Strategic Management Journal
Strat. Mgmt. J., **29**: 1155–1177 (2008)
Published online in Wiley InterScience (www.interscience.wiley.com) DOI: 10.1002/smj.704
Received 18 October 2004; *Final revision received 26 March 2008*

WHAT DO THEY KNOW? THE EFFECTS OF OUTSIDE DIRECTOR ACQUISITION EXPERIENCE ON FIRM ACQUISITION PERFORMANCE

MICHAEL L. MCDONALD,[1]* JAMES D. WESTPHAL,[2] and MELISSA E. GRAEBNER[3]
[1] *College of Business, University of Central Florida, Orlando, Florida, U.S.A.*
[2] *Ross School of Business, University of Michigan, Ann Arbor, Michigan, U.S.A.*
[3] *McCombs School of Business, University of Texas at Austin, Austin, Texas, U.S.A.*

This article contributes to the literature on board effectiveness by being perhaps the first to systematically examine how the nature of outside directors' prior experience, and resulting expertise, will influence the performance of a focal firm's strategic initiatives. Our theoretical model is grounded in the psychological literature on expertise and its role in group decision making effectiveness. We focus on outside director expertise in acquisition decision making, and its implications for the performance of the acquisitions of a focal firm. Our conceptual framework indicates that directors will develop expertise in making particular kinds of acquisition decisions (e.g., related or unrelated acquisitions or acquisitions in specific industries or product markets) through their past experiences at other firms with decisions about those specific types of acquisitions, and we predict that this experience and expertise will have positive effects on the performance of a focal firm's acquisitions. We extend our theoretical model to consider the conditions under which relevant director experience will prove most beneficial. Our model predicts that outside director acquisition expertise will deliver the greatest benefits when the focal firm's board is independent from management. We find empirical support for all of our hypotheses. In considering how and when director experience and resulting expertise may influence the performance of corporate acquisitions, our theory and results help to highlight a potential second main focus for research on the long-standing question of what factors render boards of directors effective.

INTRODUCTION

The question of what board characteristics render boards best able to make a positive impact on firm-level performance outcomes is among the most extensively researched topics in the large body of scholarship on corporate boards of directors. Agency theory and related behavioral perspectives that currently dominate the management literature on board effectiveness focus on boards' 'decision control' role and argue that boards will have positive performance effects to the extent that they are 'independent' from management (Fama and Jensen, 1983; Bhagat and Black, 2002). Independent boards are expected to have a beneficial impact on performance because they are more willing to interject themselves into strategic decision making to prevent firm managers from pursuing ill-conceived strategic initiatives. Prevailing theory suggests that greater independence can be achieved by instituting particular changes in board structure and composition, including, for example, the separation of the CEO and board chair positions and the appointment of more outside directors; these actions are believed to increase directors' propensities to intervene in corporate affairs (Daily, Dalton, and Cannella, 2003; Dalton *et al.*, 1998).

Keywords: boards of directors; board effectiveness; director experience; director expertise; board independence; acquisitions
* Correspondence to: Michael L. McDonald, University of Central Florida, College of Business, Management Department, P.O. Box 161400, Orlando, FL 32816, U.S.A.
E-mail: mmcdonald@bus.ucf.edu

While a number of studies do suggest that certain kinds of policy outcomes, such as stock option repricing and greenmail, that would seem to be inconsistent with shareholder interests are less likely to be pursued to the extent that a firm's board has characteristics that enhance director independence (Westphal and Zajac, 1995; Finkelstein and Hambrick, 1996; Pollock, Fischer, and Wade, 2002)[1], a now extensive collection of empirical studies has failed to support the bedrock agency theory proposition that board independence leads to superior overall firm performance. A recent comprehensive meta-analysis by Dalton and colleagues (1998) concluded that board independence is not consistently associated with better firm performance, and recent narrative reviews of the literature have drawn similar conclusions (Chatterjee and Harrison, 2001; Bhagat and Black, 2002). In light of these findings, a number of prominent board scholars have advocated that board researchers consider how broad classes of board attributes other than board independence might influence firm-level performance outcomes (Daily *et al*., 2003; Hillman and Dalziel, 2003).

Board decision control is certainly not the only role through which outside directors might ultimately influence firm-level performance outcomes. In their seminal discussion of the central functions of boards of directors, Pfeffer and Salancik (1978) described how outside directors also play the role of 'advisors and counselors' to a company's CEO, and at least a few recent discussions of board effectiveness have considered how directors might also make substantive contributions to firm performance through the provision of advice and counsel (e.g., Hillman and Dalziel, 2003; Westphal, 1999). However, there has been relatively little recent systematic consideration of specific board member characteristics that would render directors best able to effectively execute their advice and counsel functions. Some board scholars have at least suggested that directors will be better advisors to the extent that they have the 'right' kinds of knowledge and expertise (e.g., Pfeffer and Salancik, 1978; Carpenter and Westphal, 2001; Hillman and Dalziel, 2003). However, there have been few, if any, systematic efforts to conceptually elaborate this basic notion by delineating the nature and sources of directors' expertise, and by describing how that expertise might be linked to the relative success of specific firm strategic actions. There have been still fewer *empirical* studies of theses issues.[2] By extension, little attention has been given to the boundary conditions under which director expertise might have stronger or weaker effects on performance outcomes.

This article seeks to address these important issues. We draw on the psychological literature on expertise (see Ericsson and Lehmann, 1996; VanLehn, 1996 for reviews) and its role in complex decision making by groups (see Bunderson, 2003 for a review) to develop a theoretical model that delineates how the nature of outside directors' prior professional experiences, and the knowledge and expertise they acquire from those experiences, will influence the performance of a focal firm's specific strategic initiatives. Although we believe that the general principles derived from our theory might be usefully applied to a wide range of types of strategic actions, in this study we focus our attention on a specific kind of strategic initiative—firm acquisitions. We focus on acquisition

[1] There is also evidence that independent boards are more likely to fire the CEO during periods of poor performance (Boeker, 1992), and to select successors who are outsiders (Cannella and Lubatkin, 1993) or who are demographically different from their predecessor (Zajac and Westphal, 1996). Extant research further indicates that firm managers actively seek to minimize board independence. Westphal and Zajac (1995), for example, showed how firm managers work to reduce board independence through their influence over the director selection process, with significant consequences for executive compensation policy. Specifically, when boards lacked structural independence from management, (e.g., due to combining the CEO and board chair positions), CEOs were better able to appoint demographically similar new directors who were likely to be biased toward them in making performance attributions, thus leading to larger pay increases for the CEO despite mediocre firm performance (see also Belliveau, O'Reilly, and Wade, 1996). Westphal and Zajac (1997) provided evidence of a kind of generalized reciprocity among corporate leaders in which CEOs tend to support each other's discretion over corporate policy by resisting the adoption of board reforms that would enhance the board's independence from management at companies where they serve as outside directors.

[2] It should be acknowledged here that prior research has considered a number of kinds of implications of executives' experiences on other boards that are qualitatively distinct from the performance effects that we focus on. A study by Westphal and Zajac (1997), for example, showed how CEOs' experiences with board reforms at their own board influenced their willingness to enact reforms at other boards where they served as outside directors. Research on the diffusion of corporate policies through board interlock ties has examined how directors' knowledge of specific policies acquired from their experiences on other boards can explain policy decisions at a focal firm (Haunschild, 1994; see Mizruchi, 1996 for a review). But it is important to note that this literature has given little consideration to the performance implications of directors' experience on other boards (Finkelstein and Hambrick, 1996; Westphal and Zajac, 1997).

DOI: 10.1002/smj

performance in part because it might reasonably be expected that boards will have greater effects on acquisition performance than overall firm performance, as the latter depends on a wider array of organizational and environmental factors (Hermalin and Weisbach, 2003). A few studies adopting an organizational learning perspective have considered how a focal firm's (and its manager's) own prior experiences in making acquisitions influence the performance of the firm's subsequent acquisitions (Haleblian and Finkelstein, 1999; Hayward, 2002). We consider the separate issue of how outside directors' experiences with acquisitions *at other firms*, either as directors or as firm managers, influence the performance of the acquisitions of a focal firm.[3]

Our theory describes how the more extensive and efficiently organized knowledge that outside directors acquire through their prior experiences with acquisitions at other firms will enhance their abilities to successfully meet a number of challenges that are endemic to acquisition decisions including information overload, strict time constraints, and the need to recognize the long-term strategic implications of potential focal firm acquisitions. A principal thesis of our theory is that since psychological research on the development of expert knowledge indicates that expertise tends to be specific to relatively narrow knowledge domains, we should expect that outside directors will acquire expertise in doing particular kinds of acquisitions, rather than a general expertise in undertaking all kinds of acquisitions. Our model specifically predicts that (1) a firm's acquisitions will perform better when firm outside directors have relatively high levels of experience with making acquisitions in the same product markets that a focal firm is making acquisitions in; (2) high levels of prior director experience with related acquisition decisions will be positively associated with the performance of a firm's related acquisitions, and (3) a firm's *un*related acquisitions will perform better when firm outside directors have significant prior experience with *un*related acquisitions. All three of these predictions are supported by our empirical results.

[3] Similarly, while research on corporate acquisitions in the financial economics and other literatures has considered issues related to the *target* firm's board of directors, only a few studies have considered the broad issue of the possible effects of attributes of the board of the acquiring firm (e.g., Byrd and Hickman, 1992; Subrahmanyam, Rangan, and Rosenstein, 1997).

Our conceptual model, moreover, suggests that, since research on group decision making indicates that expertise has the greatest positive effects on the quality of a group's decisions when highly knowledgeable group members have significant influence on group decision making (Littlepage *et al*., 1995; Littlepage, Robison, and Reddington, 1997; see Bunderson, 2003 for a review), we should expect that the beneficial effects of directors' experience with each type of acquisition will be amplified to the extent that a firm's board is independent from management, making it more willing to intervene in acquisition decision making (Johnson, Hoskisson, and Hitt, 1993; Judge and Zeithaml, 1992; cf., Finkelstein and Hambrick, 1996). All of our theoretical predictions in this regard are also supported by our empirical analyses.

This article contributes to the literature on board effectiveness by being, to the best of our knowledge, the first to develop a theoretical framework that delineates how the experience and expertise that outside directors bring to their role as advisors to firm management might enhance the quality of a firm's strategic decisions; it is also likely the first to empirically assess the kinds of effects of director experience, and resulting expertise, that are described by our theory. This study is also, by extension, the first to consider how board independence, which has been the main focus of contemporary perspectives on board effectiveness, might function as a moderator of the benefits of relevant outside director experience and expertise. More broadly, by considering how and when director experience and resulting expertise may influence the performance of corporate acquisitions, our theory and results highlight how scholars interested in what makes boards effective might fruitfully give greater systematic attention to directors' effectiveness in their advice and counsel role, and thereby work toward opening up a second main 'front' in research on board effectiveness.

THEORY AND HYPOTHESES

The effects of outside director acquisition experience on firm acquisition performance

We draw on the psychological literature on expertise and its impact on groups' effectiveness in making complex decisions to develop our theoretical framework. We use this literature to make

DOI: 10.1002/smj

the argument that firms will make higher quality acquisition decisions to the extent that a firm's outside directors have experience with, and resulting knowledge and expertise in, decision making about acquisitions that are similar in important respects to the ones that are being pursued by a focal firm.

Expertise and complex decision making

Expertise scholars agree that experts possess highly developed complex decision-making and problem-solving skills in their domains of expertise, and that those special capabilities arise from the nature of the knowledge that experts possess about relevant domains (Ericsson and Charness, 1994; Ericsson and Lehman, 1996; Glaser and Chi, 1988; Sternberg, 1997). Perhaps most obviously, experts simply have more extensive and complete knowledge about the critical issues in the areas in which they can claim expertise (Sternberg, 1997). However, as Sternberg notes in a recent review of cognitive perspectives on expertise 'organization of knowledge is at least as important as amount of knowledge in differentiating experts from novices in a variety of different disciplinary areas' (Sternberg, 1997: 153). In particular, expert knowledge is more efficiently organized into fewer schema categories with more information in each category (Lurigio and Carroll, 1985; Sujan, Sujan, and Bettman, 1988; Day and Lord, 1992). Theory and research on the strategies that people use to find solutions to the challenges they face indicates that people typically work to arrive at effective problem solutions using two basic strategies: (1) by applying abstract knowledge about the problem domain (e.g., abstract knowledge about the key causal relationships in that domain) to identify and select problem solutions, and (2) by applying analogical reasoning, which involves referencing specific prior challenges that they have faced, to identify effective solutions to current problems and avoid ineffective ones (e.g., Anderson, Fincham, and Douglass, 1997). The kinds of knowledge experts possess renders them especially effective at solving problems using both of these basic strategies.

Sometimes there are no suitable examples to which analogical reasoning can be applied to identify promising solutions and avoid problematic ones. In such cases, the more extensive and more efficiently organized abstract knowledge that experts possess allows them to be especially effective at solving complex problems through the application of abstract reasoning. Effective complex decision making through the application of abstract knowledge depends to some considerable degree on decision makers' abilities to sift through extremely large quantities of information (March, 1994) to (1) accurately define the problem at hand, (2) identify a range of possible solutions to the problem, and (3) choose effective solutions from the ones that they identify. Experts are especially capable of managing the 'information overload' inherent to complex decisions. Experts' more complete abstract knowledge of a relevant domain, including more complete mental models of the critical causal relationships in that domain, enhances their abilities to separate important from unimportant information (Glaser and Chi, 1988; Sternberg, 1997). In particular, the more complete and more efficiently organized abstract knowledge that experts possess renders them especially able to recognize meaningful patterns in the complex bodies of information to which they are exposed (Chase and Simon, 1973; Glaser and Chi, 1988; Sternberg, 1997). Experts, moreover, have highly developed abstract knowledge of the key underlying principles that are critical to effective decision making in a particular domain (Chi, Feltovich, and Glaser, 1981). Advanced appreciation for these underlying principles further enhances experts' capacities for differentiating between important and unimportant information.

Complex decisions can be made especially challenging because they frequently must be made within strict time constraints. The literature on expert performance (Glaser and Chi, 1988) and related management research (Day and Lord, 1992; Walsh, 1995; Carpenter and Westphal, 2001) indicates that the better organized abstract knowledge possessed by expert decision makers greatly enhances the speed and accuracy with which they can process decision-relevant information and arrive at good solutions. As Glaser and Chi (1988) suggest, at least part of the reason that experts (e.g., chess experts) can make good decisions quickly is that their more advanced abstract knowledge allows them to arrive at promising solutions with substantially less extensive cognitive search than less expert decision makers must undertake.

Complex decisions are also particularly challenging because they often require decision makers

DOI: 10.1002/smj

to evaluate the long-term implications of the alternatives they are considering. More extensive and better organized abstract knowledge also leaves those with relatively high levels of expertise especially well equipped to recognize the long-term strategic implications of the alternatives that they are contemplating. Ericsson and Charness (1994) cite seminal work on chess expertise (e.g., de Groot [1946/1978]) in this regard, describing how chess experts were able to recognize the long-term implications of alternative moves; using their highly developed abstract knowledge they 'systematically explored the consequences of promising moves and the opponent's likely countermoves by planning several moves ahead' (Ericsson and Charness, 1994: 733).

Experts are also especially adept at employing analogical reasoning to help them arrive at high-quality problem solutions and avoid ones that are likely to fail (Reeves and Weisberg, 1994). Analogical reasoning requires decision makers to draw meaningful comparisons between current challenges and specific example problems that they have been exposed to in the past (Reeves and Weisberg, 1994; Thompson, Gentner, and Loewenstein, 2000). Decision makers are better able to use analogical reasoning to the extent that they have prior experience with a relatively large number of relevant example problems that they can reference (Reeves and Weisberg, 1994). Because, as we discuss in more detail below, prior experience is a key source of expert knowledge, experts almost inevitably have a more extensive mental catalog of relevant prior problems that will allow them to more effectively apply analogical reasoning strategies in their efforts to solve current problems. Highly developed domain-specific capacities for analogical reasoning support experts' abilities to respond to the kinds of special challenges of solving complex problems, which we previously described. For example, superior analogical reasoning abilities help experts manage the time pressures that are often inherent to complex decisions, especially complex decisions in organizations. Experts can draw on relevant example problems that they have been involved in solving in the past to help them quickly identify effective solutions to similar current challenges (Ericsson and Charness, 1994). For example, chess experts can select effective moves quickly, in large part because they can reference a large catalog of prior games and recognize similarities between those past games and their current situation to directly identify the 'right' move (Glaser and Chi, 1988).

Outside director acquisition expertise and acquisition decision making

Acquisition decisions are almost inevitably complex, and thus they create all of the significant challenges for firm leaders that were described above. Like many high-level strategic choices, acquisitions may involve large amounts of ambiguous data (Coff, 2003; Jemison and Sitkin, 1986), leading to information overload. This information must often be evaluated under considerable time pressure because of concerns regarding secrecy and competitive bidding (Jemison and Sitkin, 1986). Outside directors, who must balance their board duties with a variety of other professional commitments, may find these time constraints particularly problematic. Acquisition decisions also require sophisticated, long-term strategic thinking about how unfolding events may change the value of the target firm. The target's value could increase over time through effective redeployment of resources (Capron, 1999; Capron, Dussauge, and Mitchell, 1998), but also could decline as a result of cultural conflicts and employee turnover (Buono and Bowditch, 1985; Greenwood and Hinings, 1994; Krug and Hegarty, 1997). In acquisition settings, the ability to anticipate long-term consequences may be essential to understanding whether a combination will ultimately create value. Thus, effective acquisition decision making requires leaders to think dynamically about a variety of future scenarios.

The psychological research on expertise just reviewed suggests that executives with relatively high levels of expertise in making acquisition decisions will be especially able to effectively address these decision-making challenges because they will possess extensive and efficiently organized abstract knowledge related to the identification and selection of acquisition targets. Directors with relatively high levels of expertise will be better able to manage the large quantities of complex information that are inherent to acquisition decisions. Consistent with prior discussion, these directors will possess more accurate mental models regarding cause-and-effect relationships that can help them differentiate information that is fundamentally important from information that is largely irrelevant to the acquisition decision at

DOI: 10.1002/smj

hand. Moreover, these directors' relatively high levels of expertise will enhance their abilities to see meaningful patterns in the information about prospective focal firm acquisitions that they recognize as important. These advantages should help directors with relatively high levels of expertise in making acquisition decisions to more effectively manage the 'information overload' typical of those decisions. Expert knowledge should also help directors to more successfully deal with the time constraints common in acquisition scenarios. Consistent with prior discussion, directors' expertise will enhance the speed and accuracy with which they can process decision-relevant information. Finally, the more extensive and more efficiently organized knowledge that directors with relatively high levels of acquisition expertise possess will enhance their abilities to appreciate the future strategic implications of the acquisitions that they are called on to evaluate.

Outside directors with significant expertise in making acquisitions will also be better able to effectively contribute to a firm's acquisition decisions because they will possess more fully developed capacities for identifying promising acquisitions, and avoiding problematic ones, through processes of analogical reasoning. As we discuss in more detail below, these directors are likely to have a more extensive mental catalog of relevant 'example' acquisitions that they can draw on when making current acquisition decisions. High-expertise directors' superior capacities for analogical reasoning will further enhance their abilities to overcome the key challenges of acquisition decision making including information overload, strict time constraints, and the need to recognize the long-term strategic implications of potential acquisitions.

The discussion to this point would seem to suggest that directors may possess a general expertise in pursuing acquisitions that will allow them to make positive contributions to the full range of a focal firm's acquisition decisions. The expertise literature suggests a critical qualifier to this conclusion. A central finding in the expertise literature is that expertise tends to be specific to relatively narrow knowledge domains (Ericsson and Charness, 1994; Ericsson and Lehman, 1996; Glaser and Chi, 1988; Sternberg, 1997). This suggests that executives are unlikely to possess a general expertise in undertaking acquisitions of all kinds, but will instead become experts in making decisions about particular kinds of acquisitions. In the discussion that follows, we draw on the extant acquisitions literature to identify important types of acquisitions (e.g., related or unrelated), and attendant domains of knowledge about acquisitions. We argue that, in order for directors' acquisition expertise to be beneficial to a focal firm, that expertise must be specific to the particular kinds of acquisitions that the firm is pursuing.

Important domains of outside director expertise in acquisition decision making

In this section, we make the case that (1) knowledge about acquisitions in specific industries or product markets, (2) knowledge about related acquisitions, and (3) knowledge about *un*related acquisitions represent distinct knowledge domains, and that, consequently, directors will tend to possess expertise that is specific to each of these kinds of acquisitions.

Director expertise in acquiring firms in particular product markets

The problem-solving abilities required to make effective acquisition decisions are likely to be at least partially industry-specific, for several reasons. First, acquisition decisions require detailed knowledge about the resources and capabilities of individual target firms within an industry. Second, the nature of the information that is needed to evaluate an acquisition target varies by industry. For instance, information systems compatibility may be a key issue when evaluating a target in the banking industry (Szulanski, 2000), while similarities in professional values may be central for assessing a target in the professional services sector (Greenwood and Hinings, 1994). Individuals who are unfamiliar with an industry may not only lack information about individual firms, but may also lack knowledge about what type of information would be most relevant. Third, the capabilities required to effectively negotiate an acquisition deal are also likely to vary by industry. For example, acquirers of knowledge-intensive firms may benefit from capabilities in designing performance-contingent deal structures (Coff, 1999). Because knowledge about acquisitions in particular markets represent distinct knowledge domains, executives will tend to develop expertise in undertaking decisions about acquisitions that is specific to particular industries or product markets.

DOI: 10.1002/smj

Director expertise in related and unrelated acquisitions

The abilities required to make effective acquisition decisions are also likely to vary according to whether the target's industry is related or unrelated to the buyer's. Related and unrelated acquisitions depend on distinct sources of value, which may require different skills to recognize and evaluate. Value creation in related acquisitions typically stems from operational synergies (i.e., scale or scope economies) and/or enhanced market power (Baumol, 1982; Scherer and Ross, 1990; Teece, 1980), while value creation in *un*related acquisitions depends on the realization of managerial or financial synergies (e.g., the diversification of earnings risk) (Jensen, 1986; Levy and Sarnat, 1970; Lewellen, 1971).[4] Related acquisitions may, as a result, require a greater degree of integration to realize their value, which demands increased attention to such issues as cultural compatibility during the decision process (Datta and Grant, 1990; Graebner, 2004; Haspeslagh and Jemison, 1991; Jemison and Sitkin, 1986). Because related and unrelated acquisitions represent distinct knowledge domains, we should expect that some directors are likely to develop expert knowledge in pursuing related acquisitions, while others will develop expertise in undertaking *un*related acquisitions. (Some directors may possess expertise in both kinds of acquisition decisions).

Individual outside director acquisition expertise and firm acquisition decision making

At this juncture, it is important to at least briefly consider how individual director's acquisition expertise, which has been the focus of the discussion to this point, will come to be manifested in the quality of a firm's actual acquisition decisions. While prevailing theory often emphasizes the 'decision control' role of outside directors, and at least implicitly suggests that outside directors' are only involved in the ratification (or rejection) of strategic initiatives proposed by firm managers, a number of board scholars (e.g., Westphal, 1999; Hillman and Dalziel, 2003) point out that directors routinely have more extensive involvement in strategic decision making. In the case of acquisition decisions, for example, directors may propose acquisition targets rather than simply approving (or rejecting) target firms proposed by management. Along similar lines, a number of board scholars have recently highlighted the usefulness of conceptualizing boards of directors as decision making groups (e.g., Forbes and Milliken, 1999; Hillman and Dalziel, 2003), in which outside directors share strategic decision-making responsibilities with firm managers.

Conceptualizing boards as decision-making groups allows us to bring insights from psychological research on the role of expertise in group performance to bear on the question of how the expertise possessed by individual outside directors ultimately impacts the quality of a firm's acquisition decisions. Influential theories of group performance (Hackman, 1987; Steiner, 1972) argue that the quality of group decision making is determined to some considerable degree by the extent to which group members collectively possess relevant productive resources. In groups involved in making complex decisions, knowledge resources are especially critical (Faraj and Sproull, 2000; McGrath, 1984; Littlepage *et al*., 1997). Relevant studies indicate that groups make better decisions to the extent that their individual members collectively have relatively high levels of relevant task knowledge and expertise (for reviews, see McGrath, 1984; Kerr and Tindale, 2004). In prior research, including careful recent studies of the issue, scholars have routinely conceptualized, and empirically assessed, group experience and expertise as the sum of the experience or expertise of a group's individual members (e.g., Faraj and Sproull, 2000; Reagans, Argote, and Brooks, 2005). We employ this conceptual approach in the present study.

Director acquisition experience as a source of director acquisition expertise

How might directors acquire expertise in doing the specific kinds of acquisitions (e.g., related and unrelated acquisitions) discussed above? The contemporary expertise literature emphasizes the role of experience in the development of expertise, and currently influential theories of expert performance argue that experience with a particular kind of decision is the primary contributor to the

[4] Some scholars have suggested that unrelated acquisitions offer few potential synergies relative to related acquisitions (Scherer and Ross, 1990; Wernerfelt, 1984). However, the empirical evidence regarding the performance of related vs. unrelated acquisitions is inconclusive, with most variance occurring within rather than between the two categories (see King *et al*. 2004).

DOI: 10.1002/smj

development of expert knowledge in undertaking that type of decision (see Ericsson and Charness, 1994; 1997; Ericsson and Lehmann, 1996; VanLehn, 1996 for reviews of the supporting literature). Thus, there is widespread agreement among expertise researchers that decision makers tend to accumulate expert knowledge in a particular domain to the extent that they have previously been involved in a significant number of decisions in that domain (Ericsson and Charness, 1994; 1997; Ericsson and Lehmann, 1996; VanLehn, 1996).

With increasing experience in a particular domain, decision makers accumulate both general and specific knowledge about that domain (Ericsson and Charness, 1994; 1997; Ericsson and Lehmann, 1996; VanLehn, 1996). Thus, experience is a critical contributor to the kind of extensive knowledge base that marks relatively high levels of expertise, and that supports high quality decision making. Greater experience also leads to a more complete understanding of cause-and-effect relations in a particular domain; promotes more complete abilities to distinguish decision-relevant from decision-irrelevant information; and facilitates the development of more effectively *organized* knowledge (Ericsson and Charness, 1994; 1997; Ericsson and Lehmann, 1996; VanLehn, 1996). As previously described, these efficiencies in the organization of knowledge support effective decision making by promoting experts' abilities to use abstract reasoning to (1) effectively differentiate between important and unimportant information, (2) make important judgments with greater speed and accuracy, and (3) effectively assess the strategic implications of a particular course of action. Experience with making decisions in a particular domain also expands the catalog of prior decisions that individuals can draw on as they seek to attack current problems, and thus experience enhances individuals' abilities to solve problems using analogical reasoning. Recall that decision makers are better able to use analogical reasoning to effectively solve the problems they encounter to the extent that they have prior experience with a significant number of relevant example problems that they can reference (Reeves and Weisberg, 1994).

The above discussion indicates that directors will accumulate expertise in making distinct kinds of acquisitions (e.g., unrelated acquisitions) to the extent that they were involved in a comparatively large number of acquisitions of a particular type (e.g., unrelated acquisitions) in the past. With increasing experience with a particular kind of acquisition, directors will become more knowledgeable about the critical elements of that type of acquisition. Experience will also contribute to better organized knowledge about specific kinds of acquisitions that will enhance directors' acquisition decision-making abilities by enhancing their capacities to cope with a number of challenges that are endemic to acquisition decisions including (1) information overload, (2) strict time constraints, and (3) the need to recognize the long-term strategic implications of potential acquisitions. Greater prior experience will also contribute to outside directors' abilities to effectively employ analogical reasoning to make constructive contributions to specific types of current firm acquisition decisions because it will, by definition, expand the catalog of acquisitions of a particular kind that directors can draw on.[5]

Combined with prior discussion regarding the distinct domains of acquisition knowledge, the above argument suggests that outside directors will develop expert knowledge that can be usefully applied to enhance the quality of a focal firm's acquisition decisions to the extent that directors have been previously involved in pursuing acquisitions in the same industries or product markets in which the focal firm is currently pursuing acquisitions. Thus, we offer the following hypothesis:

> *Hypothesis 1a (H1a): There will be a positive relationship between outside directors' prior experience with acquisitions in the same product markets as a focal firm's acquisitions and the performance of the firm's acquisitions.*

We similarly expect that outside directors will develop expert knowledge in making related acquisitions that will have positive effects on the performance of a firm's related acquisitions to the extent

[5] It should be recognized that the literature on learning from experience provides additional support for the basic proposition that prior experience with making particular types of acquisitions will enhance directors' abilities to make constructive contributions to a focal firm's acquisition decisions of a specific type. Organizational learning scholars have argued that firm managers can apply lessons from prior acquisition decisions to decisions about current acquisitions to the extent that there are important similarities between past and present acquisitions (Haleblian and Finkelstein, 1999). Relevant empirical studies (e.g., Haleblian and Finkelstein, 1999; Hayward, 2002) have found a positive relationship between a firm's prior experience with acquisitions that are similar in important respects to current acquisitions and the performance of a firm's current acquisitions.

DOI: 10.1002/smj

that they have been involved in a relatively large number of related acquisitions in the past, either as firm executives, or as outside directors at other companies. This suggests the following hypothesis:

> *Hypothesis 1b (H1b): There will be a positive relationship between outside directors' prior experience with related acquisitions and the performance of the firm's related acquisitions.*

Finally, outside directors will develop expert knowledge in pursuing *un*related acquisitions that will benefit the performance of a firm's *un*related acquisitions to the extent that they have been involved in a relatively large number of *un*related acquisitions in the past. This points to the following hypothesis:

> *Hypothesis 1c (H1c): There will be a positive relationship between outside directors' experience with unrelated acquisitions and the performance of the firm's unrelated acquisitions.*

Board independence as a moderator of the effects of outside director acquisition experience on firm acquisition performance

In this section we draw on additional insights from psychological research on expertise and its role in group decision making to argue that board independence will amplify the previously proposed positive effects of director acquisition expertise on firm acquisition performance. The broad intuitive rationale for this proposition is the relatively straightforward notion that outside director expertise will have more potent positive effects on the quality of a firm's acquisition decisions to the extent that outside directors exercise significant influence over the content of those decisions. As we argue in more detail below, the extant evidence indicates that board independence increases directors' capacities to influence a firm's strategic decisions, including the firm's acquisition decisions.

Psychological research on the role of expertise in group decision making provides more specific and theoretically rigorous support for the general proposition that director expertise will be more beneficial to the extent that highly expert outside directors exercise influence over firm strategic decision making. Relevant research suggests that groups often make surprisingly poor use of the relevant expertise that their members possess (Littlepage *et al*., 1995; Littlepage and Mueller, 1997; Littlepage *et al*., 1997). Scholars studying the conditions under which expertise is most fully exploited have concluded that the relative influence of high expertise members is of special importance. As Bunderson (2003) argues, 'by ... aligning intragroup influence with members' expertise, groups are better able to translate the expertise of their members into higher-quality solutions and decisions.' (Bunderson, 2003: 557). Extant empirical studies have consistently demonstrated that high levels of group member expertise have more potent positive effects on decision making quality to the extent that high-expertise group members also have relatively high levels of influence on group decisions (e.g., Littlepage *et al*., 1995; Littlepage *et al*., 1997; see Bunderson, 2003 for a review). When high-expertise group members are unable to substantively shape final decisions, the quality of a group's decisions suffers.

The theory and research reviewed here would suggest that high levels of outside director acquisition expertise will have the greatest positive effects on firm acquisition performance when outside directors are willing and able to exercise relatively high levels of influence over acquisition decisions. A number of studies indicate that board members are more actively involved in, and thus exercise greater influence over, strategic decisions to the extent that they are independent from management (e.g., Johnson *et al*., 1993; Judge and Zeithaml, 1992). While this argument emphasizes how board independence will amplify the effects of director experience, relevant strategic experience of directors could also amplify the effects of board independence. Strategic input from independent directors with high levels of relevant experience might be more credible to CEOs. Thus, independent boards with high levels of relevant experience might engender less reactance from CEOs, which has been identified in past research as a significant behavioral side effect of reforms that increase board independence (cf. Westphal, 1998).

Combining the above line of reasoning with prior discussion regarding the important domains of acquisition decision making suggests a specific set of testable hypotheses. In particular, we anticipate that the positive relationship between director expertise in undertaking acquisitions in the same product markets in which a focal firm is pursuing acquisitions will be more positive to the extent that

DOI: 10.1002/smj

the firm's board is independent from management. This suggests the following hypothesis:

Hypothesis 2a (H2a): The positive relationship between outside directors' experience with acquisitions in the same product markets as a focal firm's acquisitions and the performance of the firm's acquisitions will be more positive to the extent the firm's board is independent from management.

We, moreover, expect that director expertise in related acquisitions will have greater positive effects on the performance of a firm's related acquisitions to the extent that the firm's board is independent from management. Thus, we offer the following hypothesis:

Hypothesis 2b (H2b): The positive relationship between outside directors' experience with related acquisitions and the performance of a firm's related acquisitions will be more positive to the extent the firm's board is independent from management.

Finally, we expect that board independence will strengthen the positive link between director expertise in *un*related acquisitions and the quality of a firm's decisions regarding *un*related acquisitions. This suggests the hypothesis below:

Hypothesis 2c (H2c): The positive relationship between outside directors' experience with unrelated acquisitions and the performance of a firm's unrelated acquisitions will be more positive to the extent the firm's board is independent from management.

METHOD

Sample and data collection

The sample frame for this study includes acquisitions made by large and medium-sized U.S. industrial and service firms listed in the 1988 *Forbes* and *Fortune 500* indexes during the period 1989 to 1998, inclusive. Acquisitions were excluded from the sample if complete data on board and firm characteristics were unavailable. The final sample included 1,916 acquisitions made by 489 firms. We conducted Kolmogorov-Smirnov two-sample tests to determine whether this sample differed from the larger sample frame of acquisitions by *Fortune/Forbes 500* firms (Siegel and Castellan, 1988). There were no significant differences between the initial and final samples with respect to the dependent variable (i.e., excess stock returns from the acquisition) or any of the control variables (e.g., acquisition size, performance of the acquiring firm, number of prior acquisitions by the acquiring firm, etc.).

We obtained data on board characteristics and ownership from Disclosure, Inc.'s Compact Disclosure database, *Standard & Poor's Register of Corporations, Directors, and Executives,* and corporate proxy statements. Data on financial and operating characteristics came from COMPUSTAT. We obtained acquisition data from COMPUSTAT and the Securities Data Corporation.

Dependent variable

We measured focal acquisition performance in terms of excess stock returns, or the difference between the acquiring firm's observed return and its expected return during a specified period of time surrounding the acquisition announcement (Patell, 1976; Brown and Warner, 1985). This measure has been widely used in the acquisitions literature (King *et al.*, 2004). Moreover, abnormal announcement returns have been associated with longer-term measures of acquisition performance, including operating cash flows (Healy, Palepu, and Ruback, 1992) and likelihood of divestiture (Kaplan and Wiesbach, 1992).

In the absence of stock price effects from the acquisition announcement, stock returns are described by the following market model (Patell, 1976; Gaver, Gaver, and Battistel, 1992):

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt}$$

where R_{jt} is the return for firm j on day t, R_{mt} is the market return on day t, β_j is the beta or market-adjusted variance in stock returns for firm j, α_j is the rate of return for firm j when R_{mt} is zero, and ε_{jt} is a serially independent disturbance term $[E(\varepsilon_{jt}) = 0]$. The parameters of the market model (α_j and β_j) are estimated over a 238-day period (day $t - 259$ to day $t - 21$, where t signifies the announcement date) (Gaver *et al.*, 1992). The

DOI: 10.1002/smj

excess return (e_{jt}) from each acquisition is then given by:

$$e_{jt} = R_{jt} - a_j - b_j R_{mt},$$

where a_j and b_j are least squares estimates of α_j and β_j. In effect, this measure gauges a firm's stock returns on a particular day in excess of the returns that would have been expected based on the returns of companies with similar betas. We corrected for heteroskedasticity using the Jaffe-Mandelker portfolio method (Binder, 1998).

We ran the analyses using several different event periods, where the event period designates the period of time over which excess returns are cumulated. In the primary analysis, however, we estimated excess returns over a two-day period (t_{-1} to t_0). While longer event periods allow for the gradual diffusion of information about an event following announcement, research has shown that prices generally adjust to the announcement of significant corporate events such as corporate acquisitions very quickly (e.g., within 15 minutes [Dann, Mayers, and Raab, 1977; Ryngaert and Netter, 1990]). Moreover, with longer event periods there is a higher likelihood of contamination from extraneous events. Nevertheless, we ran separate analyses using an 11-day event period (t_{-5} to t_{+5}) and a 31-day event period (t_{-5} to t_{+25}), and the hypothesized results presented below were substantively unchanged.

Following many prior studies, in the primary analyses we coded acquisitions as related when the primary two-digit Standard Industrial Classification (SIC) code of the acquiring firm matched that of the acquired firm (Fowler and Schmidt, 1989; Krishnan, Miller, and Judge, 1997; Kroll *et al*., 1997); all other acquisitions were coded as *un*related. In separate analyses we coded acquisitions as related when (i) the primary *four*-digit SIC code of the acquiring firm matched that of the acquired firm (Hayward, 2002), (ii) the primary NAICS (North American Industry Classification System) code of the acquiring firm matched that of the acquired firm, (iii) the acquiring and acquired firms had at least one four-digit SIC code in common among the top six lines of business in which they operated, or (iv) the acquiring and acquired firms had at least one NAICS code in common among the top six lines of business in which they operated. In each of these supplementary models, the hypothesized results were substantively unchanged from the results presented below.

Independent variables

We measured outside directors' prior experience with decisions about acquiring firms in the same product market as the focal acquisition as:

$$\sum_{d=1}^{M} \sum_{y=t-1}^{t-8} (\sum_{f=1}^{N} A^s_{y,f})$$

where A^s indicates an acquisition of a company that has the same primary two-digit SIC code as the acquired firm in the focal acquisition at the N firms where the individual served as manager or director in year y (t indicates the time of the survey), and M indicates the number of outside directors on the board making the focal acquisition. In separate models we measured A as acquisition of a company that has (i) the same primary *four*-digit SIC code as the acquired firm in the focal acquisition, (ii) the same primary NAICS code as the acquired firm in the focal acquisition (iii) at least one four-digit SIC code in common with the acquired firm in the focal acquisition among the top six lines of business in which they operated, (iii) at least one NAICS code in common with the acquired firm in the focal acquisition among the top six lines of business in which they operated. In each of these models the results were unchanged.

We measured directors' prior experience with decisions about related acquisitions as:

$$\sum_{d=1}^{M} \sum_{y=t-1}^{t-8} (\sum_{f=1}^{N} A^r_{y,f})$$

where A^r indicates an acquisition of a company that has the same primary two-digit SIC code as acquiring firm f at the N firms where the focal individual served as manager or director in year y, and M indicates the number of outside directors on the board making the focal acquisition. In separate models, we measured A^r as acquisition of a company that has (i) the same primary *four*-digit SIC code as the acquiring firm f, (ii) the same primary NAICS code as the acquiring firm (iii) at least one four-digit SIC code in common with the acquiring firm among the top six lines of business in which they operated, (iii) at least one NAICS code in common with the acquiring firm among the top six lines of business in which they operated. In each of these models the results were unchanged. We developed an analogous measure

DOI: 10.1002/smj

to operationalize directors' prior experience with decisions about *un*related acquisitions.

Our approach to aggregating board member experience is guided by prior research on how the expertise of group members affects group performance, which has typically aggregated group member experience or expertise by summing the relevant characteristics of individual group members (for reviews, see McGrath, 1984; Kerr and Tindale, 2004). In separate analyses we tried several alternative approaches to aggregation (e.g., the mean or median level of experience, experience weighted by indicators of director status, such as number of board appointments held by the director, and experience weighted by the market returns of experienced acquisitions). Each of these alternative approaches to aggregation reduced the fit of our empirical models. We used four different indicators of board independence from management that have been widely used in the governance literature (for reviews, see Finkelstein and Hambrick, 1996; Westphal and Zajac, 1998; Chatterjee and Harrison, 2001): the ratio of outside to inside directors; the portion of outside directors appointed after the CEO; separation of the CEO and board chair positions; and outside director stock ownership. The ratio of outside to inside directors partially determines the board's formal independence from top management. Nonemployee directors are less beholden to CEOs than inside directors (Boeker, 1992; Finkelstein and Hambrick, 1996), and should therefore be more willing to challenge strategic proposals put forth by the CEO. Thus, when outsiders hold a relatively large portion of board seats, norms of director conduct should tend to motivate decision control by board members. As noted above, there is some evidence that the outsider ratio predicts the extent to which boards intervene in the strategic decision-making process (Judge and Zeithaml, 1992; Johnson *et al*., 1993). Separation of the CEO and board chair positions also enhances the board's formal independence from management. It is thought that directors will be less inclined to challenge management proposals when the CEO serves as board chair than when an outsider presides over the board (Harrison, Torres, and Kukalis, 1988; Cannella and Lubatkin, 1993; Daily and Dalton, 1994; Finkelstein and Hambrick, 1996; Sanders and Carpenter, 1998). Consistent with this proposition, Westphal (1999) found evidence for a strong, positive association between CEO-board chair separation and subsequent board monitoring of strategic decision making.

The portion of outside directors appointed after the CEO, is thought to indicate the degree to which a firm's board is socially independent from management; social independence is reduced to the extent that a significant number of directors were appointed after the CEO came to his or her position. There is considerable evidence that CEOs use their control of the director nomination process to select outsiders who are personal friends, demographically similar, or otherwise sympathetic to them (for a review, see Finkelstein and Hambrick, 1996). Moreover, outsiders may feel beholden to CEOs for appointing them to the board (Wade, O'Reilly, and Chandratat, 1990). Accordingly, outsiders appointed by the CEO may be less independent of management, and less inclined to challenge management proposals, than outsiders appointed by a previous CEO. Finally, outside director stock ownership should enhance the board's independence from management. Stock ownership aligns the interests of directors with the interests of shareholders, and should therefore motivate directors to block management proposals that they believe do not further shareholder interests (Finkelstein and Hambrick, 1996; Hambrick and Jackson, 2000; Ho, Lam, and Sami, 2004). In fact, Johnson *et al*. (1993) found strong evidence that outside director ownership increases the tendency for boards to intervene in the strategic decision-making process, and Westphal (1999) found a positive association between director ownership and board monitoring of strategic decision making. This variable is measured as the percentage of total common equity held by outside directors.

All four indicators of board independence were measured for the year prior to the acquisition announcement. We combined the four indicators into a single index using principal components analysis (Jackson, 1991). It is appropriate to apply a data reduction technique such as principal components to causal (vs. reflective) indicators (MacCallum and Browne, 1993). Although causal indicators need not be correlated with one another, factor analysis showed that all four indicators loaded on one factor with an eigenvalue greater than one. In separate analyses we also included the portion of outside directors who were affiliated with the focal firm by family or business relationship as a fifth indicator of board independence (cf. Daily, 1996), and the hypothesized results displayed below were

DOI: 10.1002/smj

unchanged. Moreover, we also ran separate models in which each indicator of board independence was entered separately, and again the hypothesized results were substantively unchanged.

We tested the hypothesized interactions between the director experience variables and board independence using the product-term approach. Components of the interaction terms were centered to avoid multicollinearity. This procedure yielded three interaction terms:

(i) Director experience with acquisitions in the same product market as the focal acquisition X board independence;
(ii) Director experience with related acquisitions X board independence;
(iii) Director experience with *un*related acquisitions X board independence.

In the interest of thoroughness, we ran supplementary models that assessed the separate moderating effects of each of the components of our composite board independence variable. Taken as a whole, results from these additional analyses were generally consistent with the results we report below, although we note that the moderating effect of the ratio of outside to inside directors was weaker than the impact of the other three indicators of independence we employed.

Control variables

We controlled for a range of financial, organizational, and macroeconomic factors that could influence acquisition performance. First, we controlled for the size of the acquiring firm and the target firm, with size measured as log of total assets ('*Log of acquiring firm size*'; '*Log of target size*') (Beckman and Haunschild, 2002). In separate models we controlled for the ratio of acquiring firm size to target firm size and the results were identical to those displayed below. We also controlled for the financial slack of the acquiring firm. The literature on corporate acquisitions suggests that slack could influence acquisition performance, although prior research is inconclusive about the directionality of this relationship (Jensen, 1986; Hitt *et al*., 1993; Haleblian and Finkelstein, 1999). We included two measures of slack in the models: the *debt-to-equity ratio*, which is inversely related to slack, and *free cash flow*. Moreover, we controlled for the profitability of the acquiring firm, measured as *return on assets*.

An agency theory perspective suggests that significant ownership by institutional investors may improve the quality of acquisition decisions. In this light, we controlled for the level of ownership by institutional investors ('institutional ownership'), measured as the number of shares held by pension funds, banks and trust companies, savings and loans, mutual fund managers, and labor union funds, divided by total common stock. Several scholars have posited that firm-level experience in making acquisitions could influence acquisition performance, although empirical evidence is mixed. Thus, we controlled for the number of acquisitions completed by the focal firm during the prior eight-year period ('*prior acquisitions of focal firm*') (Beckman and Haunschild, 2002). This variable also serves as a more general control for possible sources of unobserved heterogeneity (Gulati, 1995; Beckman and Haunschild, 2002). In separate models we used alternative specifications of firm-level acquisition experience, including: (i) experience with related vs. unrelated acquisitions; (ii) similar acquisition experience, measured as the proportion of prior acquisitions that shared the same four-digit SIC code as the focal acquisition (Haunschild, 1994; Haleblian and Finkelstein, 1999); (iii) the similarity of prior acquisitions, measured as the percentage of prior acquisitions in the firm's primary four-digit SIC code (Hayward, 2002); and (iv) curvilinear specifications of each of these experience variables. The hypothesized results were unchanged in each of these supplementary models.

We also controlled for the total acquisition experience of outside directors ('total director experience') (i.e., directors' combined experience with related *and un*related acquisitions). We also ran separate models that included measures of inside director experience *with acquisitions at other firms* that paralleled the measures of outside director experience discussed above. The hypothesized results were substantively unchanged with these controls included in the models. Moreover, we controlled for period effects by including dummy variables for the N-1 years in which acquisitions were made, and we controlled for industry effects by including dummies for the N-1 primary (two-digit) SIC codes of acquiring firms in the sample (to conserve space, coefficients for these variables are not displayed in the tables). In separate models we included dummy variables for acquired

DOI: 10.1002/smj

firms' industries, and the hypothesized results were unchanged.

Prior studies of corporate acquisitions have examined how certain characteristics of the 'deal' or transaction might influence acquisition performance. For example, while the evidence is mixed, some studies have found that the fraction of the acquisition price paid in the acquiring firm's stock has negative effects on acquisition performance (Datta and Grant, 1990; Haleblian and Finkelstein, 1999). We therefore controlled for the form of consideration in the focal deal, measured as the percentage of the acquisition paid in the acquiring firm's common stock. It has also been suggested that factors like the number of other bidding firms, and whether a takeover is hostile (or not), can impact acquisition returns. We ran separate models with each of these variables included; there were no changes in the hypothesized results reported below. Moreover, the results were also unchanged when we controlled for other major policy announcements and publicized incidents that occurred during the event period (see McWilliams and Siegel, 1997: 640). Control variables were lagged by one year.

Analysis

We used multiple regression analysis to estimate excess returns from the announcement of corporate acquisitions. While event studies in the financial economics literature typically assess the effects of independent variables on excess returns using subgroup analyses, several authors have recommended the use of multiple regression to control for possible third variables (e.g., McWilliams and Siegel, 1997). We estimated excess returns for three different samples to test our hypotheses: the sample of related acquisitions (N = 779), the sample of *un*related acquisitions (N = 1137), and the sample of all acquisitions (N = 1916). Given that our data has a time series component, we used the Cochrane-Orcutt transformation to correct for autocorrelation (results were unchanged using the Prais-Winsten method) (Johnston and DiNardo 1997). While several of our control variables help to address possible sources of unobserved heterogeneity in the data (e.g., prior acquisitions by the focal firm and prior performance), in the interest of thoroughness we also conducted separate analyses using fixed-effects models to control for possible confounds related to unobserved heterogeneity (Greene, 1993). The hypothesized results discussed below remained strongly significant, suggesting that unobserved heterogeneity is not confounding our findings.

RESULTS

Descriptive statistics and bivariate correlations are included in Table 1. Table 2 shows the results of Cochrane-Orcutt regression analyses of excess stock returns from corporate acquisitions.[6]

Hypothesis 1a predicted a positive relationship between the number of acquisitions that outside directors have previously been involved in that are in the same markets as the acquisitions undertaken by a focal firm and the performance of the focal firm's recent acquisitions. Hypothesis 1a is supported. The results in Model 1 of Table 2 show a significant positive relationship between directors' experience with acquisitions in related markets and the excess returns associated with a firm's acquisitions ($p < 0.05$). Hypothesis 1b is also supported. The results in Model 3 of Table 2 indicate a significant positive relationship between outside director experience with related acquisitions and the performance of a firm's related acquisitions ($p < 0.01$). Hypothesis 1c posited a positive relationship between directors' experience with *un*related acquisitions and the excess returns from a firm's *un*related acquisitions. The results in Model 5 support Hypothesis 1c ($p < 0.05$).

Table 2 also contains statistical findings relevant to our second set of hypotheses, which made predictions about how board independence from management would likely moderate the effects posited in Hypotheses 1a -1c. Hypothesis 2a predicted that board independence would moderate the link between directors' experience with acquisitions in markets similar to those in which a focal firm is pursuing acquisitions and the performance of a firm's acquisitions, such that the relationship would be more positive for firms with independent boards. The results in Model 2 strongly support this hypothesis. The relevant two-way interaction between director experience with

[6] There is no evidence for multicollinearity in the models: the highest variance inflation factor (VIF) was less than 10, and the mean VIF was not significantly greater than one in any of the models (Chatterjee, Hadi, and Price, 2000).

DOI: 10.1002/smj

Table 1. Descriptive statistics and pearson correlation coefficients[a]

Independent Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14a	14b
1. Board independence from management	0.00	1.01															
2. Dir. experience with related acquisitions	3.81	3.17	0.02														
3. Dir. experience with *un*related acquisitions	5.42	4.65	−0.03	0.04													
4. Dir. experience with acquisitions in related markets	3.09	3.44	0.01	0.06	−0.01												
5. Return on assets	0.06	0.07	0.03	0.02	−0.07	0.00											
6. Debt-to-equity	1.94	29.40	−0.06	0.00	0.04	0.01	−0.42										
7. Free cash flow	3.68	47.84	−0.08	0.03	−0.03	0.02	0.08	−0.14									
8. Log of acquiring firm size	8.78	1.22	−0.03	0.05	0.07	0.04	0.12	0.09	0.16								
9. Log of target size	5.52	1.74	0.01	−0.04	0.03	0.05	0.15	0.18	0.15	0.21							
10. Prior acquisitions of focal firm	3.23	2.98	−0.02	0.01	0.01	0.03	0.18	0.10	−0.09	0.11	0.06						
11. Total director experience	22.63	10.39	0.00	0.59	0.69	0.02	−0.03	0.03	−0.01	0.07	0.00	0.01					
12. Institutional ownership	0.33	0.21	0.05	0.03	−0.04	0.00	0.03	−0.04	−0.07	−0.06	−0.08	0.02	−0.02				
13. Stock consideration	31.24	42.98	−0.02	−0.03	−0.02	−0.03	−0.01	−0.04	−0.06	−0.04	0.03	0.02	−0.02	0.00			
14. Excess stock rtrns. from:																	
a. Related acquisitions[b]	0.06	0.39	0.04	0.05	−0.04	0.05	0.02	0.03	−0.08	0.02	−0.04	−0.06	0.01	0.05	0.01		
b. *Un*related acquisitions[c]	0.03	0.32	0.02	0.01	−0.03	0.03	0.01	0.04	−0.06	0.01	−0.27	−0.10	−0.01	0.01	0.02	–	
c. All acquisitions	0.04	0.35	0.04	0.03	−0.03	0.05	0.01	0.03	−0.06	0.01	−0.10	−0.09	0.00	0.04	0.01	–	–

[a] Statistics are given for the combined sample of related and *un*related acquisitions (N = 1916) except where indicated.
[b] Statistics involving this variable are given for the sample of related acquisitions.
[c] Statistics involving this variable are given for the sample of *un*related acquisitions.

Table 2. Cochrane-Orcutt regression analyses of excess stock returns from corporate acquisitions

Independent variable	All acquisitions		Related acquisitions		Unrelated acquisitions	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dir. experience with acquisitions in related markets	0.019*	0.019*	0.032*	0.030*	0.015*	0.015†
	(0.008)	(0.008)	(0.013)	(0.013)	(0.007)	(0.008)
Dir. experience with related acquisitions	0.009	0.008	0.039**	0.037***	0.005	0.006
	(0.006)	(0.006)	(0.015)	(0.012)	(0.012)	(0.011)
Dir. experience with *un*related acquisitions	−0.007	−0.008	−0.017†	−0.017†	0.013*	0.014*
	(0.006)	(0.006)	(0.009)	(0.008)	(0.007)	(0.007)
Board independence from management	0.024	0.023	0.037	0.051	0.020	0.021
	(0.024)	(0.023)	(0.038)	(0.047)	(0.027)	(0.029)
Dir. experience with acquisitions in related markets X Board independence		0.018**				
		(0.006)				
Dir. experience with related acquisitions X Board independence				0.330*		0.048
				(0.169)		(0.111)
Dir. experience with *un*related acquisitions X Board independence				−0.132		0.262**
				(0.088)		(0.106)
Return on assets	0.183	0.201	0.121	0.098	0.060	0.058
	(0.181)	(0.180)	(0.418)	(0.427)	(0.195)	(0.192)
Debt-to-equity	0.0004	0.0003	0.0006	0.0006	0.0005	0.0005†
	(0.0003)	(0.0003)	(0.0005)	(0.0005)	(0.0003)	(0.0003)
Free cash flow	−0.00002*	−0.00031*	−0.0005*	−0.0005*	−0.0004*	−0.0003†
	(0.00001)	(0.00014)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Log of acquiring firm size	−0.005	−0.007	−0.002	−0.002	−0.007	−0.004
	(0.005)	(0.005)	(0.008)	(0.007)	(0.007)	(0.007)
Log of target size	−0.010**	−0.010**	−0.015*	−0.017*	−0.014***	−0.014***
	(0.004)	(0.004)	(0.007)	(0.007)	(0.004)	(0.004)
Prior acquisitions of focal firm	−0.0059**	−0.0064**	−0.010*	−0.010*	−0.007*	−0.007*
	(0.0024)	(0.0025)	(0.004)	(0.004)	(0.003)	(0.003)
Total director experience	−0.001	−0.001	−0.0019	−0.0020	−0.001	−0.001
	(0.001)	(0.001)	(0.0011)	(0.0012)	(0.001)	(0.001)
Institutional ownership	0.130	0.123	0.283	0.288	0.071	0.030
	(0.213)	(.207)	(0.195)	(0.187)	(0.173)	(0.174)
Stock consideration	0.0001	0.0001	0.0002	0.0002	0.0001	0.0001
	(0.0002)	(0.0002)	(0.0003)	(0.0003)	(0.0002)	(0.0002)
Constant	−0.025	−0.006	−0.145	−0.179	0.006	0.037
	(0.066)	(0.063)	(0.174)	(0.132)	(0.068)	(0.069)
F (Wald test)	4.37***	7.55***	3.56***	6.99***	3.31**	5.92***
R^2	0.30	0.44	0.27	0.44	0.20	0.35
N	1916	1916	779	779	1137	1137

acquisitions in related markets and board independence is positive and statistically significant ($p < 0.01$). Hypothesis 2b is also supported. Hypothesis 2b posited that board independence would amplify the positive effects of directors' experience with related acquisitions on the performance of a firm's related acquisitions, and the relevant two-way interaction in Model 4 between director experience with related acquisitions and board independence is positive and statistically significant ($p < 0.05$). There is, moreover, strong support for Hypothesis 2c, which predicted that board independence would amplify the positive relationship between the directors' experience with *un*related acquisitions and the excess returns associated with a focal firm's *un*related acquisitions. The results in Model 6 show that the relevant two-way interaction term is positive and statistically significant ($p < 0.01$).

It is interesting to note that the results consistently fail to support the broad proposition that firms will make better acquisition decisions when their boards are independent from management. The relevant results in Models 1, 3, and 5 show insignificant main effects of board independence on the performance of (1) all of a firm's

DOI: 10.1002/smj

acquisitions, (2) a firm's related acquisitions, and (3) a firm's *un*related acquisitions.[7]

DISCUSSION

The prevailing view in much popular and academic writings on the question of what makes boards effective has been that board independence from management is the principal determinant of the performance effects of boards. Agency theorists and others argue that independent directors will show the greatest tendencies to intervene to block management-proposed actions that they view as ill -advised, and thus they will be more effective at preventing managers from pursuing their own personal interests at the expense of shareholder objectives. However, the intuitive appeal of prevailing academic theory and popular wisdom notwithstanding, a now extensive body of empirical evidence indicates that board independence does not have consistent positive firm-level performance effects. Thus, there exists something of an impasse in the contemporary board effectiveness literature. A number of board scholars have recently observed that the time is, therefore, ripe both for considering how other factors influence board effectiveness, and for bringing alternative theoretical perspectives to the critical question of what renders boards effective (Daily *et al*., 2003; Hillman and Dalziel, 2003).

Prior work on the basic functions of boards of directors has suggested that the other main role of outside directors' is the provision of advice and counsel to firm managers (Pfeffer and Salancik, 1978). However, comparatively little attention has been given to factors that might enhance directors' abilities to provide valuable advice and counsel (i.e., advice and counsel that helps the focal firm to perform better). Some scholars have at least suggested that directors might be more effective advisors to the extent that they have the 'right' kinds of knowledge and expertise (Carpenter and Westphal, 2001; Hillman and Dalziel, 2003), but there has been little systematic effort to 'unpack' this basic notion and there has been little, if any, empirical research conducted on the performance effects of outside director experience and expertise. There has, by extension, been little consideration of the boundary conditions under which director expertise might have stronger or weaker effects on performance outcomes.

This article sought to address these important issues. We exploited theory and findings from psychological theory and research on expertise to develop a conceptual framework that delineates the sources of relevant director knowledge and expertise and the specific nature of the link between director expertise and firm-level performance outcomes. We are aware of no prior publications that are singularly focused on this critical issue. An essential thesis of the expertise literature is that expertise and expert performance tends to be specific to particular knowledge domains. This theory and evidence led us to conclude that directors would be unlikely to possess some broad expertise in undertaking all kinds of acquisitions. Different kinds of acquisitions require executives to draw on distinct knowledge bases, and thus we concluded that directors would likely develop expertise in pursuing specific types of acquisitions. We more specifically argued that directors will develop expertise in undertaking (i) acquisitions in particular industries or product markets, (ii) related acquisitions, and (iii) *un*related acquisitions.

The psychological literature on expertise further indicates that prior experience with making decisions in a particular knowledge domain is a critical source for the development of expertise in that domain. Experience with a particular kind of complex decision facilitates the development of the more extensive, and better organized, knowledge that is the hallmark of expert knowledge in a particular domain. The more extensive and better organized knowledge that experts possess supports better decision making. We, therefore, concluded that outside directors would develop expertise in doing each of the three types of acquisitions specified above to the extent that they had been involved with a significant number of acquisitions of the relevant type through their past service on other boards of directors.

[7] It should be noted that some results from the small number of other studies that have examined the main effects of acquiring firm board independence on acquisition performance suggest a more complicated picture. Byrd and Hickman (1992) reported a curvilinear relationship between the number of independent directors on the board and the performance of a firm's acquisitions. Subrahmanyam, *et al*. (1997) found that one indicator of independence, the proportion of outside directors, was negatively related to the performance of acquisitions in the banking industry, but that outside director stock ownership, another indicator of independence, had positive performance effects. However, in the present study we did not find evidence for a curvilinear relationship of independence, nor did we find evidence for divergent effects of different indicators of independence.

DOI: 10.1002/smj

Consistent with this line of reasoning, we offered three specific hypotheses regarding the main effects of director experience and resulting expertise on firm acquisition performance. We hypothesized that a firm would make better acquisition decisions to the extent that the firm's outside directors had experience with acquisition decisions in the same product markets as the acquisitions being pursued by the focal firm. We also predicted that a firm's related acquisitions would perform better to the extent that outside directors had experience in making related acquisitions, and that a firm's *un*related acquisitions would be of higher quality to the extent that outside directors were experienced in making *un*related acquisitions. We found considerable empirical support for this set of hypotheses. In fact, our results were consistent with all three predictions.

We went on to consider an important moderator of the performance effects of outside director expertise. In this regard, we continued to be guided by the psychological literature on expertise and its role in group decision making. This literature suggests that in group decision making (e.g., board decision making), individual member expertise is most beneficial to the extent that high-expertise members have relatively high levels of influence on decision making (and low expertise members have limited influence). We, therefore, concluded that the performance benefits of relevant outside director acquisition expertise would be moderated by the degree to which outside directors are willing and able to shape firm strategic decisions. The extant board's literature indicates that a critical determinant of outside directors' propensities to interject themselves into strategic decision making is their relative independence from management. We, therefore, predicted that board independence would amplify (i.e., make more positive) the positive performance effects of (1) outside directors' experience with acquisitions in the same industries or product markets in which a focal firm is making acquisitions, (2) outside directors' experience with related acquisitions, and (3) outside directors' experience with *un*related acquisitions. All of our formal hypotheses in this regard were also supported by our empirical findings.

Theoretical contributions

The core contribution of this article is that it may represent the first systematic effort to develop and empirically test a theoretical model of the relationship between outside director experience and expertise and firm-level performance outcomes. The basic notion that outside director expertise might prove beneficial is, admittedly, not a novel one. However, few efforts have been made to conceptually elaborate this largely undeveloped idea. In fact, we are aware of no prior published study that is singularly focused on this issue. The limited attention given to the role of director expertise in theories of board effectiveness is brought into especially sharp relief when we consider the large number of empirical studies and theoretical treatments that have focused on the supposed performance benefits of a wide range of indicators of board independence.

We believe that it is important to note that this article also posits a previously unconsidered role for board independence from management as a contributor to board effectiveness. Prevailing perspectives have traditionally viewed board independence primarily as an indicator of outside directors' capacities to act objectively to block management-proposed initiatives that are inconsistent with shareholder interests. Our theory instead highlights how board independence, and the greater outside director involvement in strategic decision making that it brings, acts as a critical moderator of the firm-level performance effects of outside director experience and expertise. Our conceptual arguments also suggest how CEOs might respond to greater board independence in more constructive ways to the extent that independent directors possess expertise that is closely related to the strategic issues facing the focal firm. Our arguments suggest, for example, how expertise might reduce CEO 'reactance' (Westphal, 1998) in the face of increased board independence.

Our theory and empirical findings make contributions that extend beyond its principal ones, which were outlined above. Our model and results can also inform the literature on learning from experience by organizations, especially the nascent literature on organizational learning from experience with acquisitions (e.g., Haleblian and Finkelstein, 1999; Hayward, 2002). This literature has been principally concerned with how the performance of a firm's acquisitions is influenced *by the firm's own prior acquisition experience*. The baseline theoretical proposition in this research stream has been that firms and their executives learn from their prior experiences in acquiring

DOI: 10.1002/smj

other companies and that, as a result, we should expect a positive relationship between the number of acquisitions that a firm has conducted in the past and the performance of its subsequent acquisitions. Surprisingly, empirical research has generally failed to consistently confirm this relationship. Researchers have variously found that the amount of prior same-firm acquisition experience has a negative (Kusewitt, 1985), positive (Fowler and Schmidt 1989), and neutral (Bruton, Oviatt, and White 1994; Hayward 2002; King *et al*., 2004; Zollo and Singh 2004) effect on subsequent acquisition performance.

Haleblian and Finkelstein (1999) drew from behavioral learning theory to offer an explanation for these conflicting findings, arguing that the value of a firm's prior acquisition experience depends on the similarity of current and past acquisitions (see also Hayward, 2002). They offered empirical support for this argument in their finding that acquisitions perform better when past acquisitions by the focal firm were in the same product market as the current acquisition. Using the psychological literature on how people develop expertise in knowledge-rich domains, we make a parallel argument regarding the prior acquisitions not of the focal firm, but of its outside directors. Our findings provide further support for the view that prior experience helps firm leaders develop a specialized rather than generalized acquisition capability.

Managerial implications

Aside from the contributions to theory and research outlined above, our theoretical perspective and findings also have fairly straightforward implications for the practice of corporate governance. In particular, our theory suggests that corporate leaders should select and retain outside directors whose prior experience fits with key elements of the firm's corporate strategy, including its acquisition strategy. If the firm's corporate strategy will require related acquisitions, corporate leaders should seek to attract and retain independent directors who have prior experience with making decisions about related acquisitions; if the firm's corporate strategy will require acquisitions in a particular product market, corporate leaders should seek to attract and retain independent directors who have prior experience with making decisions about acquisitions in that product market, and so forth.

Our theoretical framework further suggests how instituting widely advocated board reforms that are expected to enhance director independence from management will amplify the benefits of having outside directors who have relevant strategic expertise. Director expertise will prove more beneficial to the extent that it actually impacts strategic decisions, and greater independence generally increases the relative influence of outside directors. It is worth noting that while our theory suggests specific criteria that should be considered in the director selection process, these criteria can also be quantified in our empirical model. Thus, the model itself could be used as a formal decision aid in director selection.

Limitations and directions for future research

We note here that our theory and primary analyses do not address the issue of the implications that the *performance* of the past acquisitions that directors were involved in might have for their abilities to make constructive contributions to a focal firm's current acquisition decisions. We conducted preliminary, supplementary analyses to explore this issue. Some prior research has suggested how firms and their managers might learn from a mix of low and high performing past decisions because this pattern of past experiences enhances their abilities to identify the defining characteristics of 'good' and 'bad' decisions (e.g., Beckman and Haunschild, 2002). However, our supplementary analyses suggest that directors' prior experience with acquisition decisions is most beneficial when outside directors have been exposed to mostly successful acquisitions of the relevant type in the past, rather than a set of acquisitions where performance outcomes were more mixed. Future research might more systematically explore this issue and attempt to reconcile these seemingly disparate findings.

In this article, our conceptual arguments and empirical findings focus exclusively on the effects that outside directors have on the performance of one kind of strategic action, firm acquisitions. However, we believe that the general principles of our theory might be extended to consider how other aspects of outside directors' prior experiences (e.g., their experiences with strategic alliances) impact the relative success of other kinds of focal firm strategic actions (e.g., a focal firm's strategic alliances). The examination of such questions represents a potentially wide avenue for

DOI: 10.1002/smj

future research that could ultimately come to represent a second main 'front' in research on the key sources of board effectiveness.

ACKNOWLEDGEMENTS

We would like to thank Steven Boivie, Laurence Capron, Mathew Hayward, Jeffrey Loewenstein, and Maurizio Zollo for providing valuable comments on earlier drafts of this article. We are also grateful for anonymous reviewer comments and the comments of Editor Edward Zajac, all of which helped improve the article.

REFERENCES

Anderson JR, Fincham JM, Douglass S. 1997. The role of examples and rules in the acquisition of cognitive skill. *Journal of Experimental Psychology: Learning, Memory, and Cognition* **23**: 932–945.

Baumol WJ. 1982. *Contestable Markets and the Theory of Industry Structure*. Harcourt Brace Jovanovich: New York.

Beckman CM, Haunschild PR. 2002. Network learning: the effects of partners' heterogeneity of experience on corporate acquisitions. *Administrative Science Quarterly* **47**: 92–125.

Belliveau MA, O'Reilly CA, Wade JB. 1996. Social capital at the top: effects of social similarity and status on CEO compensation. *Academy of Management Journal* **39**: 1568–1594.

Bhagat S, Black B. 2002. The non-correlation between board independence and long-term firm performance. *Journal of Corporation Law* **27**: 231–274.

Binder JJ. 1998. The event study methodology since 1969. *Review of Quantitative Finance and Accounting* **11**: 111–137.

Boeker W. 1992. Power and managerial dismissal: scapegoating at the top. *Administrative Science Quarterly* **37**: 400–421.

Brown SJ, Warner JB. 1985. Using daily stock returns: the case of event studies. *Journal of Financial Economics* **14**: 3–31.

Bruton GD, Oviatt BM, White MA. 1994. Performance of acquisitions of distressed firms. *Academy of Management Journal* **37**: 972–988.

Bunderson JS. 2003. Recognizing and utilizing expertise in work groups: a status characteristics perspective. *Administrative Science Quarterly* **48**(4): 557–591.

Buono AF, Bowditch JL. 1985. When cultures collide: the anatomy of a merger. *Human Relations* **38**: 477–500.

Byrd J, Hickman K. 1992. Do outside directors monitor managers? Evidence from tender offer bids. *Journal of Financial Economics* **32**: 195–207.

Cannella AA, Lubatkin M. 1993. Succession as a sociopolitical process: internal impediments to outsider selection. *Academy of Management Journal* **36**: 763–793.

Capron L. 1999. The long-term performance of horizontal acquisitions. *Strategic Management Journal* **20**(11): 987–1018.

Capron L, Dussauge P, Mitchell W. 1998. Resource redeployment following horizontal acquisitions in Europe and North America, 1988–1992. *Strategic Management Journal* **19**(7): 631–661.

Carpenter M, Westphal JD. 2001. The strategic context of external network ties: examining the impact of director appointments on board involvement in strategic decision making. *Academy of Management Journal* **44**: 639–660.

Chase WG, Simon HA. 1973. Perception in chess. *Cognitive Psychology* **4**: 55–81.

Chatterjee S, Hadi AS, Price B. 2000. *Regression Analysis by Example*. Wiley: New York.

Chatterjee S, Harrison JS. 2001. Corporate governance. In *The Blackwell Handbook of Strategic Management*, Hitt MA, Freeman RE, Harrison JF (eds). Blackwell: Oxford, UK; 543–563.

Chi MTH, Feltovich PJ, Glaser R. 1981. Categorization and representation of physics problems by experts and novices. *Cognitive Science* **5**: 121–125.

Coff R. 1999. How buyers cope with uncertainty when acquiring firms in knowledge-intensive industries. *Organization Science* **10**: 144–161.

Coff R. 2003. Bidding wars over R&D-intensive firms: knowledge, opportunism, and the market for corporate control. *Academy of Management Journal* **46**(1): 74–86.

Daily CM. 1996. Governance patterns in bankruptcy reorganizations. *Strategic Management Journal* **17**(5): 355–375.

Daily CM, Dalton DR. 1994. Bankruptcy and corporate governance: the impact of board composition and structure. *Academy of Management Journal* **37**: 1603–1617.

Daily CM, Dalton DR, Cannella AA. 2003. Corporate governance: decades of dialogue and data. *Academy of Management Review* **28**: 371–382.

Dalton DR, Daily CM, Ellstrand AE, Johnson JL. 1998. Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic Management Journal* **19**(3): 269–290.

Dann LY, Mayers D, Raab RJ. 1977. Trading rules, large blocks and the speed of price adjustment. *Journal of Financial Economics* **4**: 3–22.

Datta DK, Grant JH. 1990. Relationships between type of acquisition, the autonomy given to the acquired firm, and acquisition success: an empirical analysis. *Journal of Management* **16**: 29–44.

Day D, Lord R. 1992. Expertise and problem categorization: the role of expert processing in organizational sensemaking. *Journal of Management Studies* **29**: 35–47.

de Groot A. 1946/1978. *Thought and Choice and Chess*. Mouton: The Hague, The Netherlands.

Ericsson KA, Charness N. 1994. Expert performance: its structure and acquisition. *American Psychologist* **49**(8): 725–747.

Ericsson KA, Charness N. 1997. Cognitive and developmental factors in expert performance. In *Expertise in Context: Human and Machine*, Feltovich PJ, Ford KM, Hoffman RR (eds). AAAI/MIT Press: Cambridge, MA; 3–41.

Ericsson KA, Lehmann AC. 1996. Expert and exceptional performance: evidence of maximal adaptation to task constraints. *Annual Review of Psychology* **47**: 273–305.

Fama EF, Jensen MC. 1983. Separation of ownership and control. *Journal of Law and Economics* **26**: 301–326.

Faraj S, Sproull L. 2000. Coordinating expertise in software development teams. *Management Science* **46**: 1554–1568.

Finkelstein S, Hambrick DC. 1996. *Strategic Leadership: Top Executives and Their Effects on Organizations*. West: St. Paul, MN.

Forbes DP, Milliken FJ. 1999. Cognition and corporate governance: understanding boards of directors as strategic decision making groups. *Academy of Management Review* **24**: 489–505.

Fowler KL, Schmidt DR. 1989. Determinants of tender offer post-acquisition financial performance. *Strategic Management Journal* **10**(4): 339–350.

Gaver JJ, Gaver KM, Battistel GP. 1992. The stock market reaction to performance plan adoptions. *The Accounting Review* **67**: 172–182.

Glaser R, Chi MTH. 1988. Overview. In *The Nature of Expertise*, Chi MTH, Glaser R, Farr MJ (eds). Lawrence Erlbaum Associates: Hillsdale, NJ.

Graebner ME. 2004. Momentum and serendipity: how acquired leaders create value in the integration of technology firms. *Strategic Management Journal*, August–September Special Issue **25**: 751–777.

Greene WH. 1993. *Econometric Analysis* (2nd edn). Macmillan: New York.

Greenwood R, Hinings CR. 1994. Merging professional service firms. *Organization Science* **5**: 239–257.

Gulati R. 1995. Social structure and alliance formation pattern: a longitudinal analysis. *Administrative Science Quarterly* **40**: 619–652.

Hackman JR. 1987. The design of work teams. In *Handbook of Organizational Behavior*, Lorsch JW (ed). Prentice-Hall: Englewood Cliffs, NJ; 315–342.

Haleblian J, Finkelstein S. 1999. The influence of organizational acquisition experience on acquisition performance. *Administrative Science Quarterly* **44**: 29–56.

Hambrick DC, Jackson EM. 2000. Outside directors with a stake: the linchpin in improving governance. *California Management Review* **42**: 108–127.

Harrison JR, Torres DL, Kukalis S. 1988. The changing of the guard: turnover and structural change in the top-management positions. *Administrative Science Quarterly* **33**: 211–232.

Haspeslagh PC, Jemison DB. 1991. *Managing Acquisitions*. The Free Press: New York.

Haunschild PR. 1994. How much is that company worth?: Interorganizational relationships, uncertainty and acquisition. *Administrative Science Quarterly* **39**: 391–411.

Hayward MLA. 2002. When do firms learn from their acquisition experience? Evidence from 1990–1995. *Strategic Management Journal* **23**(1): 21–39.

Healy PM, Palepu KG, Ruback RS. 1992. Does corporate performance improve after mergers? *Journal of Financial Economics* **31**: 135–175.

Hermalin BE, Weisbach MS. 2003. Boards of directors as an endogenously determined institution: a survey of the economic literature. *Economic Policy Review* **9**: (April): 7–26.

Hillman AJ, Dalziel T. 2003. Boards of directors and firm performance: integrating agency and resource dependence perspectives. *Academy of Management Review* **28**: 383–396.

Hitt MA, Harrison JS, Ireland RD, Best A. 1993. Lifting the veil of success in mergers and acquisitions. Paper presented at the Annual Meeting of the Strategic Management Society, Chicago, IL.

Ho SS, Lam KC, Sami H. 2004. The investment opportunity set, director ownership, and corporate policies: evidence from an emerging market. *Journal of Corporate Finance* **10**: 383–409.

Jackson JE. 1991. *A User's Guide to Principal Components*. Wiley: New York.

Jemison DB, Sitkin SB. 1986. Corporate acquisitions: a process perspective. *Academy of Management Review* **11**(1): 145–164.

Jensen MC. 1986. Agency costs of free cash flow, corporate finance and takeovers. *American Economic Review* **76**: 323–329.

Johnson R, Hoskisson R, Hitt M. 1993. Board of director involvement in restructuring: the effects of board vs managerial controls and characteristics. *Strategic Management Journal*, Summer Special Issue. **14**: 33–50.

Johnston J, DiNardo J. 1997. *Econometric Methods* (4th edn). McGraw-Hill: New York.

Judge W, Zeithaml C. 1992. Institutional and strategic choice perspectives on board involvement in the strategic decision process. *Academy of Management Journal* **35**: 766–794.

Kaplan SN, Wiesbach MS. 1992. The success of acquisitions: evidence from divestitures. *Journal of Finance* **47**: 107–138.

Kerr NL, Tindale RS. 2004. Group performance and decision making. *Annual Review of Psychology* **55**: 623–655.

King DR, Dalton DR, Daily CM, Covin JG. 2004. Meta-analyses of post-acquisition performance: indicators of unidentified moderators. *Strategic Management Journal* **25**(2): 187–200.

Krishnan HA, Miller A, Judge WQ. 1997. Diversification and top management team complementarity: is performance improved by merging similar or dissimilar teams? *Strategic Management Journal* **18**(5): 361–374.

Kroll M, Wright P, Toombs L, Leavell H. 1997. Form of control: a critical determinant of acquisition performance and CEO rewards. *Strategic Management Journal* **18**(2): 85–96.

DOI: 10.1002/smj

Krug JA, Hegarty WH. 1997. Postacquisition turnover among U.S. top management teams: an analysis of the effects of foreign vs. domestic acquisitions of U.S. targets. *Strategic Management Journal* **18**(8): 667–675.

Kusewitt JB Jr. 1985. An exploratory study of strategic acquisition factors relating to performance. *Strategic Management Journal* **6**(2): 151–169.

Levy H, Sarnat M. 1970. Diversification, portfolio analysis and the uneasy case for conglomerate mergers. *Journal of Finance* **25**: 795–802.

Lewellen WG. 1971. A pure financial rationale for the conglomerate merger. *Journal of Finance* **26**: 521–545.

Littlepage GE, Mueller AL. 1997. Recognition and utilization of expertise in problem-solving groups: expert characteristics and behavior. *Group Dynamics: Theory, Research, and Practice* **1**: 324–328.

Littlepage GE, Robison W, Reddington K. 1997. Effects of task experience and group experience on group performance, member ability, and recognition of expertise. *Organizational Behavior and Human Decision Processes* **69**: 133–147.

Littlepage GE, Schmidt GW, Whisler EW, Frost AG. 1995. An input-process-output analysis of influence and performance in problem-solving groups. *Journal of Personality and Social Psychology* **69**: 877–889.

Lurigio AJ, Carroll JS. 1985. Probation officers' schemata of offenders: content, development, and impact on treatment decisions. *Journal of Personality and Social Psychology* **48**: 1112–1126.

MacCallum RC, Browne MW. 1993. The use of causal indicators in covariance structure models: some practical issues. *Psychological Bulletin* **114**: 533–541.

March JG. 1994. *A Primer on Decision Making: How Decisions Happen*. The Free Press: New York.

McGrath JE. 1984. *Groups: Interaction and Performance*. Prenctice-Hall: Englewood Cliffs, NJ.

McWilliams A, Siegel D. 1997. Event studies in management research: theoretical and empirical issues. *Academy of Management Journal* **40**: 626–657.

Mizruchi MS. 1996. What do interlocks do? An analysis, critique, and assessment of research on interlocking directorates. *Annual Review of Sociology* **22**: 271–298.

Patell JM. 1976. Corporate forecasts of earnings per share and stock price behavior: empirical tests. *Journal of Accounting Research* **14**(2): 246–276.

Pfeffer J, Salancik G. 1978. *The External Control of Organizations*. Harper & Row: New York.

Pollock T, Fischer HM, Wade JB. 2002. The role of power and politics in the repricing of executive options. *Academy of Management Journal* **45**: 1172–1182.

Reagans R, Argote L, Brooks D. 2005. Individual experience and experience working together: predicting learning rates from knowing who knows what and knowing how to work together. *Management Science* **51**: 869–881.

Reeves LM, Weisberg RW. 1994. The role of content and abstract information in analogical transfer. *Psychological Bulletin* **115**: 381–400.

Ryngaert M, Netter J. 1990. Shareholder wealth effects of the 1986 Ohio Antitakeover Law revisited: its real effects. *Journal of Law, Economics, and Organization* **6**: 253–262.

Sanders WG, Carpenter MA. 1998. Internationalization and firm governance: the roles of CEO compensation, top team composition, and board structure. *Academy of Management Journal* **41**: 158–178.

Scherer FM, Ross D. 1990. *Industrial Market Structure and Economic Performance*. Houghton Mifflin: Boston, MA.

Siegel S, Castellan NJ. 1988. *Nonparametric Statistics for the Behavioral Sciences* (2nd edn). McGraw-Hill: New York.

Steiner ID. 1972. *Group Processes and Productivity*. Academic: New York.

Sternberg RJ. 1997. Cognitive conceptions of expertise. In *Expertise in Context: Human and Machine*, Feltovich PJ, Ford KM, Hoffman RR. (eds). AAAI/MIT Press: Cambridge, MA; 149–162.

Subrahmanyam V, Rangan N, Rosenstein S. 1997. The role of outside directors in bank acquisitions. *Financial Management* **26**: 23–36.

Sujan H, Sujan M, Bettman J. 1988. Knowledge structure differences between more effective and less effective salespeople. *Journal of Marketing Research* **25**: 81–86.

Szulanski G. 2000. Appropriability and the challenge of scope: Banc One routinizes, replication. In *The Nature and Dynamics of Organizational Capabilities*, Dosi G, Nelson RR, Winter SG (eds). Oxford University Press: New York; 69–98.

Teece DJ. 1980. Economies of scope and the scope of the enterprise. *Journal of Economic Behavior and Organization* **1**: 233–247.

Thompson L, Gentner D, Loewenstein J. 2000. Avoiding missed opportunities in managerial life: analogical training more powerful than individual case training. *Organizational Behavior and Human Decision Processes* **82**(1): 60–75.

VanLehn K. 1996. Cognitive skill acquisition. *Annual Review of Psychology* **47**: 273–305.

Wade JB, O'Reilly CA, Chandratat I. 1990. Golden parachutes: CEOs and the exercise of social influence. *Administrative Science Quarterly* **35**: 587–603.

Walsh J. 1995. Managerial and organizational cognition: notes from a trip down memory lane. *Organization Science* **6**: 280–321.

Wernerfelt B. 1984. A resource-based view of the firm. *Strategic Management Journal* **5**(2): 171–180.

Westphal JD. 1998. Board games: how CEOs adapt to increases in structural board independence from management. *Administrative Science Quarterly* **43**: 511–538.

Westphal JD. 1999. Collaboration in the boardroom: the consequences of social ties in the CEO/board relationship. *Academy of Management Journal* **42**: 7–24.

Westphal JD, Zajac EJ. 1995. Who shall govern? CEO/board power, demographic dissimilarity, and new director selection. *Administrative Science Quarterly* **40**: 60–83.

Westphal JD, Zajac EJ. 1997. Defections from the inner circle: social exchange, reciprocity, and the diffusion of board independence in U.S. corporations. *Administrative Science Quarterly* **42**: 161–183.

Westphal JD, Zajac EJ. 1998. The symbolic management of stockholders: corporate governance reforms and shareholder reactions. *Administrative Science Quarterly* **43**: 127–153.

Zajac EJ, Westphal JD. 1996. Who shall rule after a CEO succession? Predicting the likelihood and direction of changes in CEO characteristics. *Academy of Management Journal* **39**: 64–90.

Zollo M, Singh H. 2004. Deliberate learning in corporate acquisitions: post-acquisition strategies and integration capability in U.S. bank mergers. *Strategic Management Journal* **25**(13): 1233–1256.

DOI: 10.1002/smj