

BUILDING THEORETICAL AND EMPIRICAL BRIDGES ACROSS LEVELS: MULTILEVEL RESEARCH IN MANAGEMENT

MICHAEL A. HITT
Texas A&M University

PAUL W. BEAMISH
University of Western Ontario

SUSAN E. JACKSON
Rutgers University and GSBA Zurich

JOHN E. MATHIEU
University of Connecticut

Most management problems involve multilevel phenomena, yet most management research uses a single level of analysis. A micro or a macro lens alone yields incomplete understanding at either level. Multilevel research addresses the levels of theory, measurement, and analysis required to fully examine research questions. This forum presents multilevel research on bribery, national identity, team boundary spanning, professional role identity, organizational citizenship, interorganizational exchanges, and divestitures. To enrich the impact of future management research, we recommend (1) applying multilevel designs to existing models (2) considering bottom-up effects, (3) collaborating across disciplines on multidisciplinary topics, and (4) addressing major real-world problems via multilevel approaches.

Most management research investigates phenomena by examining them at single levels of analysis (e.g., individual, group/team, organization, industry, country, geographic region). As the field of management matures, however, researchers are developing more complex understandings of phenomena by using multilevel lenses. Using a multilevel lens reveals the richness of social behavior; it draws our attention to the context in which behavior occurs and illuminates the multiple consequences of behavior traversing levels of social organization. For management to continue advancing as a field in which scholars seek to explain the behaviors of individuals, groups, and organizations, we must expand our theories and empirical investigations to encompass these multilevel effects.

Management scholars have a long history of recognizing that organizational phenomena unfold within complex and dynamic systems (e.g., Katz & Kahn, 1978; Scott, 1974), yet our scholarship often ignores the multilevel dynamics of these social systems (Kozlowski & Klein, 2000). Rather than deal with the complexities of multilevel systems, management scholarship has become bifurcated into camps of micro and macro experts who rarely engage each other in debates or collaboration. Adopting either a micro or a macro stance yields an

incomplete understanding of behaviors occurring at either level (Porter, 1996) and a proliferation of diverse research paradigms. Paradigmatic diversity has some advantages, but the benefits of that diversity are more likely to be realized through active paradigm competition and synthesis rather than parallel evolution and proliferation (cf. Pfeffer, 1993; Rousseau, 2000). Multilevel research is one way to promote the development of a more expansive management paradigm for understanding organizational systems.

Consider, for example, how multilevel research might improve understanding of organizational performance. The macro approach adopted by strategic management scholars has provided a good understanding of the links between the strategies employed by firms and their environments (e.g., particular market characteristics). Yet we still do not fully appreciate the ways in which strategies are formulated inside organizations and, especially, how they are implemented. In fact, some scholars have argued that a poor understanding of strategy implementation is one reason for divergent findings in the area of strategic management (Hoskisson & Hitt, 1990). For example, research has shown that the performance effects of adopting a related diversification strategy are inconsistent. Differences in the environments of organizations

pursuing such a strategy are one possible explanation for the inconsistent findings, and looking for such environmental explanations is a natural path for macro scholars to follow. It is less common for those with expertise in the field of strategy to investigate the behavioral dynamics of strategy implementation processes, yet such differences in strategy implementation are likely to account for much of the observed variation in the effectiveness of related diversification strategies (e.g., see Hoskisson & Hitt, 1990). Developing a more complete understanding of strategy implementation is likely to require research that recognizes the importance of leadership behaviors, relationships between managers and employees, performance measurement and monitoring, incentive programs, and so on. In other words, the relationship between firm strategies and firm performance is too complex to be explained in only macro terms—understanding it is likely to require the integration of insights from macro and micro scholars collaborating on joint research projects.

Conversely, research conducted at the micro level too often ignores social dynamics arising at higher levels of analysis. Research on discrimination and diversity illustrates this point particularly well. Much of the work in this area has developed out of an interest in understanding and, hopefully, reducing the negative consequences of the prejudices and biases that pervade daily interactions. Research on the interpersonal dynamics of prejudice and bias is firmly grounded in psychological theories, which are used to explain the cognitive and emotional processes associated with stereotyping and intergroup relations (e.g., see Jackson, May, & Whitney, 1995). However, the social composition of organizations and work groups, as well as the larger cultural context, appear to influence these individual-level processes. Thus, improving the sense of fairness perceived by individuals in a workplace requires improving understanding of the context within which employees interact on a one-to-one basis (e.g., see Jackson, Joshi, & Erhardt, 2003; Triandis, 1995; Tsui & Gutek, 2000).

This Special Research Forum on Building Bridges across Levels was organized to encourage, promote, and support high-quality multilevel research. We begin by providing a brief summary of the evolution of multilevel research. We then describe the research published in this SRF. Finally, we look to the future and provide a few suggestions that we hope will encourage readers to embark on multilevel investigations that yield major advances in our knowledge and contribute to improvements in management practice.

THE EVOLUTION OF MULTILEVEL RESEARCH

With the benefit of hindsight, it is clear that the field of management began a slow evolutionary change almost three decades ago. Until then, it was commonplace for research dealing with individual-level phenomena to be considered “micro,” while research that dealt with organizations was considered “macro.” Usually, this distinction was quite easily made. Some work also addressed phenomena at the level of groups and organizational subunits, but it was less prevalent and had no distinct label. More importantly, few scholars made an effort to integrate theory or conduct research that crossed these levels of inquiry or analysis. In effect, two or three lines of inquiry were progressing simultaneously.

The disciplinary heritages of scholars working in these areas reinforced their differences. The micro approach was rooted in psychology and focused on understanding the thoughts, feelings, and actions of individuals. The macro approach was rooted in sociology and economics; it focused on understanding organizations and markets. The middle ground was rooted in social psychology and closely related fields such as communications. In short, the field of management was—and to a large extent, still is—fractured into specialized subfields, as evidenced by subsections of textbooks, specialized “niche” journals, and a proliferation of divisions and interest groups in the Academy of Management.

Discontent within the field of management began to build (cf. Pfeffer, 1993) as the breadth of acceptable theoretical approaches, substantive variables, research designs, and statistical analyses narrowed within each of these domains. There was little cross-pollination across specialties. The boundaries and limitations of specialized viewpoints regarding complex organizational phenomena became increasingly evident. Anomalous facts that did not fit accepted subdiscipline doctrines began to accumulate but were often dismissed as the by-products of flawed research.

However, around 1980, the first serious attempts to break the paradigm of specialization and to forge integration emerged. The field appeared ready for a paradigm shift. In an innovative yet often overlooked book, *Developing an Interdisciplinary Science of Organizations*, Roberts, Hulin, and Rousseau (1978) called for the integration of the different disciplines that studied organizations. Indeed, 30 years later, it is precisely this spirit that motivated the framework for this special research forum of the *Academy of Management Journal*.

Roberts et al. (1978) argued that the organizational outcomes of interest to management scholars

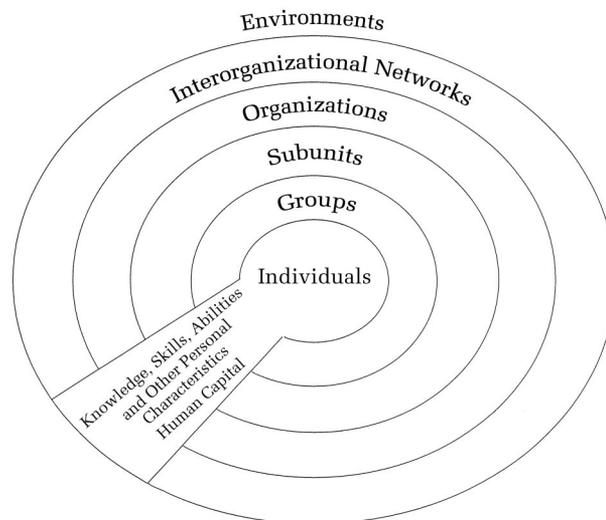
could be better understood if they broke out of their limited disciplinary, level-specific mind-sets. The authors chronicled earlier work showing that macroeconomic indicators could explain approximately 70 percent of organizational or country-wide employee turnover rates. Other research conducted during the same time period showed that about 15–20 percent of the variance in individual-level turnover was predictable using individual job attitudes. Roberts et al. (1978) concluded that the different disciplines were trying to explain largely the same criterion variance from different perspectives. They asserted that the inherent processes that predict criterion variance *within each level-specific perspective* are probably related to one another *across levels and perspectives*. They also advanced a framework for integrating work across disciplines, highlighted challenges associated with the aggregation of data, discussed how the temporal nature of organizational phenomena plays an important role in scholars' thinking, and outlined conditions for multidisciplinary theory.

Similar revelations have emerged from debates and empirical investigations aimed at explaining firm performance by examining industry-level factors and the actions taken by a firm (see recent research by Bou and Satorra [2007], Hawawini, Subramanian, and Verdin [2003], and Ruefli and Wiggins [2003]). Industrial organization economists (e.g., Porter, 1980) emphasized the overwhelming importance of industry structure in determining firm outcomes, and strategic management scholars focused on the importance of firm resources and strategies applying those resources in achieving a competitive advantage (Barney, 1991; Hoskisson, Hitt, Ireland, & Harrison, 2008). The debate continues, but many scholars now integrate the two perspectives, suggesting that industry structure and firm resources both play important roles in determining the appropriate strategies for firms to employ. Thus, the determination of firm strategy is a multilevel problem.

Both theoretical and analytical advances in multilevel research were achieved in the 1980s. These advances were built on historical foundations that evolved over long periods of time in other disciplines—most notably, sociology, education, and psychology—that had confronted related challenges. The assumption underlying the multilevel approach is that many outcomes of interest are the result of a confluence of influences emanating from different levels of analysis (House, Rousseau & Thomas-Hunt, 1995; Rousseau, 1985).

The central theme of multilevel thinking is that organizational entities reside in nested arrangements. Figure 1 depicts an example of such nesting.

FIGURE 1
Multilevel Nesting Arrangement



The overall logic is that individuals are nested in work groups, which in turn are nested in larger organizational units, such as departments or strategic business units (SBUs), which are nested in national or multinational organizations. Furthermore, organizations are nested in networks of interorganizational relationships (e.g., strategic alliances), which in turn are nested in overall performance environments. Although the exact number and nature of layers are likely to vary from one investigation to another, the nesting arrangement has certain implications for organizational theory and research.

Whenever research traverses levels of analysis, it becomes more complex, and scholars must be vigilant about carefully articulating the theoretical bases of their work. Rousseau (1985) provided a useful framework to guide such efforts. She argued that scholars need to simultaneously consider the levels of theory, measurement, and analysis for the constructs included in their investigations. Level of *theory* refers to the focal level to which generalizations are meant to apply. “Level of *measurement* refers to the unit to which the data are directly attached . . . [whereas] the level of *analysis* is the unit to which data are assigned for hypothesis testing and statistical analysis” (Rousseau, 1985: 4). Critically, these three facets must be aligned to minimize level-related confounds, or what are often referred to as “fallacies of the wrong level.” Arregle, Hebert, and Beamish (2006) presented an example of these problems and their consequences in international business research, as well as a model for how they could be managed.

We should note that a *multilevel theory* is not a substitute for a *multilevel design*. For example, researchers drawing on Hambrick and Mason's (1984) upper echelons theory have argued that behavioral integration, and thereby organizational performance, is driven by characteristics of a firm, its top management team (TMT), and its CEO. Clearly, upper echelons theory is multilevel in nature in that it incorporates features of individuals, groups, and organizations. However, tests of this theory typically have been conducted at a single level (Cannella & Holcomb, 2005). For example, Simsek, Veiga, Lubatkin, and Dino (2005) tested propositions about behavioral integration derived from upper echelons theory using a sample of several hundred organizations, but their design used a single-level model tested at the organizational level of analysis. Because there is only one CEO and one TMT per organization, they were unable to use the traditional nesting arrangement requiring that multiple lower-level entities be nested within an upper-level entity. Usually, testing a multilevel theory necessitates a multilevel design, but not always. Thus, although the focus on behavioral integration represented an advance beyond much upper echelons research, the contribution was constrained by the single-level approach that has been common in management research.

Level of Theory

A key attribute of the level of theory is the notion of *focal unit*. Focal units are entities about which one wishes to make generalizations (e.g., individuals, groups, organizations, etc.). The distinction between individuals and collectives is relatively easy to make, but it can be more challenging to identify the precise boundary where one collective ends and another begins (e.g., groups), as well as the point at which one has moved beyond one level of analysis (e.g., SBU) and into another (e.g., organization). Such distinctions are even more difficult in the age of team-based organizations, communities of practice, networks, strategic alliances, virtual organizations, and multinational enterprises.

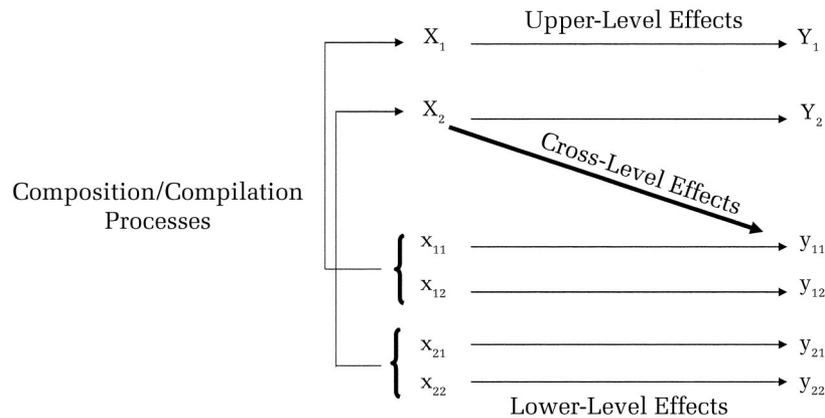
Before examining relationships between entities, within or across levels of analysis, one must first be able to determine that such entities exist. Researchers often rely on formal designations, such as assignment to a work team, full-time employment in an organization, SIC code, or country location. Such conventions are not always satisfactory, however. The boundaries around a standing work team may be easy to specify, but defining the boundaries of ad hoc task forces and communities of practice is much more difficult. Similarly, if an organization

employs a large number of part-time or temporary workers, should they be considered organizational members? If two organizations are bitter rivals in most markets but have recently launched a joint venture, where do they fall in the nested arrangement shown in Figure 1?

Subdisciplines have confronted the challenge of defining focal units of theory and analysis. For example, Hackman submitted that work groups are "intact social systems, complete with boundaries, interdependence among members, and differentiated member roles" (1990: 4). Hackman further specified that work groups (1) have one or more shared purposes, (2) have tasks to perform, (3) operate in an organizational context, and (4) have consequential transactions with entities outside the group boundary. Such definitions are models of clarity and precision and thereby are both powerful and helpful. But even with clear definitions to guide them, researchers are likely to experience some ambiguity when specifying focal units. For instance, how much agreement is needed among a group's members for an observer to conclude they have a "shared" purpose? How stable must a group's membership be for it to be considered "intact"? How much interdependence, of what type, among what proportion of members, for what periods of time, is sufficient to justify a group's definition as a work *group*? In the end, the focal units of a theory are often difficult to define and identify. Nevertheless, the adequacy of a multilevel theory rests squarely on how well this is done.

After a focal unit for generalization is identified, a multilevel theory can be developed. That is, predictions can be made about how entities are related to each other, and through what processes. Figure 2 depicts a simplified two-level arrangement that shows possible relationships among entities in a multilevel theory. The relationships involving *lower-level* constructs are shown using lower-case letters ($x \rightarrow y$). The relationships involving *upper-level* variables are shown using upper-case letters ($X \rightarrow Y$). Figure 2 depicts in greater detail the relationships suggested by the nested rings shown in Figure 1. The two levels shown in Figure 2 could correspond to individuals in groups, SBUs, organizations, or many other combinations of nested entities. The prevailing logic in management research is that the larger context within which lower-level processes are nested generally exerts a stronger downward influence, and the lower-level variables generally exert a weaker upward influence. However, a multilevel perspective does not preclude the possibility of upward and reciprocal influences (Griffin, 1997; Kozlowski & Klein, 2000). We return to this point later.

FIGURE 2
Two-Level Relationships



Level of Measurement

Level of measurement refers to the level of the entities from which data are derived. Whenever the level of measurement used in research differs from the level of analysis (discussed below), some justification for aggregating lower-level data is needed. For example, one might have individuals answer survey items about their own work attitudes and how they behave in their group. In that case, the work attitudes would be naturally aligned with individual constructs at the individual level of analysis. However, if one wished to use the individual-level data to test hypotheses about group-level phenomena, the level of measurement (individual) and the level of theory and analysis (group) would be different. Before the individual-level data are used to measure group-level phenomena, psychometric evidence of the suitability of using the data in this way should be demonstrated. Depending on the nature of the constructs in question, different types of validity evidence should be provided (see Chan, 1998; Chen, Mathieu, & Bliese, 2004). More generally, however, when conducting multilevel investigations, researchers need to be explicit about how data collected at one level of analysis are related to constructs at a higher level of analysis. Two aggregation principles for identifying the relationship between lower-level data and higher-level constructs are composition and compilation.

Composition refers to the use of simple descriptive statistics to represent the processes that associate lower-level data with higher-level constructs. For example, one might use the average of individuals' competencies to represent organizational human capital. Alternatively, researchers might use measures of the variance in members' demographic

characteristics, functional backgrounds, and so forth as indicators of group-level diversity.

Compilation is an aggregation principle in which measures collected from lower-level entities are combined in complex and nonlinear ways to yield a gestalt, or whole, that is not reducible to its constituent parts (Kozlowski & Klein, 2000). For example, Ellis, Bell, Ployhart, Hollenbeck, and Ilgen (2005) advanced a model of team competencies in which the characteristics of some members (e.g., the most central person for information flow) contribute more to an overall index of team abilities than do the characteristics of other (e.g., more peripheral) members.

In summary, when the level of measurement is different from the level of analysis, researchers must use an underlying theory to guide their approach for aggregating lower-level data to measure higher-level constructs. The nature of the higher-level construct and the processes that researchers believe relate the lower-level data to the higher-level construct will determine the type of evidence needed to justify the aggregation of scores.

Level of Analysis

Except under extremely limited circumstances, the level at which data are analyzed to test hypotheses should be aligned with the level of theory for the constructs involved. To the extent that the levels of theory and analysis are misaligned, misspecifications of various forms will arise. As noted earlier, Rousseau (1985) referred to such misspecifications as "fallacies of the wrong level."

Historically, every researcher has faced a decision as to *which* level of analysis to adopt. Choos-

ing a single level sometimes led to misalignment between the levels of theory and analysis—particularly when predictors were hypothesized to reside at different levels than focal units. Fortunately, more sophisticated methods for analyzing multi-level data have been developed, such as *within and between analysis* (WABA; see Dansereau & Yammarino, 2000), and *cross-level operator techniques* (CLOP; see James & Williams, 2000). Although these techniques have bolstered multilevel research throughout the past two decades, recent developments have proven to be more flexible and appropriate for multilevel data arrangements. Most notably, *random coefficients modeling* (RCM) has seemingly become the analysis of choice, as evidenced, at least in part, by the submissions that we received for this issue. Hofmann (1997) provided a cogent introduction of the technique to organizational researchers, and its popularity is quite evident today. However, RCM is not a panacea, nor necessarily appropriate, for all multilevel investigations.

RCM can be performed using a wide variety of software packages, the most popular of which seems to be *hierarchical linear modeling* (HLM; Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2004). Easy-to-use software has enabled more widespread use of RCM, but there remain a number of methodological, design, and analytical issues to be resolved. For example, questions about how many lower- and upper-level entities should be sampled in cross-level investigations provide both scientific and practical challenges. In multilevel designs, statistical power is a complex combination of the number of higher-level units and lower-level units under investigation. Although some software programs allow researchers to make a priori estimates of the power of multilevel designs, these applications are far more complex than their single-level counterparts (cf. Raudenbush, 1997; Snijders & Bosker, 1993).

The heterogeneity of multilevel sampling frames also influences power estimates and the inferences that can be drawn from multilevel studies. Consider an instance in which one collects work attitude data from a sample of engineers drawn from a wide variety of organizations. Contrast that sampling frame to collection of the same work attitude data from a wide variety of employees who work for subsidiaries of one large corporation. In the first case, the sampling frame is likely to result in more variance at the higher level—e.g., the organizational level—which substantially favors finding significant higher-level effects. In the second case, the relatively high amount of heterogeneity at the lower (the individual) level favors finding signifi-

cant lower-level effects (cf. Cohen, 2005; Moerbeek, van Breukelen, & Berger, 2000).

In multilevel studies, the scaling of measures also has important implications for the inferences that are drawn from the data. The decision to center lower-level data within each higher-level unit or around the overall mean affects the interpretation of the RCM intercept and slope parameters (Hofmann & Gavin, 1998). In short, centering decisions are not simply statistical choices made in a vacuum; they are predicated on underlying theory about the multilevel relationships.

Recent work has extended RCM cross-level analysis to include the role of mediators. Both conceptual and analytic challenges emerge when introducing mediators that reside at the higher versus the lower level of analysis, or operate from both levels (cf. Bauer, Preacher, & Gil, 2006; Mathieu & Taylor, 2007). Finally, we should note that multilevel versions of *structural equation modeling* techniques (ML-SEM) have also recently been introduced (Muthén & Muthén, 2007). Like their single-level counterparts, ML-SEM techniques permit researchers to consider the influence of measurement errors and to assess the relative fits of entire structural models. The development of these sophisticated ML-SEM techniques is encouraging, yet to date their application has been limited to fairly simplistic models that include only a few variables. Additional work is needed before they can accommodate the complexity of modern-day management theories. Nevertheless, they hold great promise for the future. Moreover, given the ambiguities inherent in multilevel research, the use of qualitative methodologies appears to be particularly suitable.

The field of management has come a long way during the past 30 years. Current research shows much greater sensitivity to multilevel issues, including those associated with theoretical development, approaches to measurement, and analytical techniques, yet many opportunities for further development remain. The research presented in this special research forum exemplifies the diversity and richness of multilevel management research. Next, we concisely describe the studies in this SRF.

SUMMARY OF ARTICLES IN THE SPECIAL RESEARCH FORUM

As the foregoing discussion makes clear, multilevel scholarship is already well underway in the field of management. This SRF is intended to move the field forward a bit more rapidly than might otherwise occur by encouraging such work and publishing several examples that illustrate the many forms such research can take.

In response to the call for papers, we received 99 manuscripts for possible publication in this Special Research Forum on Building Bridges across Levels. The articles selected for publication survived an intensive review and development process, which screened out a large number of papers. The full set of articles we reviewed included many highly interesting research ideas and studies. Surprisingly, however, several of the manuscripts submitted did not fully represent multilevel empirical research. Some of those manuscripts were of sufficiently high quality that they have been accepted and published in regular issues of the *Academy of Management Journal*. We are pleased to present the following papers in this special research forum. Table 1 provides a finer-grained description of each study's characteristics. The table entries briefly indicate the research focus, the levels of analysis examined, and the methodological approach used.

In "Does Prevalence Mitigate Relevance? The Moderating Effect of Group-Level OCB on Employee Performance," authors William Bommer, Erich Dierdorff, and Robert Rubin examine the multilevel moderating effects of group-level organizational citizenship behavior (OCB). Past research has established a clear relationship between individual-level OCB and individual performance. For this study, the Bommer et al. (2007) reasoned that this individual-level effect should be stronger in work teams for which OCB is distinctive and relatively rare; in work teams with higher levels of OCB occurring among all members, the relationship between individual-level OCB and performance was predicted to be weaker. In a study of 100 teams distributed across seven locations of a U.S. machined metals manufacturer, the authors found support for the predicted multilevel moderating effect.

"Interlevel Influences on the Reconstruction of Professional Role Identity," by Samia Chreim, Bernie Williams, and Bob Hinings, describes the interplay of institutional, organizational, and personal factors that together shaped the reconstruction of the professional role identities of eight physicians in a medical setting. Using a longitudinal case research design, Chreim and her colleagues (2007) gathered qualitative data by observing meetings, conducting multiple interviews, and compiling written material. Their analysis tracked the changes in professional role identities that occurred among the physicians as they went from working as independent practitioners to working as a multidisciplinary team of collaborators providing integrated medical services. The authors' analysis revealed the dynamics through which institutional structure and individual agency collectively influ-

enced the reconstruction of professional role identities.

In "A Multilevel Investigation of Antecedents and Consequences of Team Member Boundary-Spanning Behavior," Jennifer Marrone, Paul Tesluk, and Jay Carson examine boundary spanning in the context of 31 MBA student teams working on consulting projects for periods of about a month. In the settings studied, greater levels of team boundary spanning were associated with higher team performance. The multilevel analysis showed that team-level boundary spanning also yielded benefits to individual team members by reducing their role overload. Finally, Marrone et al. (2007) demonstrated that team-level boundary spanning could be predicted by examining both individual and team-level factors.

In "Disentangling the Influences of Leaders' Relational Embeddedness on Interorganizational Exchange," Jeffrey Barden and Will Mitchell examine the roles of the prior exchange experiences of organizations and individual leaders in subsequent interorganizational exchanges. They focused on mutual understanding, trust, and commitment to develop a microlevel model of organization-level relationships. Their study of player trades in Major League Baseball showed that interorganizational exchanges were influenced more by an organization's set of ties than by individual leaders' ties. Barden and Mitchell (2007) found that leaders' individual influence on interorganizational exchanges was largely based on the contexts of their organizations. As such, the leaders had little independent influence; rather, the effects of that influence became visible in the interaction with organizational influences.

In "Deciding to Bribe: A Cross-Level Analysis of Firm and Home Country Influences on Bribery Activity," Kelly Martin, John Cullen, Jean Johnson, and Praveen Parboteeah examine how organization-level and contextual pressures combine to influence firms' supplying bribes to public officials. Using anomie theory as a theoretical foundation, the authors proposed that social institutions, national culture, and perceived financial and competitive pressures all play important roles in determining the likelihood of bribery. Using archival data involving 3,769 firms and 38 institutional and cultural contexts, Martin and her coauthors (2007) found support for anomic conditions at both the firm and societal levels. The results indicate that the propensity to bribe is greater in achievement-oriented, individualistic societies than in collectivist societies. The results also indicate that firms in achievement-oriented environments, in which decision makers perceive high levels of competitive

TABLE 1
Description of Studies in the Special Research Forum

	Title/Authors	Topic	Levels of Analysis	Literature	Sample	Methodology	Analytical Technique
1	"A Multilevel Investigation of Antecedents and Consequences of Team Member Boundary-Spanning Behavior," by Jennifer Ann Marrone, Paul E. Tesluk, and Jay B. Carson	Antecedents and consequences of boundary-spanning activities	Individual; group	Boundary spanning; cross-functional teams	MBA students	Three surveys implemented at three different points in time	Hierarchical linear modeling
2	"Deciding to Bribe: A Cross-Level Analysis of Firm and Home Country Influences on Bribery Activity," by Kelly D. Martin, John B. Cullen, Jean L. Johnson, and K. Praveen Parboteeah	Multiple forces affecting bribery	Organization; country	Institutional norms; anomie theory	Third-party surveys, such as the World Business Environment Survey, the Global Leadership and Organizational Behavior Effectiveness Study, and the United Nations Human Development Report	Archival data	Hierarchical linear modeling
3	"Does Prevalence Mitigate Relevance? The Moderating Effect of Group-Level OCB on Employee Performance," by William H. Bommer, Erich C. Dierdorff, and Robert S. Rubin	OCB as a multilevel construct	Individual; group	Organizational citizenship behavior	Works groups and individual employees	Multilocation, multilevel surveys	Hierarchical linear modeling
4	"Interlevel Influences on the Reconstruction of Professional Role Identity," by Samia Chreim, Bernard E. Williams, and C. R. Hinings	Role reconstruction as a result of multilevel forces	Individual; organizational environment	Role identity and professional identity	A Canadian health clinic	Single-case study (nonparticipant observation, interviews, archival data)	Textual analysis
5	"Prospect Theory, Behavioral Theory, and the Threat-Rigidity Thesis: Combinative Effects on Organizational Decisions to Divest Formerly Acquired Units," by Katsuhiko Shimizu	Forces affecting risk-seeking behavior of organizations	Individual; organization	Prospect theory; behavioral theory; the threat-rigidity thesis	Purposeful U.S.-based firms that had divested a division identified within the database Mergers and Corporate Transactions	Archival data	Event history analysis
6	"When Does National Identity Matter? Convergence and Divergence in International Business Ethics," by Wendy Bailey and Andrew Spicer	Existence of hypernorms and universal ethics	Individual; country; global	Integrative social contracts theory	Managers from the United States and Russia	Experimental surveys	Test for equal means; repeated-measures analysis of covariance
7	"Disentangling the Influences of Leaders' Relational Embeddedness on Interorganizational Exchange," by Jeffrey Barden and Will Mitchell	Role of individual leaders' and organizational ties in interorganizational exchange	Individual; organization	Social capital; relational embeddedness	Player trades between Major League Baseball organizations	Archival data	Survival analysis (Cox regression)

intensity, exhibit an even greater likelihood of engaging in bribing behavior.

“Prospect Theory, Behavioral Theory, and the Threat-Rigidity Thesis: Combinative Effects on Organizational Decisions to Divest Formerly Acquired Units,” by Katsuhiko Shimizu, extends prospect theory, with its notion of risk seeking and risk avoidance, to the organizational level of analysis. In addition to examining the main relationship between unit performance and choice to divest, Shimizu (2007) used behavioral theory and the threat-rigidity thesis to develop a set of moderating factors. Longitudinal archival data on 68 U.S. firms that divested 68 units from 1988 through 1998 were used in hypothesis testing. Event history analysis showed that the main effect was indeed nonlinear and that differing levels of ambiguity, lack of improvement in unit performance, resource availability, divestiture experience, and relative unit size produced significant interaction effects.

In “When Does National Identity Matter? Convergence and Divergence in International Business Ethics,” Wendy Bailey and Andrew Spicer examine differences between and among members of national groups. Focusing on convergence as well as divergence of ethical beliefs, the authors built on integrative social contracts theory to predict when such beliefs would be similar rather than different. Using an experimental design, each with six survey scenarios, Bailey and Spicer (2007) compared the conditional effects of hypernorms and local norms on national and expatriate differences using a sample of managers from both Russia and the United States. Statistical results showed the similarity in ethical attitudes between the two country groups when hypernorms are present in their situations, as well as a similarity between Russian managers and U.S. expatriates working within Russia, thereby lending support to the hypothesized notion of convergence.

THE REST OF THE STORY: OPPORTUNITIES AND VALUE IN MULTILEVEL RESEARCH

It is apparent that multilevel thinking has been increasing in importance among management scholars. A review of the articles published in the *Academy of Management Journal* during a recent 12-month period (August 2006–July 2007) revealed that approximately 25 percent of the studies adopted some type of multilevel perspective. By comparison, an examination of articles published in the *Academy of Management Review (AMR)* during the same period revealed that discussions of multilevel phenomena were significant in approximately 50 percent of the articles. These percent-

ages are only estimates because one could use several different criteria for identifying articles as multilevel. Regardless of their approximate nature, however, these percentages indicate that multilevel considerations are more likely to be reflected in our conceptual models than in our empirical research.

The opportunities for new multilevel research are many, and they arise out of both theoretical and methodological considerations. For example, there are opportunities to examine whether particular phenomena appear at multiple levels of analysis. One such research question is, Do patterns of conflict found within teams also appear in the patterns of interactions among rival firms? Research that incorporates more than two levels of analysis also represents an opportunity for improving understanding of organizational life. For example, in a study of gender-based pay differentials, Joshi, Liao, and Jackson (2006) demonstrated that pay differentials reflected the interplay of individual, team, and subunit influences. Certainly, research on the relationship between lower-level phenomena, such as employee attitudes and behaviors, and organizational phenomena, such as firm-level outcomes (e.g., financial performance), is also needed (e.g., Schneider, Hanges, Smith, & Salvaggio, 2003). Also potentially valuable is research that investigates the role of interfirm relationships within networks or between alliance partners in the development of new products, market performance, and so on (Almeida & Phene, 2004; Yamin & Otto, 2004). We also need more research to help us understand the differences in the effects of national cultures and institutional arrangements on the dynamics of firm strategies and interfirm behaviors such as subsidiary and home office relationships (Gamble, 2003; Hitt, Dacin, Levitas, Arregle, & Borza, 2000; Makino, Isobe, & Chan, 2004).

Undoubtedly, a variety of methodologies will prove useful in the conduct of such research, including triangulation approaches. Intensive case studies and other forms of qualitative research may be especially useful for understanding multilevel phenomena such as organizational changes and reactions to crises (e.g., Dutton & Dukerich, 1991). Similarly, a variety of theoretical perspectives will likely prove useful. New insights might be gained by innovative research that applies microlevel theories to phenomena usually examined at the macro level; likewise, applying macrolevel theories to microlevel phenomena may yield new insights. For example, the resource-based view of the firm might be applied to improve our understanding of some aspects of individual and team-level behaviors (see the work of Barney [1992]).

Going forward, we hope that this forum catalyzes

an increase in multilevel empirical research to match the increase in multilevel conceptual work. Toward that end, we offer the following suggestions for the future.

Test Existing Models

Our first suggestion is quite simple: Conduct empirical studies to test the conceptual models that have already been developed. *AMR's* Special Topic Forum on Corporations as Social Change Agents illustrates how multilevel thinking is informing new conceptual developments in the field of management. In the introduction to that special topic forum (STF), the editors asserted that an understanding of corporate social change activities "involves examination of corporate social agency at multiple levels of analysis: the micro level (focusing on psychological and social psychological bases), the meso level (involving relational and network issues), and the macro level (involving political, economic, institutional and societal dynamics)" (Bies, Bartunek, Fort, & Zald, 2007: 789). The multilevel and multidisciplinary character of social change is reflected in both the STF as a whole and in specific articles. Examining the gestalt, one finds a collection of articles that address phenomena at different levels of analysis. For example, Brickson (2007) presented a discussion of organizational identity orientations and their implications for various groups of stakeholders, and King (2007) discussed how transaction costs can influence a firm's relationships with stakeholders. Campbell (2007) and Marquis, Glynn, and Davis (2007) described how community-level institutional pressures can shape corporate-level action. Aguilera, Rupp, Williams, and Ganapathi (2007) considered four levels of analysis in a discussion of the motives of individual, organizational, national, and intergovernmental agents that pressure firms to engage in social change through socially responsible corporate behavior. Of course, *AMR* is not the only source of good ideas for multilevel research. Often, edited books that focus on single topics of interest integrate articles that address the same phenomena at different levels of analysis.

Look Up

Work that considers how phenomena at lower levels of analysis influence higher-level phenomena is much less common than work that does the reverse. In the *AMR* forum on social change, Den Hond and de Bakker (2007) illustrated this type of multilevel theorizing. They integrated the literatures on social movements and institutional change

to develop a model for understanding the behavior of activist groups as they attempt to bring about institution-level change. In another example, Hoetker and Agarwal (2007) investigated the effects on knowledge diffusion within an industry of firm exits from that industry. In the special research forum articles presented in this issue of *AMJ*, the upward influences of individuals on groups, organizations, and institutions were sometimes acknowledged, but they were rarely the focus. Only Barden and Mitchell focused on upward influences, by examining the effects of individual ties on organizational ties. They found that individual ties influenced future interorganizational exchanges but only when integrated with organizations' prior ties.

As organizations continue to evolve in an environment characterized by global networks of individuals and special interest groups, opportunities for studying bottom-up phenomena are likely to grow. Scholars' understanding of organizations could be enriched immensely by multilevel studies that investigate the forces of upward influence in addition to the top-down forces that shape complex phenomena. In a discussion of this point, Hackman (2003) identified the following benefits of looking both one level down and one level up for scholars interested in understanding groups or teams: an enriched understanding of a focal phenomenon, the discovery of nonobvious forces that influence the focal phenomenon, discovering interactions that involve higher-level forces that shape the focal phenomenon, and developing better theories. We believe that scholars examining phenomena at any level of analysis could reap these same benefits by thinking carefully about how the phenomena both influence and are influenced by forces operating at higher and lower levels of analysis.

Collaborate across Disciplines

Our third suggestion for readers interested in pursuing multilevel empirical work is to become involved in multidisciplinary collaborations with people interested in similar topics. As the field of management continues to grow, it becomes increasingly important to consider and integrate the developments that are occurring outside of specialty areas and in adjacent disciplines. However, reading all of the published research in one's own specialty (within our discipline) with relevance to one's own work is a significant challenge. As a consequence, future excellent multilevel research is more likely to be conducted by multidiscipline teams of scholars who are motivated to investigate complex organizational phenomena.

In the call for papers for this special research

forum, we invited articles that link management research to other disciplines. The field of management is firmly rooted in several disciplines, including economics, sociology, and psychology. For many of us, doing research that encompasses at least two of these disciplines is a substantial challenge. Perhaps for these reasons, we received very few submissions that adopted a larger multidisciplinary perspective and found none to include in this SRF. As our review of the evolution of multi-level work revealed, the management discipline has evolved and benefited from developments in other fields. We have been good at *adapting advances* from other fields (e.g., analytical techniques), but we have been slower to *integrate* works from other disciplines. Echoing calls from long ago for such integration (Roberts et al., 1978), we suggest that our field could be enriched by building such bridges. In fact, Agarwal and Hoetker (2007) argued that the management field could be enhanced by integrating the theory and empirical work of other, related social science disciplines (e.g., economics, sociology).

Tackle Major Real-World Problems

Becoming involved in multidisciplinary collaborations is an aspect of our fourth and final suggestion for the future—namely, tackle important, real-world problems. In his 2006 Academy of Management presidential address, Tom Cummings asserted that “the future vitality and success of our profession depends on making sure our research-based knowledge is relevant and useful. This will require the Academy of Management . . . to be far more engaged with the real world than has traditionally been the case” (Cummings, 2007: 355). Toward this end, Cummings encouraged the development of alliances between the Academy of Management and organizations such as the United Nation’s Global Compact, the Aspen Institute, the Business Roundtable, and the American Association of Collegiate Schools of Business. He envisioned management scholars working with such organizations tackling problems such as international trade, bribery and corruption, emergency preparedness, and global outsourcing. These are large, complex issues. If management scholars hope to provide useful, actionable knowledge to such organizations, we must think seriously about the questions we ask. Are we satisfied with helping to resolve only small pieces of problems, hoping to publish the results in one or two *AMJ* articles? Or are we willing to commit to conducting much larger and more complex research projects to address problems similar to those identified above?

The Academy of Management’s recent discussions with the U.S. Institute of Medicine (IOM) illustrates how engaging big real-world problems reveals the need for knowledge created through interdisciplinary and multilevel research (Academy of Management, 2007). Among its many activities, the IOM is centrally involved in ongoing discussions about how to improve the quality and efficiency of health care in the United States. Unfortunately, in developing its policy recommendations for improving health care, the IOM has not effectively used relevant and potentially helpful management research. To remedy this situation, a committee of AOM scholars prepared a report that would “*begin* to demonstrate how the application of management research might inform and expand the IOM’s work, particularly with regard to the development of recommendations that may be successfully implemented” (Academy of Management, 2007). Members of the AOM reviewed several recent IOM reports that outlined a vision for the U.S. health care system. The IOM reports reflected the accumulated knowledge of economists and medical scholars but cited almost none of the management literature.

Even without technical knowledge about the U.S. health care system, we know that improving the delivery of health care will require making changes at multiple levels. At the individual level are patients and their family members; physicians, nurses, and myriad other health professionals; employees of health insurance companies; human resource management professionals responsible for administering health care benefits; and so on. These individuals are embedded in various types of organizations. Because employers are a major source of health care insurance, employment settings are relevant. Of course, hospitals, private medical practice groups, and insurance companies are central players, as are a variety of professional associations, such as the American Medical Association. For some aspects of medical care, funding from the federal government is administered through the states, so state-level dynamics must be addressed also.

Improving health care requires intervening in a complex, multilevel system. To be effective, interventions must be designed to correctly anticipate responses by the many elements comprising the system. Can management scholars accumulate the type of compelling empirical evidence necessary to make accurate predictions about the consequences of specific changes in the U.S. health care system? Can we confidently make recommendations about how to design financial incentives to improve health outcomes and/or organizational efficiency?

Can we confidently predict how individual physicians will react to new measurement and reporting requirements? A close reading of the Academy's report for the IOM suggests that our conceptual models should be helpful to the IOM as it tackles these problems, but our empirical base of knowledge at this stage is anemic. Members of the Academy could be ideal participants in future research designed to evaluate the consequences of implementing new management practices in the health care field. Out of such engagement with this very pressing real-world problem, management scholars would almost certainly develop a deeper knowledge base. That knowledge would reflect more of the multilevel complexities inherent in large real-world problems, and it also would be informed by the knowledge of collaborators from other disciplines. We have both much to offer to such efforts, and much to learn from the exchanges.

The example of the AOM's developing relationship with the IOM illustrates the importance of and the need for more multilevel research. Clearly, improving the U.S. health care system is only one of many large and important problems of potential interest to management scholars. Regardless of the particular problem one chooses, it seems likely that collaborating with scholars from other disciplines to address major real-world problems will lead to more useful multilevel research. Furthermore, increasing multilevel research is critical to enrich and enhance our understanding of organizational phenomena. Thus, we call for and expect multilevel research to be one of the major steps that will move the management field into prominence in the future.

REFERENCES

- Academy of Management. 2007. *Applying organizational research and theory to Institute of Medicine (IOM) reports: A review of three IOM reports*. Briarcliff Manor, NY: Academy of Management.
- Agarwal, R., & Hoetker, G. 2007. A Faustian bargain? The growth of management and its relationship with related disciplines. *Academy of Management Journal*, 50: 1304–1322.
- Aguilera, R. V., Rupp, D. E., Williams, C. A., & Ganapathi, J. 2007. Putting the S back in corporate social responsibility: A multilevel theory of social change in organizations. *Academy of Management Review*, 32: 836–863.
- Almeida, P., & Phene, A. 2004. Subsidiaries and knowledge creation: The influence of the MNC and host country on innovation. *Strategic Management Journal*, 25: 847–864.
- Arregle, J.-L., Hebert, L., & Beamish, P. W. 2006. Mode of international entry: Advantages of multilevel methods. *Management International Review*, 5: 557–618.
- Bailey, W., & Spicer, A. 2007. When does national identity matter?: Convergence and divergence in international business ethics. *Academy of Management Journal*, 50: 1462–1480.
- Barden, J. Q., & Mitchell, W. 2007. Disentangling the influences of leaders' relational embeddedness on interorganizational exchange. *Academy of Management Journal*, 50: 1440–1461.
- Barney, J. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17: 99–120.
- Barney, J. B. 1992. Integrating organizational behavior and strategy formulation research: A resource-based analysis. In P. Shrivastava, A. Huff, & J. Dutton (Eds.), *Advances in strategic management*, vol. 8: 39–61. Greenwich, CT: JAI Press.
- Bauer, D. J., Preacher, K. J., & Gil, K. M. 2006. Conceptualizing and testing random indirect effects and moderated mediation in multilevel models: New procedures and recommendations. *Psychological Methods*, 11: 142–163.
- Bies, R. J., Bartunek, J. M., Fort, T. L., & Zald, M. N. 2007. Introduction to special topic forum: Corporations as social change agents: Individual, interpersonal, institutional, and environmental dynamics. *Academy of Management Review*, 32: 788–793.
- Bliese, P. D. 2000. Within-group agreement, non-independence, and reliability: Implications for data aggregation and analyses. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*: 349–381. San Francisco: Jossey-Bass.
- Bommer, W. H., Dierdorff, E. C., & Rubin, R. S. 2007. Does prevalence mitigate relevance? The moderating effect of group-level OCB on employee performance. *Academy of Management Journal*, 50: 1481–1494.
- Bou, J. C., & Satorra, A. 2007. The persistence of abnormal returns at industry and firm levels: Evidence from Spain. *Strategic Management Journal*, 28: 707–722.
- Brickson, S. L. 2007. Organizational identity orientation: The genesis of the role of the firm and distinct forms of social value. *Academy of Management Review*, 32: 864–888.
- Campbell, J. L. 2007. Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review*, 32: 946–967.
- Cannella, A. A., & Holcomb, T. R. 2005. A multi-level analysis of the upper-echelons model: Multi-level issues in strategy and methods. *Research in Multi-Level Issues*, 4: 197–237.

- Chan, D. 1998. Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models. *Journal of Applied Psychology*, 83: 234–246.
- Chen, G., Mathieu, J. E., & Bliese, P. D. 2004. A framework for conducting multilevel construct validation. In F. J. Dansereau & F. Yammarino (Eds.), *Research in multi-level issues: The many faces of multi-level issues*, vol. 3: 273–303. Oxford, U.K.: Elsevier Science.
- Chreim, S., Williams, B. E., & Hinings, C. R. 2007. Inter-level influences on the reconstruction of professional role identity. *Academy of Management Journal*, 50: 1515–1539.
- Cohen, M. P. 2005. Sample size considerations for multilevel surveys. *International Statistical Review*, 73(3): 279–287.
- Cummings, T. G. 2007. 2006 Presidential address: Quest for an engaged academy. *Academy of Management Review*, 32: 356–360.
- Dansereau, F., & Yammarino, F. J. 2000. Within and between analysis: The variant paradigm as an underlying approach to theory building and testing. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*: 425–466. San Francisco: Jossey-Bass.
- den Hond, F., & de Bakker, F. G. A. 2007. Ideologically motivated activism: How activist groups influence corporate social change activities. *Academy of Management Review*, 32: 901–924.
- Dutton, J. E., & Dukerich, J. M. 1991. Keeping an eye on the mirror: Image and identity in organizational adaptation. *Academy of Management Journal*, 34: 517–554.
- Ellis, A. P. J., Bell, B. S., Ployhart, R. E., Hollenbeck, J. R., & Ilgen, D. R. 2005. An evaluation of generic teamwork skills training with action teams: Effects on cognitive and skill-based outcomes. *Personnel Psychology*, 58: 641–672.
- Gamble, J. 2003. Transferring human resource practices from the United Kingdom to China: The limits and potential convergence. *International Journal of Human Resource Management*, 14: 369–387.
- Griffin, M. A. 1997. Interaction between individuals and situations: Using HLM procedures to estimate reciprocal relationships. *Journal of Management*, 23: 759–773.
- Hackman, J. R. 1990. *Groups that work (and those that don't)*. San Francisco: Jossey-Bass.
- Hackman, J. R. 2003. Learning more about crossing levels: Evidence from airplanes, hospitals, and orchestras. *Journal of Organizational Behavior*, 24: 905–922.
- Hambrick, D. C., & Mason, P. A. 1984. Upper echelon: The organization as a reflection of its top managers. *Academy of Management Review*, 9: 193–206.
- Hawawini, G., Subramanian, V., & Verdin, P. 2003. Is Performance driven by industry- or firm-specific factors? A new look at the evidence. *Strategic Management Journal*, 24: 1–16.
- Hitt, M. A., Dacin, M. T., Levitas, E., Arregle, J.-L., & Borza, A. 2000. Partner selection in emerging and developed market contexts: Resource-based and organizational learning perspectives. *Academy of Management Journal*, 43: 449–467.
- Hoetker, G., & Agarwal, R. 2007. Death hurts, but it isn't fatal: The postexit diffusion of knowledge created by innovative companies. *Academy of Management Journal*, 50: 446–467.
- Hofmann, D. A. 1997. An overview of the logic and rationale of hierarchical linear models. *Journal of Management*, 23: 723–744.
- Hofmann, D. A., & Gavin, M. B. 1998. Centering decisions in hierarchical linear models: Implications for research in organizations. *Journal of Management*, 24: 623–641.
- Hoskisson, R. E., & Hitt, M. A. 1990. Antecedents and performance outcomes of diversification: Review and critique of theoretical perspectives. *Journal of Management*, 16: 461–509.
- Hoskisson, R. E., Hitt, M. A., Ireland, R. D., & Harrison, J. R. 2008. *Competing for advantage*. Mason, OH: Thomson South-Western Publishing.
- House, R., Rousseau, D. M., & Thomas-Hunt, M. 1995. The meso paradigm: A framework for the integration of micro and macro organizational behavior. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior*, vol. 17: 71–114. Greenwich, CT: JAI Press.
- Jackson, S. E., Joshi, A., & Erhardt, N. L. 2003. Recent research on team and organizational diversity: SWOT analysis and implications. *Journal of Management*, 29: 801–830.
- Jackson, S. E., May, K. E., & Whitney, K. 1995. Understanding the dynamics of diversity in decision making teams. In R. A. Guzzo & E. Salas (Eds.), *Team effectiveness and decision making in organizations*: 204–261. San Francisco: Jossey-Bass.
- James, L. R., & Williams, L. J. 2000. The cross-level operator in regression, ANCOVA, and contextual analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*: 382–424. San Francisco: Jossey-Bass.
- Joshi, A., Liao, H., & Jackson, S. E. 2006. Cross-level effects of workplace diversity on sales performance and pay. *Academy of Management Journal*, 49: 459–481.
- Katz, D., & Kahn, R. L. 1978. *The social psychology of organizations* (2nd ed.). New York: Wiley.

- King, A. 2007. Cooperation between corporations and environmental groups: A transaction cost perspective. *Academy of Management Review*, 32: 889–900.
- Klein, K. J. 1987. Employee stock ownership and employee attitudes: A test of three models. *Journal of Applied Psychology*, 72: 319–332. San Francisco: Jossey-Bass.
- Kozlowski, S. W. J., & Klein, K. J. 2000. A multi-level approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K. J. Klein, S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*: 3–90. San Francisco: Jossey-Bass.
- Makino, S., Isobe, T., & Chan, C. M. 2004. Does country matter? *Strategic Management Journal*, 25: 1027–1043.
- Marquis, C., Glynn, M. A., & Davis, G. F. 2007. Community isomorphism and corporate social action. *Academy of Management Review*, 32: 925–945.
- Marrone, J. A., Tesluk, P. E., & Carson, J. B. 2007. A multi-level investigation of antecedents and consequences of team member boundary spanning behavior. *Academy of Management Journal*, 50: 1423–1439.
- Martin, K. D., Cullen, J. B., Johnson, J. L., & Parboteeah, K. P. 2007. *Academy of Management Journal*, 50: 1401–1422.
- Mathieu, J. E., & Taylor, S. 2007. A framework for testing meso-mediational relationships in organizational behavior. *Journal of Organizational Behavior*, 28: 141–172.
- Moerbeek, M., van Breukelen, G. J. P., & Berger, M. P. 2000. Design Issues for Experiments in Multilevel Populations. *Journal of Educational and Behavioral Statistics*, 25: 271–284.
- Muthén, L. K., & Muthén, B. O. 2007. *Mplus user's guide* (4th ed.). Los Angeles: Muthén & Muthén.
- Pfeffer, J. 1993. Barriers to the advance of organizational science: Paradigm development as a dependable variable. *Academy of Management Review*, 18: 599–620.
- Porter, L. W. 1996. Forty years of organization studies: Reflections from a micro perspective. *Administrative Science Quarterly*, 41: 262–269.
- Porter, M. E. 1980. *Competitive strategy*. New York: Free Press.
- Raudenbush, S. W. 1997. Statistical analysis and optimal design for cluster randomized trials. *Psychological Bulletin*, 2: 173–185.
- Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., Congdon, R. T., & du Toit, M. 2004. *HLM6: Hierarchical linear and nonlinear modeling*. Lincolnwood, IL: Scientific Software International.
- Roberts, K. H., Hulin, C. L. & Rousseau, D. M. 1978. *Developing an interdisciplinary science of organizations*. San Francisco: Jossey-Bass.
- Rousseau, D. M. 1985. Issues of level in organizational research: Multi-level and cross-level perspectives. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior*, vol. 7: 1–37. Greenwich, CT: JAI Press.
- Rousseau, D. M. 2000. Multilevel competencies and missing linkages. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research and methods in organizations*: 572–582. San Francisco: Jossey-Bass.
- Ruefli, T. W., & Wiggins, R. 2003. Industry, corporate, and segment effects and business performance: A non-parametric approach. *Strategic Management Journal*, 24: 861–879.
- Schneider, B., Hanges, P. J., Smith, D. B., & Salvaggio, A. N. 2003. Which comes first: Employee attitudes or organizational financial and market performance? *Journal of Applied Psychology*, 88: 836–851.
- Scott, W. G. 1974. Organization theory: A reassessment. *Academy of Management Journal*, 17: 242–254.
- Shimizu, K. 2007. Prospect theory, behavioral theory, and threat-rigidity thesis: Combinative effects on organizational decisions to divest formerly acquired units. *Academy of Management Journal*, 50: 1495–1514.
- Simsek, Z., Veiga, J. F., Lubatkin, M. H., & Dino, R. N. 2005. Modeling the multilevel determinants of top management team behavioral integration. *Academy of Management Journal*, 48: 69–84.
- Snijders, T. A. B., & Bosker, R. J. 1993. Standard errors and sample sizes for two-level research. *Journal of Educational Statistics*, 18: 237–259.
- Triandis, H. C. The importance of context in studies of diversity. In S. E. Jackson & M. N. Ruderman (Eds.), *Diversity in work teams*: 225–234. Washington, DC: American Psychological Association.
- Tsui, A., & Gutek, B. 2000. *Demographic differences in organizations*. New York: Lexington Books.
- Yamin, M., & Otto, J. 2004. Patterns of knowledge flows and MNE innovative performance. *Journal of International Management*. 10: 239–258.



Michael A. Hitt (*mhitt@mays.tamu.edu*) is a Distinguished Professor of Management and holds the Joe B. Foster Chair in Business Leadership at Texas A&M University. He received his Ph.D. from the University of Colorado. His research interests focus on managing firm resources for competitive advantage; international strategy, especially the effects of country institutional environments on the strategic behaviors of firms; corporate governance; and strategic entrepreneurship.

Paul W. Beamish (*pbeamish@ivey.uwo.ca*) holds the Canada Research Chair in International Business at the Ivey Business School, University of Western Ontario. He received his Ph.D. from the University of Western Ontario. His international strategy research interests focus on equity joint ventures, Japanese foreign direct investment, internationalization, and emerging markets.

Susan E. Jackson (*sjackson@smlr.rutgers.edu*) is a professor of human resource management in the School of Management and Labor Relations at Rutgers University–New Brunswick and a research fellow at GSBA-Zurich. She received her Ph.D. from the University of California, Berkeley. Her research interests include workforce diversity, knowledge-intensive teamwork, and strategic human resource management.

John E. Mathieu (*john.mathieu@business.uconn.edu*) is a professor and the Cizik Chair of Management at the University of Connecticut. He received a Ph.D. in industrial/organizational psychology from Old Dominion University. He is a fellow in the Society of Industrial and Organizational Psychology and the American Psychological Association. His current research interests include models of team and multiteam processes and cross-level models of organizational behavior.



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