fellowships. Simple correlations between the three measures of power and the proportional allocations of the four resources are presented in Table 7. All three measures of power yield the same result: power is most highly correlated with the alloca-

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### Table 7

<table>
<thead>
<tr>
<th>Resource</th>
<th>Measures of Power</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Membership on Research Board</td>
</tr>
<tr>
<td>Simple correlations</td>
<td></td>
</tr>
<tr>
<td>Graduate fellowships</td>
<td>.90*</td>
</tr>
<tr>
<td>Research Board grants</td>
<td>.85*</td>
</tr>
<tr>
<td>Appointments to the Center for Advanced Study</td>
<td>.74*</td>
</tr>
<tr>
<td>Summer faculty fellowships</td>
<td>.31***</td>
</tr>
<tr>
<td>Partial correlations, controlling for objective criteria</td>
<td></td>
</tr>
<tr>
<td>Graduate fellowships</td>
<td>.83*</td>
</tr>
<tr>
<td>Research Board grants</td>
<td>.72*</td>
</tr>
<tr>
<td>Appointments to the Center for Advanced Study</td>
<td>.57*</td>
</tr>
<tr>
<td>Summer faculty fellowships</td>
<td>-.21</td>
</tr>
<tr>
<td>Partial correlations, controlling for objective criteria and national ranking</td>
<td></td>
</tr>
<tr>
<td>Graduate fellowships</td>
<td>.90*</td>
</tr>
<tr>
<td>Research Board grants</td>
<td>.86*</td>
</tr>
<tr>
<td>Appointments to the Center for Advanced Study</td>
<td>.65**</td>
</tr>
<tr>
<td>Summer faculty fellowships</td>
<td>.04</td>
</tr>
</tbody>
</table>

* $p < .001.$  
** $p < .01.$  
*** $p < .05.$  
**** $p < .10.$

The allocation of university graduate fellowships, is next most highly correlated with the allocation of grants for faculty research, and is least highly correlated with the allocations of summer faculty fellowships. The rank ordering of the relative use of power follows perfectly the rank ordering of the relative scarcity of the resources and follows almost perfectly the rank ordering of the criticality of the resources also.

Given that resource allocations may be based on both subunit power and objective factors, a more refined analysis requires computing partial correlations between power and allocations, controlling for the objective bases of resource allocation. The criterion used in the case of appointments to the Center for Advanced Study and summer faculty fellowships is the proportion of full-time equivalent instructional faculty, while in the case of graduate fellowships and grants for faculty research, it is the proportion of advanced graduate instructional units taught by the department. These results are displayed in Table 7. The pattern of results is again generally consistent with the argument.

Finally, partial correlations can be computed controlling for both the basic factors introduced in Table 7 and for the national ranking of the department, a rough indicator of quality. These partial correlations are also displayed in Table 7. As only 17 departments in the sample represent disciplines rated by the American Council on Education, this analysis
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includes only these 17. Once again, it appears that power is
used most to allocate graduate university fellowships and is
used least to allocate summer faculty fellowships. Research
Board grants for faculty research are second in terms of being
allocated by power, while appointments to the Center for
Advanced Study are third. Looking at either the simple
correlations or either set of partial correlations, the results
are the same: power is more highly correlated with the
allocation of resources which are more critical and more
scarce.

It has been argued that a subunit within an organization will
vie for a resource to the extent that resource is critical and
the subunit’s probability of obtaining the resource will depend
upon its power relative to other subunits also contending for
the resource. This suggests a hypothesis concerning the
allocation of a resource which is differentially viewed as
critical by different subunits. If a given resource is viewed as
critical by low-power subunits and simultaneously viewed as
noncritical by high-power departments, the resource alloca-
tions should be negatively related to power. This is the case
in the allocation of summer faculty fellowships. Across all
departments, there was a negative correlation between power
and the ranking of the criticality of the resource, with a
correlation of .33 (p<.05) between Research Board member-
ship and ranking of criticality for the summer faculty fellow-
ships. Because of this, power itself is negatively correlated
with the allocation of this resource when objective bases of
allocation are controlled. Since power has been seen to be
related to the obtaining of outside funds, it is likely that
faculty in high-power departments find sources of other
support and have less need for these university faculty
fellowships.

Another way to indicate the relative effects of the objective
criteria and subunit power on allocations is to present the
multiple regressions accounting for the variation in the
average proportional allocation of the four resources over the
13-year period. These results, presented in Table 8, are
consistent with the previously presented analyses, and indicate
that the formulation is able to explain a substantial portion of

Table 8

Regression Equations Explaining Variations in Allocation of
Resources to Departments

<table>
<thead>
<tr>
<th>Equation</th>
<th>Beta</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRADFEL =.006 + .624 RESBD + .413 GRADVU</td>
<td>(.760)</td>
<td>.90</td>
</tr>
<tr>
<td>RESEARCH* =.01 + .717 RESBD + .198 GRADVU</td>
<td>(.536)</td>
<td>.74</td>
</tr>
<tr>
<td>CAS =.003 + .427 RESBD + .529 FTETEACH</td>
<td>(3.52)</td>
<td>.73</td>
</tr>
<tr>
<td>SUMMERFAC = -.006 + .168 RESBD + .839 FTETEACH</td>
<td>(1.08)</td>
<td>.57</td>
</tr>
</tbody>
</table>

GRADFEL is the proportion of graduate university fellowships.
RESEARCH* is the proportion of university-funded research dollars.
CAS is the proportion of appointments to the Center for Advanced Study.
SUMMERFAC is the proportion of summer faculty fellowships.
RESBD is the proportional membership on the University Research Board.
GRADVU is the proportion of graduate instructional units taught.
FTETEACH is the proportion of full-time equivalent teaching faculty.

Numbers in parentheses are the standard errors of the regression
coefficients.

Coefficients displayed are the standardized regression coefficients.
the variance, particularly in the case of the more critical and more scarce resources.

DISCUSSION

Subunit power accrues to those departments that are most instrumental in bringing in or providing resources which are highly valued by the total organization. In turn, this power enables these subunits to obtain more of those scarce and critical resources allocated within the organization. Stated succinctly, power derived from acquiring resources is used to obtain more resources, which in turn can be employed to produce more power—the rich get richer. In the specific instance examined, this leads to some strange results. For example, power is most highly correlated with the allocation of graduate research fellowships, accounting for approximately 80 percent of the variance. Yet power is predicted by the acquisition of outside grants, which are often used to provide graduate support. So, those subunits with the most outside support also tend to obtain the most internal support. Instead of compensating for the differential access to outside resources, the internal resource allocation system actually exacerbates resource inequalities. This same effect holds for the Research Board’s allocations of grants for faculty research. These results have a logical foundation. It might be argued that since outside grants and contracts, with their associated overhead funds, provide discretionary resources for the organization, in order to encourage departments to obtain these outside funds, and perhaps for fairness, those subunits most responsible for acquiring these discretionary resources should receive the largest portion of them.

These results on funding are consistent in some respects with Lodahl and Gordon’s (1973) findings concerning differences between physical and social sciences. These authors reported that internal allocations tended to reinforce the disparities in funding created by the differential availability of outside money. This result obtains because acquisition of outside resources tends to provide power within the organization and this power can then be used to favorably influence allocations of internal resources. Most important, however, this result suggests how external organizational factors may affect internal organizational decisions.

An intriguing empirical question is the extent to which subunit power is based on dimensions that are important to groups or organizations outside of the organization as well, such as legislators or alumni, or other organizations or groups in the organization-set (Evan, 1966). It is quite possible that in some universities, and in general in other types of organizations that may have been buffered or isolated from the environment, those contingencies or resources that come to be defined within the organization as strategic or important may not be so perceived outside of the organization. Indeed, one might hypothesize that organizations will be successful only to the extent that the bases for subunit power within the organization are functional from the point of view of the organization’s dealings with its environment. By functional we mean that the important resources or contingencies as defined by the social reality within the organization are indeed those resources or contingencies which are most critical to the organization’s ability to obtain resources and transact with its environment. Since organizational decisions are partially based on subunit power, then to the extent power is based on contingencies or resources that are actually not as critical, the organization is likely to make maladaptive or
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incorrect decisions. This is particularly true since subunits once in power are likely to take actions to maintain that power.

If the preceding reasoning is essentially correct, then explaining and analyzing organizational power systems has implications for understanding the organization’s ability to respond and cope with changing environments. It is likely that organizations that are relatively more insulated, due to their source of funding or due to their monopoly position, are more likely to be social units in which subunit power is based on less important, or less externally-based criteria. One effect of the environment is in constraining and providing feedback on organizational decisions (Thompson and McEwen, 1958). Subunit power will be based on environmental contingencies or important resources only to the extent that such feedback and constraint are perceived and recognized.

These arguments can be illustrated in a hypothesis specific to universities. Universities will fare relatively better at the hands of their state legislatures of alumni to the extent that the bases for subunit power within the organization more closely correspond to the relative importance of the criteria as held by the external organizations. It is possible, in other words, that through the influence of discretionary resources, organizations can come to jeopardize other significant portions of their input.

While the empirical results presented in this article are strong, there is the question of the extent to which they are generalizable. While Illinois is probably typical of large prestigious state universities, the results would not necessarily hold for universities with less of a research orientation or perhaps for private universities. In universities without extensive research or graduate programs, it is obvious that obtaining research funds and having a large, prestigious graduate program cannot be a predictor of subunit power. Similarly, organizations may vary in the extent to which internal resource allocations are mandated by external organizations. Yet, while the specific measures might change, the importance of providing resources to the organization as a source of power is likely to be generalizable, since it is derived from the more general concept of coping with critical organizational contingencies (Thompson, 1967; Crozier, 1964; Hickson et al., 1971).

An even more basic question is the extent to which these analyses of subunit power are generalizable to other types of organizations. Universities are unique in that they exhibit primarily pooled interdependence (Thompson, 1967: 54). The interdependence between what happens in the History Department and what happens in the French Department is probably minimal compared to the interdependence between marketing and production in an industrial firm. Second, it may be maintained that university organizations are more collegial and less bureaucratic than other forms and particularly differ in the extent to which authority is wielded through collegial committees rather than through a hierarchy of authority. However, Perrow (1972: 32–35) has argued that universities are more hierarchical and less collegial than is often admitted. He maintained that “any group with a division of labor, professional or not, will be hierarchically structured” (Perrow, 1972: 35).

The form of interdependence found in the organization probably affects the extent to which subunits will go in their contest for resources, but not the basic propositions con-
cerning the conditions that may create power or cause it to be used. Even in the university, as loosely coupled as it is, most departments stop before the point at which they advocate taking all of everyone else’s resources and becoming a one subunit organization. To the extent that their activities were more interdependent, they would face additional internal constraints in terms of their contest for power and resources. While universities may be somewhat different from organizational forms, this is a difference in degree, rather than of form, and thus the basic arguments would still hold.

At the same time, however, too much cannot be claimed for this single study of a single institution. It is clear that the propositions presented were not disconfirmed when confronted with the data and some competing explanations and, further, the propositions are reasonably grounded in the literature on organizations. With the paucity of empirical studies of resource allocation within organizations noted by Pondy (1970), however, the propositions and their generalizability must await additional empirical work. Indeed, as important as the substantive results is the fact that this study has indicated how unobtrusive archival data can be used to assess and empirically examine power and resource allocation in social systems.

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