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POWER IN TOP MANAGEMENT TEAMS: DIMENSIONS, MEASUREMENT, AND VALIDATION

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Top managers' power plays a key role in strategic decision making. However, although numerous scholars have recognized its importance, very few have attempted to measure the phenomenon. In this article, I present a set of dimensions measuring top managers' power and suggest a measurement methodology to facilitate empirical inquiry. Data from a group of 1,763 top managers in three industries were used to assess the validity and reliability of the power dimensions in three studies. Results demonstrate strong support for the proposed power dimensions.

The topic of executive leadership has recently received significant attention from scholars in strategy and organization theory. They have concentrated on such issues as the composition of top management teams, executive succession, managerial styles, board-management relations, and fitting executive teams to environments and strategies. However, one important area that has received little attention (Eisenhardt and Bourgeois [1988] is an exception) is top managers' power. This lack is surprising, given the importance of power relationships to strategic choice.

Power is equally central to research on top management teams. In fact, the choice of unit of analysis in research on top managers and the issue of managerial power are two sides of the same coin. That is, adoption of a unit of analysis rests on an implicit assumption about the distribution of power among top managers. For example, in an organization in which the chief executive officer (CEO) wields dominant power, studying only the CEO may provide sufficient information with which to test propositions. However, in organizations in which power is less polarized, consideration of a coalition of top managers is necessary to fully capture the range of managerial orientations prevailing. Hence, consideration of the distribution of power among top managers seems an essential ingredient for research on top management teams.

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In this article, I focus on the most senior of top managers, the "dominant coalitions" of firms (Cyert & March, 1963). Although most large firms have many officers, typically only a small subset of managers is most responsible for setting policy (Thompson, 1967). It is this inner circle, or dominant coalition, that was the focus of this research.

The dominant coalition of a firm typically consists of the CEO and several of his or her most senior managers. However, although the CEO is usually the most powerful member of this group, such is not always the case (Mintzberg, 1983). For example, managers with large shareholdings may be more powerful than a CEO. Except in the most extreme cases, management is a shared effort in which a dominant coalition collectively shapes organizational outcomes. The limited empirical research comparing explained variance using CEOs or a wider group of top managers has consistently found that the latter unit of analysis yielded superior results (Bantel & Jackson, 1989; Finkelstein, 1988; Hage & Dewar, 1973; Tushman, Virany, & Romanelli, 1985). These findings support the notion that CEOs share power with other senior executives in many firms. Hence, to more fully understand how top managers influence organizational direction, it is important to differentiate managers in terms of their power.

The research reported here had three primary purposes: (1) to argue that managerial power is a central element in strategic choice, (2) to conceptualize major power sources in dominant coalitions, and (3) to suggest and validate specific measures of power that are readily available to other researchers. The following section examines power and strategy, illustrating how they interact and hence, why studying managerial power is so important for researchers in strategic management. Next, I present both a set of top managerial power dimensions and a measurement methodology to aid researchers, and finally, report three studies that test the validity of these dimensions.

POWER IN STRATEGIC CHOICE

Power is defined here as the capacity of individual actors to exert their will. This definition is consistent with those of other scholars (Hickson, Lee, Schneck, & Pennings, 1971; MacMillan, 1978; Pfeffer, 1981) and readily lends itself to an analysis of power among top managers in organizations. Although power may be exercised in numerous settings (Pfeffer, 1981), this article concentrates on its role in strategy making.

Child (1972) recognized that power is central to strategic choice. He recommended that investigators study power to understand what strategic choices are made. By so doing, they can make confident predictions about the impact of managerial orientations on strategy. As Child argued, only when power can be adequately measured is high predictive certainty likely to be achieved.

There is considerable support for this view from other scholars. Strategic decisions are unstructured and replete with ambiguities (Mintzberg,

Raisinghani, & Theoret, 1976). Hence, they invite the use of power (Mintzberg, 1983), with different executives favoring their preferred choices. In a similar vein, Tushman (1977) argued that the less "programmable," or easily specified, a decision, the more nonbureaucratic influences are important. Such a situation is most likely to arise at the upper echelons of an organization (Tushman, 1977), where uncertainty is greatest (Thompson, 1967); strategic decisions are exemplary nonprogrammable decisions. Hence, power can be seen to hold a central position in strategy making.

In support of the theoretical arguments discussed above, a number of empirical studies of strategic decision making have identified power as a central concept. Carter (1971) emphasized the importance of bargaining in the computer equipment company he studied. Pettigrew (1973), in analyzing one firm's choice of a computer system, described how power helped resolve conflicting preferences for competing manufacturers.

Other scholars have emphasized the role of power in strategic decision making in their work. For example, Murray looked at strategic decision making in a regulated utility, describing choice as a "negotiated outcome" (1978: 960). He argued that strategic change would proceed incrementally when power was dispersed among several actors. In another study, Miles and Cameron (1982) discussed the role of organizational power in strategic adaptation. In a sample of six tobacco firms, they found that the power of different functional groups influenced diversification strategy. These studies are supported by a number of others emphasizing the role of power in top managerial decision making (Allison, 1971; Bower & Doz, 1979; Eisenhardt & Bourgeois, 1988; Hinings, Hickson, Pennings, & Schneck, 1974).

This brief review of the literature underlines the relevance of power in strategic decision making. Because of its significance to top managerial actions, explicit consideration of the role of power when studying top management teams seems critical. The following section outlines four key dimensions of top managerial power.

DIMENSIONS OF TOP MANAGERS' POWER

There have been many attempts to outline measures of power (e.g., Emerson, 1962; French & Raven, 1959; Shukla, 1977). Although understanding of the phenomenon has advanced, previous frameworks were not specifically developed with top managers in mind, reducing their usefulness for the present. Additionally, a common shortcoming was a lack of concern for measurement. It becomes difficult to assess the relative merits of a set of power dimensions when there is little indication of its measurement potential.

The approach taken here attempted to overcome these problems by (1) narrowing the focus to power within the dominant coalition of a firm alone, (2) recognizing the multidimensional nature of power (March, 1966) by defining four power dimensions relevant to top managers, and (3) developing a set of objective indicators of power to facilitate empirical measurement.

Power relations in dominant coalitions arise because of the interdependent nature of managerial work (Hickson et al., 1971; Thompson, 1967). Power accrues to top managers who (1) can cope with uncertainty (Thompson, 1967) and (2) are uniquely positioned to do so (Crozier, 1964). Hence, as Emerson (1962) argued, power is a relative concept that can only be understood in a particular context. In this research, the context was dominant coalitions, and the important sources of uncertainty were those elements of organizations and their environments that most directly affect managerial work.

Given the centrality of managing uncertainty, it follows that the key bases of power for top managers are the ability to cope with internal and external sources of uncertainty. Adopting a stakeholder approach (Freeman, 1984) allows identification of major sources of uncertainty. Key internal sources of uncertainty are other top managers and boards of directors, and major external sources of uncertainty are a firm's task and institutional environments. The corresponding types of power that accrue to executives who can manage these uncertainties are structural power, ownership power, expert power, and prestige power. Identifying multiple dimensions of power is consistent with the nature of this complex construct (March, 1966) and addresses a broader range of sources of uncertainty than has been discussed in the literature.

Although much has been written on external sources of uncertainty and their effects on managerial power (e.g., Pfeffer & Salancik, 1978; Thompson, 1967), internal sources of uncertainty have received considerably less attention. However, from a top-management-team perspective, it is not hard to see how managers create uncertainty by holding conflicting preferences that can confuse strategic direction. Managers who can reduce this uncertainty by controlling an organization's decision agenda (Kotter, 1982), the alternatives considered (Tushman & Romanelli, 1985), or information flows (Gray & Ariss, 1985) will gain power.

Boards of directors, as representatives of a firm's shareholders, also can create uncertainty for top management teams. Although most boards have relatively little influence, those with significant outside shareholders have the power to limit managerial discretion (Hambrick & Finkelstein, 1987). In fact, there is evidence that firms with large outside shareholders may follow different strategies than do firms without such shareholders (Baysinger, Kosnik, & Turk, 1991). Managers who can control board activities and reduce the uncertainty that arises when boards have the power to influence strategy can gain power within a firm's dominant coalition.

The power dimensions applied in this research were defined as follows:

Structural Power

This is perhaps the most commonly cited type of power; it is based on formal organizational structure and hierarchical authority (Brass, 1984; Hambrick, 1981; Perrow, 1970; Tushman & Romanelli, 1983). Managers who

have a legislative right to exert influence are influential. Hence, CEOs have high structural power over other members of dominant coalitions because of their formal organizational position. This authority allows CEOs to manage uncertainty by controlling (to a degree) the behavior of their subordinates. More generally, although CEOs typically have the most structural power because of their preeminent formal organizational position, this dimension varies among other top managers. For example, structural power can take the form of "pulling rank" during disputes on strategic direction within a top team. Alternatively, this influence can be more indirect, such as when senior managers are privy to more information reaching successively higher levels or have greater control of resources than junior managers. The greater a manager's structural power, the greater his or her control over colleagues' actions.

Ownership Power

Power accrues to managers in their capacity as agents acting on behalf of shareholders. Hence, the strength of a manager's position in the agent-principal relationship determines ownership power. Where managers fall along this continuum depends on their ownership position as well as on their links to the founder of a firm. For example, all other things being equal, a top manager with significant shareholdings in an organization will be more powerful than a manager without such a base of control (Zald, 1969). In addition, managers who are founders of a firm or related to founders may gain power through their often long-term interaction with the board, as they translate their unique positions to implicit control over board members. Hence, managers with ownership power will gain some measure of control over boards of directors. And since most managers tend to be risk-averse, managers who can reduce the uncertainty emanating from a firm's board of directors will be more powerful than others.

Expert Power

The ability of top managers to deal with environmental contingencies and contribute to organizational success is an important source of power (Crozier, 1964; Hambrick, 1981; Hickson et al., 1971; Tushman & Romanelli, 1983; Mintzberg, 1983). Several components of its task environment can create uncertainty for an organization, such as its customers, suppliers, competitors, and the government (Porter, 1980; Thompson, 1967). The more managers have developed contacts and relationships with elements of the task environment, the greater is their ability to cope with contingencies of the task environment, and the greater is their expert power.

Managers with relevant expertise may have significant influence on a particular strategic choice (Yetton & Bottger, 1982) and are often sought out for their advice (Tushman & Scanlan, 1981). However, power tends to accrue

best when a manager's expertise is in an area critical to an organization (Hickson et al., 1971). Criticality in turn depends on what elements of the task environment the organization finds most problematic (Kanter, 1977). In addition, the breadth of managers' experience enhances their ability to control these critical contingencies.

Prestige Power

An important source of power is personal prestige or status. Managers' reputation in the institutional environment and among stakeholders influences others' perceptions of their influence (Dalton, Barnes, & Zaleznik, 1968). Institutional environments are comprised of those members of society, such as governments, financial institutions, and other important actors external to a firm, that individual organizations must look to for support and legitimacy (Scott & Meyer, 1983). In addition, managers' standing in the "managerial elite" sends out powerful messages to other top managers about their personal importance (Useem, 1979). The managerial elite consists of those "individuals who occupy formally defined positions of authority at the head of a social organization or institution" (Giddens, 1972: 348). Managerial prestige promotes power by facilitating the absorption of uncertainty from the institutional environment both informationally and symbolically. Members of the managerial elite tend to be active in institutional governance (Useem, 1979). They may thus gain power from external contacts, which may provide information of value to an organization, in much the same way as the external communication "stars" (Tushman & Romanelli, 1983) and "boundary spanners" (Aldrich & Herker, 1977) of firms gain power from contact with individuals outside their organizations. As Galbraith (1973) argued, information acquisition is an important way to reduce uncertainty. For example, senior managers who serve on external boards may receive timely information on business conditions that they would not otherwise have been privy to.

Prestige also provides power through suggesting that a manager has gilt-edged qualifications and powerful friends. A firm's legitimacy depends in part on the prestige of its managers (D'Aveni, 1990); to the extent that an organization's enhanced legitimacy reduces uncertainty from the institutional environment (Selznick, 1957), prestige is an important source of power.

Together, these four dimensions define top managers' power. It is important to note, however, that other power dimensions may be relevant as well. For example, power may emanate from a manager's personality. In other cases, a manager with a "hot hand" may gain power. I considered the four dimensions outlined here to be the most important organizational sources of top managerial power. To the extent that they do not represent social-psychological sources of power and the occasional fluidity of power, their generalizability is limited.

The following section discusses methods of measuring power and outlines an approach that emphasizes objective indicators.

THE MEASUREMENT OF TOP MANAGERS' POWER

The measurement of power has been a major stumbling block in investigations of the phenomenon in the literature (March, 1966; Pfeffer, 1981). One of the major problems has been an overreliance on perceptual indicators of power and a lack of objectivity in the resulting measures. Power is a sensitive subject for many managers; the word itself is heavily laden with meaning. Perceptual measures assume that "social actors are knowledgeable about power within their organizations; informants are willing to divulge what they know about power distributions; and such a questioning process will not itself create the phenomenon under study, power" (Pfeffer, 1981: 55). In spite of these drawbacks, perceptual measures of power are important for what they tell us about shared judgments among social actors in organizations (Pfeffer, 1981). Perrow (1970), Hinings and colleagues (1974), Pfeffer and Salancik (1974), Hambrick (1981), and Tushman and Romanelli (1983) have used perceptual measures in studies of organizational power.

In light of the questionable validity of relying solely on perceptual measures of power, it seems important to develop relevant objective measures. Pfeffer (1981) argued that "representational" indicators of power allow researchers to assess power more objectively than perceptual measures. Representational indicators of power consider the position of managers in critical organizational and extraorganizational roles (Pfeffer, 1981). These roles might include formal positions in an organization as well as informal liaisons with other organizations.

A number of scholars investigating power have adopted representational indicators to, for example, measure committee representation in universities (Hills & Mahoney, 1978; Pfeffer & Moore, 1980; Salancik & Pfeffer, 1974), signify representation on advisor panels in National Science Foundation funding (Pfeffer, Salancik, & Leblebici, 1976), and represent board prestige in human service agencies (Provan, 1980).

Objective indicators of power are valuable because they do not suffer from the same drawbacks as perceptual measures. However, objective indicators tend to be somewhat removed from the source of power; they provide secondhand information. Hence, the best approach might entail using both objective and perceptual indicators (March, 1966; Pfeffer, 1981; Provan, 1980).

In this research, I placed special emphasis on the development of objective indicators of top managerial power. However, because there have not been many attempts to measure power at the top managerial level, I also measured power perceptually to test for convergent validity. In addition, multiple objective indicators were developed, since any one measure of power may not capture the full complexity of the construct.

Structural Power

Structural power is related to the distribution of formal positions within an organization. The greater managers' structural power, the less their dependence on other members of the dominant coalition. A manager's formal position can be captured by examining formal titles and relative compensation. Titles clearly relate to hierarchical authority, and managers' compensation is a precise, though less formal, statement of their standing in an organization.

Three variables were used to create a structural power scale:

Percentage with higher titles. This variable was the percentage of individuals in a firm's dominant coalition with higher official titles than a focal executive. The CEO is rated 0 on this variable, and the least powerful members of the dominant coalition are rated highest. For example, in a team consisting of CEO, president, executive vice president, and vice president, the last manager would rate 0.75. Because firms differ in the hierarchy of titles they use, company annual reports are useful in identifying hierarchical relationships. Numerous studies have used variants of this measure (e.g., Perrow, 1970).

Compensation. This variable was defined as the total cash compensation (salary, bonus, and miscellaneous benefits) of an executive divided by the compensation of the highest paid manager in the same firm, as reported in company proxy statements. (In the case of the top earner in a firm, I used the pay of the second highest paid manager as the denominator in the ratio to avoid restricting the maximum score to 1.00.) Compensation committees set pay scales both across and within hierarchical levels (Simon, 1957), creating pay differentials that provide information on relative power (Whistler, Meyer, Baum, & Sorensen, 1967). Hence, compensation can be considered an important indicator of formal power (Hambrick & D'Aveni, 1990).

Number of titles. This variable was defined as the number of official titles a manager has, as stated in annual reports. Values for the variable typically range from 1 to 3, with a high number of official titles indicating greater power (Harrison, Torres, & Kukalis, 1988). For example, Harrison and colleagues (1988) found that CEOs that also carried the title of board chairperson were more powerful than CEOs without the additional title.

Ownership Power

The agency relationship that is central to ownership power suggests that shareholdings are relevant indicators of power. Managerial shareholdings reduce board influence and the accompanying uncertainty that powerful boards can create for dominant coalitions. In addition, a manager's familial links with other officers and a board enhance ownership power by bypassing traditional sources of board control. Hence, indicators of ownership power, available in company proxy statements, are:

Executive shares. This variable was defined as the percentage of a firm's shares owned by an executive and his or her spouse and dependent children. This is perhaps the most direct means of assessing a manager's ownership power, and it has often been used in the literature on corporate control (e.g., McEachern, 1975).

Family shares. This variable was defined as the percentage of a firm's shares owned by an executive's extended family (brothers, father, and so forth). This variable encompasses an additional aspect of ownership structure by focusing on the shareholdings of a manager's family as a base of support (Finkelstein & Hambrick, 1989).

Founder or relative. Ownership power may also derive from a manager's personal relation to other powerful managers. Hence, the third indicator is based on two types of such associations: (a) the manager is the founder of the firm, or is related to the founder, and (b) the manager has the same last name as another officer. Values for the variable range from 0 to 2, as follows: 0, neither (a) nor (b) is true; 1, either (a) or (b), but not both, is true; and 2, both (a) and (b) are true.

Of course, having the same name as another officer does not automatically imply familial relation. However, in most cases it is possible to determine whether two managers are related by the information provided in company proxy statements. Even failing such determination, it does not seem unreasonable to assume that two top managers with identical surnames are related, given that firms typically have few officers. To the extent that this assumption is false, the measure of ownership power will be slightly overstated in some cases. Kosnik (1987) found that positive values on a similar measure were associated with the granting of "greenmail" by boards of directors.[1]

Expert Power

In the context of strategic decision making, expertise may be defined as the ability to deal with environmental dependencies. One way of assessing such coping capability, and one that is consistent with my concern for objective measures of power, is to examine functional expertise (Fligstein, 1987; Hambrick, 1981; Pfeffer & Salancik, 1978). Top managers with functional experience in a particular area can be said to be expert in that area. Hence, the top managers who can best deal with environmental requirements and who are well situated to cope with critical contingencies will be those with appropriate functional expertise. In addition, the breadth of man-

[1] Alternative definitions of this variable, such as dummy variables for being a founder or having the same name as another officer, were also considered. The variable was chosen because it provides more information than either alternative and facilitates construction of scales.

Information from study 1 and from proxy statements confirmed that 17 of 21 managers (81%) with the same last name as another manager were definitely related. Hence, examining proxy statements appears to be an effective way to verify whether managers with the same last name are of the same family.

agerial assignments over a career increases exposure to environmental actors and enhances an executive's ability to manage the relationships that grow out of such contact.

Three variables were used to measure expert power:

Critical expertise power. Three steps were involved in creating this variable. First, the key environmental requirements facing organizations were determined. On the basis of the work of Katz and Kahn (1966), Miles and Snow (1978), and Hambrick (1981), four major types of environmental requirements can be specified that correspond to different sources of uncertainty in the task environment of organizations: inputs (supply conditions are the source of uncertainty), outputs (demand conditions), throughputs (production processes), and regulatory concerns (managing regulatory conditions). Key environmental requirements can be assessed by counting the number of articles over the time period of interest cited in the *Funk & Scott Predicasts*[2] that emphasize each of the four categories of environmental requirement. In addition, reviewing archival data on each environmental requirement qualitatively can serve as a check on the accuracy of the *Funk & Scott* analysis. There is a great deal of information available on environments and industries to facilitate such a qualitative analysis, including industry trade publications, industry surveys from the business press and industry analysts, and government-generated industry reports. This method maximizes rigor without losing qualitative richness.

Second, I identified all functional areas that managers had direct experience in, using *Dun & Bradstreet's Reference Book of Corporate Management*. And third, I assessed critical expertise power by matching functional experience with environmental requirements, as follows: inputs—purchasing, personnel, exploration; outputs—sales and marketing, product R&D; throughputs—operations, accounting, process R&D; and regulatory concerns—government service, law (Hambrick, 1981; Miles & Snow, 1978). The actual measure was calculated by summing the proportions of citations in each environmental requirement area in which a focal manager had corresponding functional experience. For example, if the distribution of citations from the analysis of *Funk & Scott* is inputs, .10, outputs, .50, throughputs, .25, and regulatory concerns, .15, then a manager with functional experience in marketing and law would score .65. The range of this variable is from 0 to 1.

Functional areas. This item is a straight count of the number of different functional areas a focal manager had experience in. It is a broader measure of experience that does not limit itself to only those functional areas deemed

[2] The *Funk & Scott* directory lists articles from the business and trade press in a given year. Organized by industry, the directory lists the titles of articles by categories like "raw materials," "demand," and "regulations." Assigning each title in each category to one of the four environmental requirements and counting the totals is an efficient way to measure the significance of different environmental contingencies to a firm. O'Reilly and Flatt (1989) used this data source to measure the innovativeness of firms.

important by the *Funk & Scott* criterion. As such, it recognizes that managers with a broader background may be better able to cope with multiple stakeholders from a firm's task environment.

Positions in firm. The greater the number of different positions a manager has had in a firm, the wider his or her range of interaction with environmental actors. This variable encapsulates the idea that the variety of assignments managers undertake as they progress in their careers provides valuable data on a firm and its environment. In addition, because different positions often involve different geographic and product-related assignments, the more positions managers have had, the greater the breadth of their contacts with elements of a firm's task environment. Given that most managerial jobs involve a boundary-spanning role that promotes interaction with the task environment (Mintzberg, 1973), by the time managers join the dominant coalition they may very well have developed a set of relationships they can tap to help manage environmental interdependencies. *Dun & Bradstreet* provided data on this variable.

Prestige Power

Prestige power is related to a manager's ability to absorb uncertainty from the institutional environment. The four indicators below emphasize the role of outside directorships and education as key components of prestige.

Corporate boards. This variable was the total number of corporate boards of directors a manager sat on. Research on directorships has suggested that managers may use board memberships to manage interorganizational dependencies (Pennings, 1980; Pfeffer, 1972) or to establish and maintain contact with other important people in the business elite (Allen, 1974; Useem, 1979). The former perspective is consistent with the informational role of prestige power, and the latter with the symbolic aspects of the construct. Top managers enhance their own, and their organizations', legitimacy in the institutional environment by serving on boards. Only the boards of nonaffiliated corporations were included; for instance, being on the board of a firm's subsidiary was not counted. The greater the number of directorships, the greater the prestige score for an executive.

Nonprofit boards. This variable was the total number of nonprofit boards a manager sat on. Service to the community is an important aspect of a manager's membership in the elite (Useem, 1979). In addition to providing social contact for members, nonprofit boards often bring together many influential people in a forum that facilitates information exchange. For a nonprofit directorship to be counted, a manager had to be part of the top decision-making or consultative arm of an organization; simple membership in the organizations did not count. Both corporate and nonprofit boards were identified from company proxy statements and *Standard & Poor's Directory of Directors*.

Average board rating. This variable was the average stock rating from *Standard & Poor's Stock Surveys* for all corporations of which a manager

was an external director. This variable explicitly measures the financial standing of the firms for which a manager is a board member by using the Standard & Poor's rating of their general financial condition. It is more prestigious to sit on the board of AT&T than it is to be a director of a struggling, relatively unknown firm.

Elite education. Prestige power may also derive from a manager's educational background (D'Aveni, 1990). Attendance at certain schools carries with it an aura of prominence in the business elite (Clement, 1975; Domhoff, 1967). Membership in this elite group connotes considerable prestige in the institutional environment. Because candidates for institutional governance often come from this elite group (Useem, 1979), top managers with elite educational backgrounds may be more influential within a dominant coalition. Hence, a fourth indicator was based on the rated prestige of the schools, listed in *Dun & Bradstreet*, a manager has attended. The variable, with values ranging from 0 to 3, was created as follows:[3] 0, no formal higher education; 1, undergraduate and graduate schools are both nonelite; 2, undergraduate or graduate school (but not both) is elite; 3, both undergraduate and graduate schools are elite.

A comprehensive list of elite educational institutions can be developed from work by Useem and Karabel (1986) and a survey in *U.S. News and World Report* (1987). Relying on classic work by Coleman (1973), Pierson (1969), and Blau and Margulies (1974–75), Useem and Karabel listed the most highly ranked institutions for undergraduate education, M.B.A. programs, and law degrees. The *U.S. News & World Report* (1987) survey lists the top ten liberal arts colleges. Brown University, which is part of the Ivy League but was not included by Useem and Karabel, the U.S. Military Academy, and the U.S. Naval Academy complete the list of prestigious institutions used here. Although no such inventory of elite schools can be definitive, this list does appear to have considerable face validity and is similar to those used in previous studies. It is reported in Appendix A.

VALIDITY OF OBJECTIVE POWER MEASURES

This section outlines how the power dimensions were validated. Three studies were conducted. In the first, the four dimensions of power were measured for 1,763 top managers working in 102 firms over five years (1978–82). The firms were 36 computer, 36 chemical, and 30 natural gas distribution companies drawn from populations of the largest firms in each industry as listed in *Ward's Directory of 50,000 Largest U.S. Corporations* for which data were available on top managers' power for all fiscal years studied. Because expert power concerns critical environmental contingencies, examin-

[3] Several alternative specifications were also considered, such as the degree of education and dummy variables for attendance at prestigious undergraduate or graduate institutions. I chose this variable because of the added information it provides and its facilitation of scale construction.

ing multiple industries was thought desirable. I chose the three industries because they represented different contexts in which dominant coalitions must manage. The computer industry was dynamic, offering significant discretion to top managers. The natural gas distribution industry was effectively regulated, constraining managerial initiatives. The chemical industry fell somewhere between those two industries, with elements of both stability and flexibility present (Hambrick & Finkelstein, 1987). I restricted the study to large firms because data on top managers of smaller firms are often inaccessible, and a relatively homogeneous set of firms was required to ensure comparability. However, the large number of firms and variety of industries examined add some external validity.

In the second study, top managers from each of the 102 firms were asked to rate managerial power. I then compared a perceptual measure of power to objective measures in a test of convergent validity.

The third study investigated the predictive validity of the power dimensions by examining the association between top-management-team members with financial functional backgrounds and firms' diversification postures and acquisition activity. Using the data from study 1, I compared regression coefficients from a series of models, one with the straight proportion of top team members with finance backgrounds as the independent variable, and the others using power-weighted measures of the same proportion. The three studies are described below.

Study 1

Data were gathered for each indicator of power for each member of the dominant coalition of the 102 firms for every year from 1978 through 1982. Inside board membership was the criterion used to identify dominant coalition members. Sitting on a firm's board of directors is an objective, formal indicator of membership in the inner circle of its top managers, the group that has ultimate responsibility for setting policy (Thompson, 1967). As such, inside board membership is closely related to Cyert and March's (1963) conceptualization of the dominant coalition. In addition, inside board membership represents an absolute cutoff between top managers and other managers that is analogous across firms and industries. Managers who are also directors have access to more information than other managers do. And because there are often constraints on the number of inside board members in a firm, appointment to the board is often a clear indication of a person's membership in the inner circle. The full group of managers consisted of 1,763 dominant coalition members; the average number of managers in a dominant coalition was 3.5.

Table 1 reports descriptive statistics for each of the variables making up the power dimensions. Data from all five years were pooled to simplify reporting. Although the significance of the correlation coefficients may be somewhat overstated because of the pooling of the data, a year-by-year analysis of correlation matrices indicated a similar pattern over time. The correlations in Table 1 reveal a pattern that appears to support the measurement

TABLE 1
Descriptive Statistics and Correlations of Items Measuring Power[a]

Variables	Means	s.d.	Correlations											
			1	2	3	4	5	6	7	8	9	10	11	12
1. Percent with higher titles	0.31	0.25												
2. Compensation	0.84	0.53	−.64											
3. Number of titles	1.38	0.58	−.63	.60										
4. Executive shares	0.01	0.05	−.20	.21	.12									
5. Family shares	0.01	0.03	−.09	.05	.06	.54								
6. Founder or relative	0.10	0.41	−.16	.08	.04	.45	.54							
7. Critical functional experience	0.31	0.24	−.03	−.08	.03	−.07	−.02	−.08						
8. Functional areas	1.31	0.54	−.10	.01	.06	.05	.10	.08	.57					
9. Positions in firm	4.14	2.82	−.08	−.05	.08	−.12	.05	−.07	.38	.35				
10. Corporate boards	1.00	1.49	−.34	.33	.32	.08	.02	.03	−.02	.03	.14			
11. Nonprofit boards	0.68	1.69	−.14	.13	.17	−.08	−.04	−.09	.06	−.03	.14	.38		
12. Average board rating	1.92	2.48	−.37	.34	.33	.03	.01	−.01	−.01	.05	.16	.61	.39	
13. Elite education	1.32	0.82	−.04	.03	.03	.01	.07	.02	.14	.04	.14	.16	.23	.28

[a] N = 1,763. Correlations greater than .05 are significant at $p < .05$.

methodology presented earlier. However, to evaluate the power dimensions and their measurement more closely, I selected three related criteria. First, how well did the items designed to measure a construct converge by loading together as a single factor? Second, how internally consistent were the items that made up each construct? And third, how well did items designed to measure other constructs discriminate by breaking out as different factors (Kerlinger, 1973; Van de Ven & Ferry, 1980)? I constructed a scale for each power dimension by adding up the normalized values (after standardizing by industry and year) of each variable making up the scale.

The first criterion was assessed by conducting a principal components factor analysis of all 13 items comprising the four power measures. I extracted factors with eigenvalues greater than one, using an oblique rotation because I expected specific components of power to be interrelated.

As the results shown in Table 2 indicate, four factors were identified, with loadings (using a conventional cutoff of .40) that were consistent with expectations. Variables loaded onto all four factors in a pattern that was identical to each construct's dimensions.[4] Hence, the first criterion was met.

Internal consistency was assessed in several ways, as shown in the first four columns of Table 3. First, I calculated Cronbach alphas to obtain reliability estimates for each dimension. Although there are no standard guidelines available on appropriate magnitudes for the coefficient (Van de Ven & Ferry, 1980), in practice an alpha greater than .60 is considered reasonable in organizational research (Eisenhardt, 1988; Van de Ven & Ferry, 1980). Hence, all four power dimensions demonstrated internal consistency. Table 3 also provides data on the average item-scale correlation and the range of alphas that emerged when a set of subscales was created for each scale by dropping a different item in each subscale. The average item-scale correlations were at least .71, and the ranges of alphas across subscales were reasonably consistent, indicating strong support for scale construction. In addition, the average alphas for these subscales were only moderately lower than the full-scale alphas. Overall, these tests indicate that the power dimensions were internally consistent.

The third criterion, which concerns discriminant validity, was assessed in three ways. First, as the factor analysis reported in Table 2 indicates, each of the variables loaded onto only one factor in a pattern that was consistent with predicted structures. Second, as reported in column 5 of Table 3, the median correlation of each item with other items making up other scales was less than the median correlation of each item with variables making up the scale of which the item was part. Although there is no standard guideline for this test, Campbell and Fiske (1959) suggested that any difference in median correlations is sufficient to established discriminant validity, a benchmark the power dimensions easily surpassed. The third test of discriminant va-

[4] Factor analysis was also performed on each set of variables making up a separate power dimension. Unidimensionality was established for each dimension since only one factor emerged with an eigenvalue greater than one in each factor analysis (Bagozzi, 1980).

TABLE 2
Rotated Factor Patterns[a]

Variables	Factor 1: Structural Power	Factor 2: Ownership Power	Factor 3: Expert Power	Factor 4: Prestige Power
Percent with higher titles	**−.84**	−.06	−.08	−.02
Compensation	**.86**	.00	−.08	.00
Number of titles	**.84**	−.06	.07	.02
Executive shares	.14	**.77**	−.06	−.05
Family shares	−.10	**.86**	.07	.06
Founder or relative	−.00	**.81**	−.02	−.03
Critical functional experience	−.03	−.07	**.85**	−.03
Functional areas	.10	.10	**.84**	−.12
Positions in firm	−.07	−.06	**.65**	.24
Corporate boards	.23	.02	−.07	**.67**
Nonprofit boards	−.09	−.10	−.05	**.75**
Average board rating	.21	−.01	−.04	**.73**
Elite education	−.33	.15	.10	**.67**
Variance explained				
Proportional	.24	.16	.14	.11
Cumulative	.24	.40	.54	.65

[a] N = 1,763. Bold print highlights the factor loadings with absolute values greater than .40.

lidity requires a variable to be more highly correlated with its own scale than with other scales. Table 3 (column 6) again illustrates that each variable meets this test, with differences in correlations of at least .30 in all cases.

In sum, the results of study 1 provide strong support for the reliability and validity of the power dimensions.[5]

Study 2

The second study asked top managers to evaluate power in their firms. A questionnaire was sent to 499 top managers who held office in studied firms in 1981. My rationale for using a questionnaire was as follows. First, because some of the objective power measures had not been used before, I sought a second source of data. Obtaining perceptual measures from survey data was the only feasible way of achieving this goal, given the number of firms studied.

Second, the use of two completely different methods of data collection was thought highly desirable for establishing validity in view of the sugges-

[5] I applied the same tests to the data on a year-by-year basis to examine the stability of results over time and to ensure that pooling the data over five years introduced no bias. Results from both factor analysis and the set of validity and reliability tests reported in Table 3 were similar in pattern to those reported here.

TABLE 3
Validity of Objective Measures of Power[a]

Variables	Cronbach Alphas	Average Item-Scale Correlations	Range of Alphas	Average Alphas	Median Correlations[b]	Differences in Correlations[c]
Structural power	.83	.87	.75–.78	.77	.53	
Percent with higher titles						.50
Compensation						.50
Number of titles						.50
Ownership power	.76	.82	.62–.70	.67	.49	
Executive shares						.54
Family shares						.77
Founder or relative						.73
Expert power	.70	.75	.52–.73	.60	.34	
Critical functional experience						.75
Functional areas						.66
Positions in firm						.51
Prestige power	.67	.71	.51–.72	.60	.29	
Corporate boards						.30
Nonprofit boards						.48
Average board rating						.35
Elite education						.48

[a] N = 1,763.
[b] Median correlation of items in scale minus median correlation of items in scale with all nonscale items.
[c] Correlation of item with scale minus largest of the correlations of item with other scales.

tions of numerous scholars concerning multiple measures of power (March, 1966; Pfeffer, 1981; Provan, 1980).

Two major problems in obtaining survey data were reconciliation of data with the time period of the study and the possible unwillingness of top managers to respond to a questionnaire on as sensitive a subject as power. As to the first concern, stated simply, how reliable are managers' recollections of events in the past? The questionnaire, administered in 1986, asked about events in 1981. To assess this problem, I gave special attention to interrater reliability. As will be reported below, I found strong agreement among multiple respondents from single firms. However, the potential difficulty of recalling past events necessitated that the questionnaire address only one year, and not all five years for which data were available from archival sources.

The problem of sensitivity can also be assessed for potential bias. If overall response rates are good, it can reasonably be concluded that respondents were not reluctant to discuss sensitive issues. In a pilot study sent to 75 managers in 16 firms, 40 percent responded, a reasonably high response rate in light of the difficulties discussed above.

The survey instrument listed the top managers from a respondent's firm. Respondents were asked to indicate each individual's amount of influence on decisions concerning major resource allocations; organizational redesign; and acquisitions, divestments, and entering or exiting major markets. Appendix B gives full details on the perceptual power measure. This approach to measuring power is consistent with recent work by Hambrick (1981) and Eisenhardt and Bourgeois (1988).

The response rate was 34.5 percent, quite good given the sensitivity of the questionnaire and the level of manager queried (Norburn & Birley, 1986). Of the 172 respondents, 31 were chief executives, and an additional 113 were inside board members in 1981 (28 respondents were senior managers who did not sit on their firms' boards). More than 60 percent (104) requested a summary report of survey results, reflecting their interest in the topic and perhaps the seriousness of their responses. The respondents represented 83 of the 102 firms chosen and provided data on 271 inside board members. I evaluated nonresponse bias by (1) comparing demographic characteristics, such as tenure in a firm, tenure in a position, functional background, and education, and the power scores of respondents and nonrespondents, and (2) comparing the 83 firms with survey data to the 19 for which there was no respondent on sales, numbers of employees, ages, and profitability. In both cases, there were no statistically significant differences, indicating that there was no nonresponse bias.

A test of survey validity came from examining the responses of multiple respondents from single firms. There were two or more respondents from one firm in 53 cases. I examined perceived power ratings from the survey for these 53 cases for multirater agreement using either the Spearman rank correlation or the Kendall coefficient of concordance. Table 4 shows results, reporting both the value of the statistic and its significance. Results show

TABLE 4
Multirater Reliability of Survey Respondents

	Number of Respondents in Firm			
	Two	Three	Four	Five
Average of statistic[a]	.80	.80	.78	.98
Range	.4–1	.5–1	.5–.9	
Percentage significant at 5 percent	48	35	0	0
Percentage significant at 1 percent	19	47	88	100
Percentage significant, total	67	82	88	100
Number of firms	27	17	8	1

[a] For two respondents, Spearman rank correlation was used. For more than two, the Kendall coefficient of concordance was used.

very strong interrater agreement irrespective of the number of respondents in a firm. Fully 40 of the 53 multirater cases (75%) demonstrated significant interrater reliability at the 5 percent level or better. Of the nine cases with 4 or 5 respondents in the same firm, the Kendall coefficient of concordance was significant at the 1 percent level in all but one instance. These tests appear to support the use of the perceived power measure to assess convergent validity.

Table 5 provides descriptive statistics and correlations for objective and perceptual measures of power. Perceived power was positively correlated with structural, ownership, prestige, and expert power, significantly in three of the four cases. Only the correlation with expert power failed to reach significance. The magnitude of correlations indicates that, among the three objective power measures for which significant results were found, differences existed. Structural power was most strongly associated with perceived power, supporting the importance of managers' legitimate power. Interestingly, it was prestige power that demonstrated the next highest correlation, with ownership power exhibiting a weaker (though still significant) association. Managers with ownership power, though still powerful, may be less

TABLE 5
Descriptive Statistics and Correlations of Measures of Power[a]

			Correlations			
Variables	Means	s.d.	1	2	3	4
1. Structural power	0	2.61				
2. Ownership power	0	2.45	.17***			
3. Expert power	0	2.24	.05*	−.08**		
4. Prestige power	0	2.82	.43***	.01	.15***	
5. Perceived power	14.0	4.77	.72***	.18**	.08	.42***

[a] $N = 1{,}763$, except for correlations of perceived power, where $N = 271$.
* $p < .05$
** $p < .01$
*** $p < .001$

involved in the actual management of firms since perceived power is based on managerial influence in strategic decision making.

Overall, given that reported correlations were of measures from two different data sources, these results establish convergent validity and provide strong support for three of four objective power measures.

Two additional points are worth making. First, although structural and prestige power were correlated at .43, a "stepwise" regression analysis demonstrated significant independent effects on perceived power for both of these measures; the increment in R^2 was significant at $p < .01$. Hence, this analysis confirmed that structural and prestige power were both independently associated with perceived power. Second, significant associations were found even though perceived power exhibited only limited variance with a coefficient of variation equal to 0.34.

Study 3

The purpose of this study was to test the predictive validity of the power dimensions by examining how consideration of power improves the predictability of important strategy variables. Given that the focus of this research was top managers' power, the strategic relationship examined was a basic one that has garnered some support in previous work. Specifically, I studied the association between top-management-team members' functional backgrounds in finance and firm diversification posture and acquisition activity. The inclusion of power in analyses was expected to increase the strength of this relationship. Predictive validity would be established if the association between managers' backgrounds in finance and diversification posture and acquisition activity was stronger when the power of top managers was considered than when it was not.

A great deal of evidence supports the contention that the functional backgrounds of its top managers are related to a firm's strategy (Chaganti & Sambharya, 1987; Dearborn & Simon, 1958; Gupta & Govindarajan, 1984; Hitt & Ireland, 1985; Hitt, Ireland, & Palia, 1982; Hitt, Ireland, & Stadter, 1982; Snow & Hrebiniak, 1980). For example, recent work by Hitt and Tyler (1991) showed a relationship between functional backgrounds and strategic acquisition decisions. Much of this work is consistent with the view that top managers' backgrounds and experiences influence the strategic choices they make (Hambrick & Mason, 1984).

Functional backgrounds in finance are expected to be associated with diversification posture and acquisition activity for several reasons. They include (1) the tendency of executives from peripheral functions such as finance "to pursue strategies that fit with their relative deficiencies in 'hands-on' experience" (Hambrick & Mason, 1984: 199), (2) the likelihood that financial executives will attempt to achieve financial synergies, (3) the likelihood that top managers with financial backgrounds will be more capable than other managers of making a deal and building the capital structure that would facilitate such activity (Hitt & Ireland, 1985), and (4) the belief that the managerial job in diversified firms often resembles that of managing

a financial portfolio, an activity in which financial executives typically have some expertise (Berg, 1969; Gupta, 1984; Rumelt, 1974; Salter & Weinhold, 1979). Song (1982) surveyed 53 chief executives of diversified firms and found that acquisitive diversifiers had more CEOs with backgrounds in finance and law than internal diversifiers. Smith and White (1987) found that unrelated diversified firms were more likely than firms with other diversification patterns to select CEOs with functional backgrounds in finance. As a result, the proposition that functional backgrounds in finance are associated with diversification posture and acquisition activity appears to have both theoretical and empirical support.

This idea was tested with the same group of top managers used in studies 1 and 2. I examined top managers' functional backgrounds to ascertain the identities of those with dominant experience in finance. I did not count managers who had spent some time in finance but more time in other areas to ensure that only managers with a clear financial orientation would be included. The proportion of a top team's members with financial functional backgrounds was the main independent variable.

Three of the four power dimensions were examined in this study. Because two of three items composing the expert power scale were based on functional backgrounds, I dropped expert power from the analysis to avoid any confounding effects. All items composing structural, ownership, and prestige power were measured for each member of the dominant coalition in each year. However, rather than standardizing these items to create scales, in this study I used relative measures of power because the logic of the proposition required consideration of relative influence among top managers. Hence, managers with financial functional backgrounds were expected to emphasize diversification only if they had the power to do so. And managers had power to the extent that they enjoyed structural, ownership, and prestige power and other top team members did not.[6] Hence, I used three independent variables, one each for structural, ownership, and prestige power, to form measures of the power-weighted proportion of the top team with financial functional backgrounds.

These variables were created as follows: First, I calculated relative power measures by simply taking each manager's rating on a particular item and dividing it by the sum of the entire top team's ratings on the same item. For example, if in a team of five top managers, A served on five corporate boards, B had three directorships, C and D had one each, and E had none, the relative ratings for A through E would be .5, .3, .1, .1, and 0. I created the three power measures by averaging the relative power ratings over the items defining each scale. Second, I calculated the weighted proportion of financial functional backgrounds by summing the relative power ratings of all managers on the team with functional backgrounds in finance. This proce-

[6] This argument is very much in line with classic work on power by Emerson (1962) and Blau (1964), both of whom emphasized that power is a zero-sum game.

dure counted all managers with financial backgrounds but weighted more heavily the more powerful members of the team. For example, if two members of a team of five top managers had financial backgrounds, two had marketing backgrounds, and one an operations background, the arithmetic (unweighted) proportion of team members with financial backgrounds equaled .40. If the two managers with financial backgrounds had relative structural power ratings of .50 and .20, respectively, and the other three managers each rated .10, the structural power–weighted proportion of team members with financial backgrounds was .70. Operationally, I expected this weighted proportion to be more strongly associated with diversification than the unweighted proportion.

Three dependent variables were used to measure firm diversification posture and acquisition activity. First, I counted the number of four-digit Standard Industrial Classification (SIC) codes for each firm in each year. These data were available from *Standard & Poor's Directory of Corporations* and *Dun & Bradstreet's Million Dollar Directory*. Numerous researchers have effectively used a firm's SIC codes, which describe the types of businesses it competes in, to measure diversification posture (e.g., Montgomery, 1982; Pitts & Hopkins, 1982). For example, Montgomery found that product counts based on SIC codes yielded results that closely paralleled Rumelt's (1974) more intensive approach to assessing diversification.[7] In addition to SIC code data, the actual acquisition activity of the studied firms was measured by counting the cost and number of acquisitions made by each firm each year. I collected these data from *Mergers and Acquisitions*, a magazine that records all acquisitions with a value above $1 million.

Although the goal of this analysis was not to explain diversification posture and acquisition activity but to compare the predictive effects of unweighted and power-weighted measures of the proportion of dominant coalition members with finance backgrounds, I thought it important to include certain control variables, such as size, profitability, and industry membership. Large firms with excess resources often diversify in an attempt to use up slack (Chandler, 1962). In addition, because big firms may find it easier than small ones to raise capital, firm size may be related to diversification activity. Hence, I included the natural logarithm of sales as an inde-

[7] I also developed two additional measures of diversification based on the entropy index: total diversification and unrelated diversification. Both are based on the formula $\Sigma P_i \ln(1/P_i)$, where P is the sales attributed to segment i and $\ln(1/P_i)$ is the weight for each segment, or the logarithm of the inverse of its sales. Unrelated diversification was defined as diversification across industry groups (two-digit SIC code categories) and total diversification was defined as diversification across industry groups and arising out of operating in several segments (four-digit SIC code) within an industry group (Baysinger & Hoskisson, 1989; Palepu, 1985). These measures rely on line-of-business data, which were only available for one of the five years of the study (1981) from Trinet, a data base that provides complete information on revenues for each four-digit industry in which a firm is active. Results of ordinary least squares regression analyses of these measures were similar to those to be reported for the number of SIC codes, indicating that the findings of this study were robust.

pendent variable. A second control variable was firm profitability, measured as return on equity. Profitable firms may diversify because they often see marginal returns on additional investment in existing businesses, or alternatively, firms may diversify out of unprofitable businesses (Bass, Cattin, & Wittink, 1977). Regardless of the effect, firm profitability warrants use of a control. Finally, because three different industries were included in the study, I defined two binary variables to control for institutional and other industry effects (Hill & Hansen, 1991). Both firm sales and cost of acquisitions were converted to 1983 dollars to control for inflation.

As stated earlier, data were collected on 102 firms for the 1978–82 period. With some missing data, the pooled cross-sectional time series data sets ranged in size from 490 to 505 firm-year observations. However, the pooled design rendered ordinary least squares (OLS) regression estimates biased because of enduring individual-firm characteristics that are not considered in the model, violating assumptions on independence of observations (Hannan & Young, 1977). As a result, I employed a generalized least squares (GLS) regression procedure suggested by Kmenta (1986) that corrected for the effects of autocorrelation using the Cochrane-Orcutt transformation. I analyzed four separate models for each dependent variable, the first using the unweighted proportion of top team members with finance backgrounds as an independent variable and the next three using the power-weighted proportions. The unstandardized beta coefficients of these four variables were examined to determine if measures of the power-weighted proportion were better predictors of the dependent variables. No R^2s are reported because of problems with their interpretation in GLS regressions (Kmenta, 1986).[8]

Table 6 provides descriptive statistics on the variables used in study 3. Although caution is warranted in interpreting the correlation matrix because of the pooling of the data, the pattern of association is consistent with the hypothesis. The results of the GLS regression analysis for each of the three dependent variables reported in Table 7 offer a much stronger test. Both the unweighted and the three power-weighted measures of the proportion of top team members with finance backgrounds were positively associated with the number of SIC codes, although the association with the unweighted proportion was only marginally significant. The power-weighted proportions were also significant in predicting the cost of acquisitions (ownership power was marginally significant), and the unweighted proportion was not. Finally, finance backgrounds appeared to be unrelated to the total number of acquisitions made, although the sign of the coefficient was negative for the unweighted proportion and positive for the weighted proportions. In all three sets of regression equations, consideration of power yielded stronger results,

[8] GLS models relax two key assumptions of OLS models; these assumptions are that the variance of the error terms must be equal and the covariance between the error terms must be zero. When these assumptions are relaxed, it becomes problematic to interpret measures of goodness of fit, such as R^2, that depend on the variance.

TABLE 6
Descriptive Statistics and Correlations of All Variables in Study 3[a]

Variables[b]	Means	s.d.	Correlations[c]									
			1	2	3	4	5	6	7	8	9	10
1. Number of four-digit SIC codes	7.75	7.30										
2. Cost of acquisitions, in millions	13.32	99.22	.21									
3. Number of acquisitions	0.30	0.76	.29	.41								
4. Natural logarithm of sales	6.84	1.39	.44	.15	.22							
5. Return on equity	14.39	13.85	−.10	−.02	.03	−.03						
6. Computer industry	0.35	0.48	−.16	−.00	.06	−.25	.04					
7. Chemical industry	0.35	0.48	.45	.08	.11	.20	−.05	−.55				
8. Proportion of TMT with finance backgrounds	0.17	0.20	.23	.07	.02	.17	−.03	−.00	.04			
9. Structural power–weighted proportion of TMT with finance backgrounds	0.16	0.21	.30	.16	.09	.23	−.02	−.02	.07	.93		
10. Ownership power–weighted proportion of TMT with finance backgrounds	0.15	0.21	.30	.12	.05	.23	−.03	−.03	.07	.94	.94	
11. Prestige power–weighted proportion of TMT with finance backgrounds	0.16	0.22	.28	.16	.09	.23	−.02	.01	.07	.88	.91	.88

[a] $N = 505$, except for correlations of the number of four-digit SIC codes, where $N = 490$.
[b] TMT = top management team.
[c] Correlations greater than .09 are significant at $p < .05$.

TABLE 7
Results of Generalized Least Squares Regression Analyses[a]

Variables	Number of SIC Codes[b]				Cost of Acquisitions[c]				Number of Acquisitions[c]			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Intercept	−.53**	−.54***	−.54***	−.55***	−11.97*	−11.31†	−11.10†	−10.87†	−.11*	−.11*	−.11*	−.11*
	(.16)	(.16)	(.16)	(.16)	(5.96)	(5.80)	(5.89)	(5.93)	(.05)	(.05)	(.05)	(.05)
Sales	.96***	.96***	.97***	.96***	6.28*	4.84*	5.71*	4.93*	.06***	.06***	.06***	.06***
	(.07)	(.08)	(.08)	(.07)	(2.44)	(2.31)	(2.41)	(2.29)	(.01)	(.01)	(.01)	(.01)
Return on equity	−.02*	−.02*	−.02*	−.02*	−.28	−.27	−.25	−.28	.00	.00	.00	.00
	(.01)	(.01)	(.01)	(.01)	(.27)	(.26)	(.26)	(.27)	(.00)	(.00)	(.00)	(.00)
Computer industry	1.82**	2.17***	2.09***	2.06***	1.23	−.54	−2.70	−.45	.30**	.26**	.27**	.27**
	(.61)	(.63)	(.62)	(.60)	(17.84)	(17.31)	(17.30)	(16.90)	(.10)	(.10)	(.10)	(.10)
Chemical industry	6.64***	6.49***	6.32***	6.37***	36.75†	34.71†	35.19†	34.55†	.24*	.20*	.22*	.20*
	(.71)	(.74)	(.74)	(.71)	(20.93)	(20.13)	(20.84)	(19.97)	(.09)	(.10)	(.10)	(.10)
Proportion of TMT with finance backgrounds	1.90†				21.03				−.13			
	(.99)				(30.17)				(.18)			
Structural power–weighted proportion TMT with finance backgrounds		2.58**				83.54**				.01		
		(.98)				(29.13)				(.18)		
Ownership power–weighted proportion TMT with finance backgrounds			2.81**				49.34†				.00	
			(.97)				(28.89)				(.18)	
Prestige power–weighted proportion TMT with finance backgrounds				2.31**				62.68*				.00
				(.80)				(25.93)				(.16)

[a] Standard errors appear in parentheses.
[b] N = 490.
[c] N = 505.
† p < .10
* p < .05
** p < .01
*** p < .001

with clearly significant results in two cases. In contrast, and somewhat surprisingly, the simple proportion of top team members with finance backgrounds was only marginally associated with diversification posture and not at all with acquisition activity. This weak result may reflect the difficulty relatively unpowerful top managers with financial backgrounds face in trying to achieve financial synergies in highly diversified firms (Hoskisson & Hitt, 1990).

The results also indicate that the three power types examined have roughly equal effects on diversification posture but do not have equal effects on acquisition activity. For example, the coefficient for ownership power was only marginally significant, and structural power appeared to be most strongly associated with the cost of acquisitions. The relatively weak result for ownership power is consistent with the results of study 2, which suggested that owners may be less involved than nonowners with the actual management of firms. Hence, although a stronger statement awaits further research, it does appear that ownership power may not translate into active involvement in strategic decision making in the same way that structural and prestige power do.

Overall, the results of study 3 support the contention that top managers are able to influence strategic outcomes to the extent they have power. In addition, this study provides evidence for the predictive validity of the power dimensions developed.

DISCUSSION AND CONCLUSIONS

In this article, I have argued that top managers' power plays a major role in strategic choice. However, although research in strategic management has generally acknowledged this proposition as a reality, empirical work has tended to lag because of difficulties in conceptualizing and measuring power in top management teams. Hence, a central goal of this research was the development and validation of a set of power dimensions and their measurement. The results of three studies strongly supported the validity and reliability as research constructs of structural, ownership, and prestige power. Expert power received moderate support. Study 1 demonstrated that the four dimensions were unidimensional, internally consistent, and discriminantly valid. In study 2, the objective power measures were correlated with a perceived power measure and found to be positively and significantly related in three of four cases, evidence of convergent validity. Finally, study 3 provided support for the predictive validity of three of the four power measures in a test of the association between top managers' functional backgrounds in finance and firm diversification posture and acquisition activity. Although this is clearly only a first attempt, and more work may be needed to refine each of the measures, the four dimensions of top managers' power appear to offer researchers both a framework and a measurement methodology that may greatly facilitate empirical work in this area.

The relationship between managerial characteristics and strategic actions has been the subject of much investigation in recent years (Hambrick, 1989). Much of this work has been based on the straightforward idea that a firm's top managers affect its strategy. The results of the studies reported here clearly suggest that such an upper-echelons theory (Hambrick & Mason, 1984) should be extended to encompass the idea that managerial power affects the association between top managers and organizational outcomes. The ability of top managers to affect firm strategy depends to a great extent on whether they have the requisite power to be influential. As study 3 indicated, variables assessing managerial characteristics that do not encompass the distribution of power among top managers are not as predictive as variables that are adjusted for power. Although in some ways this is not all that surprising a result, this extension to upper-echelons theory is new. This finding is important because it confirms anecdotal evidence on the importance of power in top management teams and suggests that a realistic view of top managers' strategy making must take the distribution of power in a firm into account. Thus, it charges other researchers in this area to consider the role of power in their work.

In a related vein, the results of this study suggest that researchers need to consider both a firm's CEO and the rest of its dominant coalition in assessing if and how top managers affect organizational outcomes. To limit inquiry to only the CEO of a firm is to make an implicit assumption on the distribution of power at the top. Inclusion of power as a variable explicitly recognizes that such an assumption is unwarranted; empirical examination of power allows the data to govern the resolution of the issue. Hence, in both a theoretical and an empirical sense, consideration of power in studies of the association between top managers and organizational outcomes may represent a significant contribution to this research stream.

There are several limitations to the approach to measuring power outlined in this article. First, although I expect the power dimensions to be important in most instances, situational differences may shift the balance of power. For example, a new CEO may begin his or her tenure with a mandate for change, upsetting existing power arrangements. However, it is also likely that a CEO's mandate is somewhat dependent on both structural and ownership power. This dependency suggests a second limitation, namely, that no attempt was made here to identify the factors that affect the relative importance of types of power. It may be that expert power is most salient when a firm is confronted with uncertainty from its task environment, and ownership power is predominant when the board of directors creates uncertainty. Some may argue, however, that structural power is typically of central importance because of the legitimate authority it bestows. The results of studies 2 and 3 do suggest that situational differences in the importance of types of power exist. What accounts for these differences remains an empirical question.

Third, although the conceptualization of power presented here may be

relevant in many contexts, the actual measures suggested assume use of a sample of corporate organizations. The ownership power construct is the most clearly context-specific. Nonprofit organizations do not issue stock, rendering measures that use shareholdings ineffective. However, the concept of ownership power remains relevant because top managers in nonprofit organizations must still work with boards of governors or trustees who may have some influence in decision making. In addition, the institutional environment may be more important for such organizations, enhancing the importance of prestige power. So, because different types of organizations create different types of contingencies, some adjustment of the specific measures of power may be required. However, the four power dimensions themselves are likely to be relevant in most organizational settings.

A final limitation concerns the role of political "skill and will" (Mintzberg, 1983). Power has essentially been defined as the capacity to influence strategic choices. I did not address the actual exercise of power and the issues that go with it, which include managers' political acumen and willingness to use power in hand. Nevertheless, although skill and will are important, managers who have reached the top are typically highly skilled politically (Hannan & Freeman, 1977; March, 1984), reducing the importance of political acumen as a differentiating factor.

The present work can help advance future research in several ways. Perhaps most important, studies of the association between managers and strategies can use the proposed measurement methodology. For example, although scholars have investigated many of the original propositions (Gupta, 1984; Hambrick & Mason, 1984; Szilagyi & Schweiger, 1984), few have adopted a top team level of analysis, and none have included power in their formulations. Because all the power dimensions can be measured using archival data sources, it should be possible to incorporate managerial power into studies such as these. In addition, refinements to the measures suggested here will be important in developing this research stream.

The importance of top managers' power to organizations suggests that it may be interesting to examine the distribution of power in teams. In some teams, power may reside in one or two key individuals; other teams may exhibit a more dispersed power distribution. There are several interesting questions in this regard: How stable is the distribution of power over time? What are the consequences of institutionalized power distributions? How does the balance of power change? What is the relationship between the distribution of power and executive succession? It seems clear that there are abundant research opportunities here.

To address such questions requires a recognition of the role of power in strategic choice and a means of incorporating power in subsequent research. I have tried to develop objective measures of power that may help accomplish this goal. Scholars of strategy and organization need to address the issue of top managers' power, especially as theoretical formulations that suggest a major role for power in strategy making are developed and extended.

REFERENCES

Aldrich, H., & Herker, D. 1977. Boundary spanning roles and organization structure. ***Academy of Management Review,*** 2: 217–230.

Allen, M. P. 1974. The structure of intraorganizational elite cooptation: Interlocking corporate directorates. ***American Sociological Review,*** 39: 393–406.

Allison, G. T. 1971. ***Essence of decision: Explaining the Cuban missile crisis.*** Boston: Little, Brown.

Bagozzi, R. 1980. ***Causal models.*** New York: Wiley.

Bantel, K., & Jackson, S. 1989. Top management and innovations in banking: Does the composition of the top team make a difference? ***Strategic Management Journal,*** 10: 107–124.

Bass, F. M., Cattin, P., & Wittink, D. 1977. Market structure and industry influence on profitability. In H. Thorelli (Ed.), ***Strategy + structure = performance:*** 181–201. Bloomington, IN: Indiana University Press.

Baysinger, B. C., & Hoskisson, R. E. 1989. Diversification strategy and R&D intensity in multiproduct firms. ***Academy of Management Journal,*** 32: 310–332.

Baysinger, B. D., Kosnik, R. D., & Turk, T. A. 1991. Effects of board and ownership structure on corporate R&D strategy. ***Academy of Management Journal,*** 34: 205–214.

Berg, N. A. 1969. What's different about conglomerate management? ***Harvard Business Review,*** 47(6): 112–120.

Blau, P. M. 1964. ***Exchange and power in social life.*** New York: Wiley.

Blau, P. M., & Margulies, R. Z. 1974–75. A research replication: The reputation of American professional schools. ***Change,*** 6: 42–47.

Bower, J. L., & Doz, Y. 1979. Strategy formulation: A social and political process. In D. E. Schendel & C. W. Hofer (Eds.), ***Strategic management: A new view of business policy and planning:*** 152–165. Boston: Little, Brown.

Brass, D. J. 1984. Being in the right place: A structural analysis of individual influence in an organization. ***Administrative Science Quarterly,*** 29: 518–539.

Campbell, D. T., & Fiske, D. W. 1959. Convergent and discriminant validation by the multitrait-multimethod matrix. ***Psychological Bulletin,*** 56: 81–105.

Carter, E. 1971. The behavioral theory of the firm and top-level corporate decisions. ***Administrative Science Quarterly,*** 16: 413–428.

Chaganti, R., & Sambharya, R. 1987. Strategic orientation and characteristics of upper management. ***Strategic Management Journal,*** 8: 393–401.

Chandler, A. D. 1962. ***Strategy and structure.*** Cambridge, MA: M.I.T. Press.

Child, J. 1972. Organizational structure, environment, and performance: The role of strategic choice. ***Sociology,*** 6: 1–22.

Clement, W. 1975. Inequality of access: Characteristics of the Canadian corporate elite. ***Canadian Review of Sociology and Anthropology,*** 12: 33–52.

Coleman, R. 1973. ***Report on college characteristics.*** Cambridge, MA: Harvard-MIT Joint Center for Urban Affairs.

Crozier, M. 1964. ***The bureaucratic phenomenon.*** Chicago: University of Chicago Press.

Cyert, R. M., & March, J. G. 1963. ***A behavioral theory of the firm.*** Englewood Cliffs, NJ: Prentice-Hall.

Dalton, G. W., Barnes, L. B., & Zaleznik, A. 1968. ***The distribution of authority in formal***

organizations. Boston: Harvard University, Division of Research, Graduate School of Business Administration.

D'Aveni, R. A. 1990. Top managerial prestige and organizational bankruptcy. ***Organization Science,*** 1: 123–142.

Dearborn, D. C., & Simon, H. A. 1958. Selective perceptions: A note on the departmental identification of executives. ***Sociometry,*** 21: 140–144.

Domhoff, G. W., 1967. ***Who's running America?*** Englewood Cliffs, NJ: Prentice-Hall.

Eisenhardt, K. 1988. Agency- and institutional-theory explanations: The case of retail sales compensation. ***Academy of Management Journal,*** 31: 488–511.

Eisenhardt, K., & Bourgeois, L. J. 1988. Politics of strategic decision making in high-velocity environments: Toward a midrange theory. ***Academy of Management Journal,*** 31: 737–770.

Emerson, R. M. 1962. Power-dependence relationships. ***American Sociological Review,*** 27: 31–41.

Finkelstein, S. 1988. ***Managerial orientations and organizational outcomes: The moderating roles of managerial discretion and power.*** Unpublished doctoral dissertation, Columbia University.

Finkelstein, S., & Hambrick, D. C. 1989. Chief executive compensation: A study of the intersection of market and political processes. ***Strategic Management Journal,*** 10: 121–134.

Fligstein, N. 1987. The intraorganizational power struggle: Rise of finance personnel to top leadership in large corporations, 1919–1979. ***American Sociological Review,*** 52: 44–58.

Freeman, R. E. 1984. ***Strategic management: A stakeholder approach.*** Boston: Pitman.

French, J. R. P., Jr., & Raven, B. 1959. The bases of social power. In D. Cartwright (Ed.), ***Studies in social power:*** 150–167. Ann Arbor: Institute for Social Research, University of Michigan.

Galbraith, J. 1973. ***Designing complex organizations.*** Reading, MA: Addision-Wesley.

Giddens, A. 1972. Elites in the British class structure. ***Sociological Review,*** 20: 345–372.

Gray, B., & Ariss, S. S. 1985. Politics and strategic change across organization life cycles. ***Academy of Management Review,*** 10: 707–723.

Gupta, A. K. 1984. Contingency linkages between strategy and general manager characteristics. ***Academy of Management Review,*** 9: 399–412.

Gupta, A. K., & Govindarajan, V. 1984. Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation. ***Academy of Management Journal,*** 27: 25–41.

Hage, J., & Dewar, R. 1974. Elite values versus organizational structure in predicting innovation. ***Administrative Science Quarterly,*** 18: 279–290.

Hambrick, D. C. 1981. Environment, strategy, and power within top management teams. ***Administrative Science Quarterly,*** 26: 252–275.

Hambrick, D. C. 1989. Guest editor's introduction: Putting top managers back into the strategy picture. ***Strategic Management Journal,*** 10 (special issue): 5–16.

Hambrick, D. C., & D'Aveni, R. A. 1990. ***Top team deterioration as part of the downward spiral of large corporate bankruptcies.*** Working paper, Graduate School of Business, Columbia University.

Hambrick, D. C., & Finkelstein, S. 1987. Managerial discretion: A bridge between polar views on organizations. In B. M. Staw & L. L. Cummings (Eds.), ***Research in organizational behavior,*** vol. 9: 369–406. Greenwich, CT: JAI Press.

Hambrick, D. C., & Mason, P. 1984. Upper echelons: The organization as a reflection of its top managers. ***Academy of Management Review,*** 9: 193–206.

Hannan, M., & Freeman, J. F. 1977. The population ecology of organizations. ***American Journal of Sociology,*** 82: 929–964.

Hannan, M., & Young, A. 1977. Estimation in multi-wave panel models: Results on pooling cross-sections and time series. In D. Heise (Ed.), ***Sociological methodology:*** 52–83. San Francisco: Jossey-Bass.

Harrison, J. R., Torres, D. L., & Kukalis, S. 1988. The changing of the guard: Turnover and structural change in the top management positions. ***Administrative Science Quarterly,*** 33: 211–232.

Hickson, D. J., Lee, C. A., Schneck, R. E., & Pennings, J. M. 1971. A strategic contingencies theory of intraorganizational power. ***Administrative Science Quarterly,*** 16: 216–229.

Hill, C. W. L., & Hansen, G. S. 1991. A longitudinal study of the cause and consequences of changes in diversification in the U.S. pharmaceutical industry 1977–1986. ***Strategic Management Journal,*** 12: 187–200.

Hills, F. S., & Mahoney, T. A. 1978. University budgets and organizational decisions. ***Administrative Science Quarterly,*** 23: 454–464.

Hinings, C. R., Hickson, D. J., Pennings, J. M., & Schneck, R. E. 1974. Structural conditions of intraorganizational power. ***Administrative Science Quarterly,*** 19: 22–44.

Hitt, M. A., & Ireland, R. D. 1985. Corporate distinctive competence, strategy, industry and performance. ***Strategic Management Journal,*** 6: 273–294.

Hitt, M. A., Ireland, R. D., & Palia, K. A. 1982. Industrial firms' grand strategy and functional importance: Moderating effects of technology and uncertainty. ***Academy of Management Journal,*** 25: 265–298.

Hitt, M. A., Ireland, R. D., & Stadter, G. 1982. Functional importance and company performance: Moderating effects of grand strategy and industry type. ***Strategic Management Journal,*** 3: 315–330.

Hitt, M. A., & Tyler, B. B. 1991. Strategic decision models: Integrating different perspectives. ***Strategic Management Journal,*** 12: 327–352.

Hoskisson, R. E., & Hitt, M. A. 1990. Antecedents and performance outcomes of diversification: A review and critique of theoretical perspectives. ***Journal of Management,*** 16: 461–509.

Kanter, R. M. 1977. ***Men and women of the corporation.*** New York: Basic Books.

Katz, D., & Kahn, R. L. 1966. ***The social psychology of organizations.*** New York: Wiley.

Kerlinger, F. N. 1973. ***Foundations of behavior research.*** New York: Holt, Rinehart, and Winston.

Kmenta, J. 1986. ***Elements of econometrics.*** New York: Macmillan.

Kosnik, R. D. 1987. Greenmail: A study of board performance in corporate governance. ***Administrative Science Quarterly,*** 32: 163–185.

Kotter, J. P. 1982. ***The general managers.*** New York: Free Press.

McEachern, W. A. 1975. ***Managerial control and performance.*** Lexington, MA: Lexington Books.

MacMillan, I. C. 1978. ***Strategy formulation: Political concepts.*** St. Paul: West Publishing Company.

March, J. G. 1966. The power of power. In D. Easton (Ed.), ***Varieties of political theory:*** 39–70. Englewood Cliffs: NJ: Prentice-Hall.

March, J. G. 1984. Notes on ambiguity and executive compensation. ***Scandinavian Journal of Management Studies,*** August: 53–64.

Miles, R. E., & Snow, C. C. 1978. ***Organizational strategy, structure, and process.*** New York: McGraw-Hill.

Miles, R. H., & Cameron, K. 1982. ***Coffin nails and corporate strategies.*** Englewood Cliffs, NJ: Prentice-Hall.

Mintzberg, H. 1973. ***The nature of managerial work.*** New York: Harper & Row.

Mintzberg, H. 1983. ***Power in and around organizations.*** Englewood Cliffs, NJ: Prentice-Hall.

Mintzberg, H., Raisinghani, D., & Theoret, A. 1976. The structure of unstructured decision processes. ***Administrative Science Quarterly,*** 21: 246–275.

Montgomery, C. A. 1982. The measurement of firm diversification: Some new empirical evidence. ***Academy of Management Journal,*** 25: 299–307.

Murray, E. A. 1978. Strategic choice as a negotiated outcome. ***Management Science,*** 24: 960–972.

Norburn, D., & Birley, S. 1986. ***An empirical test of upper-echelons theory.*** Paper presented at the annual meeting of the Academy of Management, Chicago.

O'Reilly, C. A., & Flatt, S. 1989. ***Executive team demography, organizational innovation and firm performance.*** Working paper, University of California, Berkeley.

Palepu, K. 1985. Diversification strategy, profit performance, and the entropy measure. ***Strategic Management Journal,*** 6: 239–255.

Pennings, J. M. 1980. ***Interlocking directorates: Origins and consequences of connections among organizations' boards of directors.*** San Francisco: Jossey-Bass.

Perrow, C. 1970. Departmental power in industry. In M. Zald (Ed.), ***Power in organizations:*** 59–89. Nashville: Vanderbilt University Press.

Pettigrew, A. 1973. ***The politics of organizational decision making.*** London: Tavistock.

Pfeffer, J. 1972. Size and composition of corporate boards of directors: The organization and its environment. ***Administrative Science Quarterly,*** 17: 218–228.

Pfeffer, J. 1981. ***Power in organizations.*** Marshfield, MA: Pitman.

Pfeffer, J., & Moore, W. L. 1980. Power in university budgeting: A replication and extension. ***Administrative Science Quarterly,*** 25: 637–653.

Pfeffer, J., & Salancik, G. R. 1974. Organization decision making as a political process: The case of a university budget. ***Administrative Science Quarterly,*** 19: 135–151.

Pfeffer, J., & Salancik, G. R. 1978. ***The external control of organizations: A resource dependence perspective.*** New York: Harper & Row.

Pfeffer, J., Salancik, G. R., & Leblebici, H. 1976. The effect of uncertainty on the use of social influence in organizational decision-making. ***Administrative Science Quarterly,*** 21: 227–245.

Pierson, G. W. 1969. ***The education of American leaders.*** New York: Praeger.

Pitts, R. A., & Hopkins, D. 1982. Firm diversity: Conceptualization and measurement. ***Academy of Management Review,*** 7: 620–629.

Porter, M. E. 1980. ***Competitive strategy.*** New York: Free Press.

Provan, K. G. 1980. Recognizing, measuring, and interpreting the potential/enacted power distinction in organization research. ***Academy of Management Review,*** 5: 549–559.

Rumelt, R. P. 1974. ***Strategy, structure, and economic performance.*** Boston: Division of Research, Graduate School of Business Administration, Harvard University.

Salancik, G. R., & Pfeffer, J. 1974. The bases and uses of power in organizational decision making: The case of a university. ***Administrative Science Quarterly,*** 19: 453–473.

Salter, M. S., & Weinhold, W. A. 1979. Diversification via acquisition: Creating value. ***Harvard Business Review,*** 56(4): 166–176.

Scott, W. R., & Meyer, J. W. 1983. The organization of societal sectors. In J. W. Meyer & W. R. Scott (Eds.), ***Organizational environments: Ritual and rationality:*** 129–153. Beverly Hills, CA: Sage.

Selznick, A. 1957. ***Leadership in administration: A sociological interpretation.*** New York: Harper & Row.

Shukla, R. K. 1977. ***A contingency model of influence dispersion and the bases of power in organizational decision making.*** Unpublished doctoral dissertation, University of Wisconsin-Madison.

Simon, H. A. 1957. The compensation of executives. ***Sociometry,*** 20: 32–35.

Smith, M., & White, M. C. 1987. Strategy, CEO specialization, and succession. ***Administrative Science Quarterly,*** 32: 263–280.

Snow, C. C., & Hrebiniak, L. G. 1980. Strategy, distinctive competence, and organizational performance. ***Administrative Science Quarterly,*** 25: 307–335.

Song, J. H. 1982. Diversification strategies and the experience of top executives of large firms. ***Strategic Management Journal,*** 3: 377–380.

Szilagyi, A. D., & Schweiger, D. M. 1984. Matching managers to strategies: A review and suggested framework. ***Academy of Management Review,*** 9: 626–637.

Thompson, J. D. 1967. ***Organizations in action.*** New York: McGraw-Hill.

Tushman, M. L. 1977. Approaches to organizations: A review and rationale. ***Academy of Management Review,*** 2: 206–216.

Tushman, M. L., & Romanelli, E. 1983. Uncertainty, social location and difference in decision making. ***Management Science,*** 28: 12–23.

Tushman, M. L., & Romanelli, E. 1985. Organization evolution: A metamorphosis model of convergence and reorientation. In L. L. Cummings & B. M. Staw (Eds.), ***Research in organizational behavior,*** vol. 7: 171–222. Greenwich, CT: JAI Press.

Tushman, M. L., & Scanlan, T. 1981. Characteristics and external orientation of boundary spanning individuals. ***Academy of Management Journal,*** 24: 83–98.

Tushman, M. L., Virany, B. L., & Romanelli, E. 1985. Executive succession, strategy reorientation, and organization evolution. ***Technology in Society,*** 7: 297–314.

Useem, M. 1979. The social organization of the American business elite and participation of corporation directors in the governance of American institutes. ***American Sociological Review,*** 44: 553–572.

Useem, M., & Karabel, J. 1986. Pathways to top corporate management. ***American Sociological Review,*** 51: 184–200.

U.S. News & World Report. 1987. America's best colleges. October 26: 49–70.

Van de Ven, A. H., & Ferry, D. L. 1980. ***Measuring and assessing organizations.*** New York: Wiley.

Whistler, T. L., Meyer, H., Baum, B. H., & Sorensen, P. F., Jr. 1967. Centralization of organizational control: An empirical study of its meaning and measurement. ***Journal of Business,*** 40: 10–26.

Yetton, P., & Bottger, P. 1982. Individual versus group problem-solving: An empirical test of a best member strategy. ***Organizational Behavior and Human Performance,*** 29: 307–321.

Zald, M. N. 1969. The power and functions of boards of directors: A theoretical synthesis. ***American Journal of Sociology,*** 74: 97–111.

APPENDIX A

Elite Educational Institutions

Amherst College
Brown University
Carleton College
Columbia University
Cornell University
Dartmouth College
Grinnell College
Harvard University
Haverford College
Johns Hopkins University
Massachusetts Institute of Technology
New York University
Northwestern University
Oberlin College
Pomona College
Princeton University
Stanford University
Swarthmore College
United States Military Academy
United States Naval Academy
University of California, Berkeley
University of California, Los Angeles
University of Chicago
University of Michigan
University of Pennsylvania
Wellesley College
Wesleyan University
Williams College
Yale University

APPENDIX B

Perceptual Power Measure

"Below is a list of executives and their titles at (*name of firm*) in 1981. Please indicate the amount of influence each of these people generally had in affecting the outcomes of each of the types of decisions listed below. Record your responses in the space provided. If your name is included in the list, be sure to rate yourself."

Responses were on a seven-point format anchored by 1, "no influence," 4, "moderate influence," and 7, "total influence." Respondents rated five executives on three decision types: (1) major resource allocation decisions (e.g., capital expenditures or large promotional outlays), (2) organizational redesign (e.g., changing formal structure or selecting and assigning executives), and (3) acquiring or divesting major business units or entering or exiting major markets.

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