

MULTINATIONAL ORGANIZATION CONTEXT: IMPLICATIONS FOR TEAM LEARNING AND PERFORMANCE

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Integrating and extending literature on international management and team effectiveness, we examined how macro context in multinational organizations (MNCs) influences work team learning and how team learning influences task performance and interpersonal relations. We examined these influences in a multimethod study of 115 teams in 20 subsidiaries of five MNCs. Controlling for micro contextual features, including team type, training, feedback, and autonomy, we found that organizational contexts emphasizing global integration reduced team learning, but those emphasizing responsiveness and knowledge management increased team learning. Team learning in turn positively influenced both task performance and the quality of interpersonal relations.

Research demonstrates that team learning—the collective acquisition, combination, creation, and sharing of knowledge by teams (Argote, 1999)—depends on factors both internal and external to teams. A substantial team learning literature has used various research methods to demonstrate important determinants and consequences of team learning. Particular depth of understanding exists concerning internal team dynamics (e.g., diversity, demographics, processes, and attitudes) that support team learning (see Argote [1999] for a review). Researchers also know that in addition to internal dynamics, contextual variables like leadership, training, feedback, and technology affect team learning because teams are interdependent with and socially embedded in their organizational settings (Gibson & Vermeulen, 2003; Sole & Edmondson, 2002; Zellmer-Bruhn, 2003).

Although team learning research has examined context, it has stayed close to the team boundary, primarily examining factors in a team's local, or micro, context, such as the leadership provided by the manager to whom the team reports. Existing research on team learning has yet to address whether, when micro contextual features are con-

trolled for, aspects of the macro organizational context, such as firm strategy, influence team learning. Further, existing research addresses elements of context that *support* team learning but says less about equally important elements of context that *impede* team learning. As we show below, the micro and macro aspects of context can have multiple and conflicting influences on learning.

In this study we investigate the influence of macro contextual factors in a multinational organization (MNC) setting, controlling for micro contextual factors. Although both micro and macro contexts for team learning exist in multi-unit domestic firms, examining teams in MNCs is particularly important for extending research on organizational context and team learning because the MNC context adds variety and complexity that doesn't surface in domestic firms. MNCs operate in multiple countries, exposing them to cultural, institutional, and economic heterogeneity. To realize competitive advantage from such heterogeneity, MNCs develop structures in which different units operate under a variety of management systems (Roth & Kostova, 2003: 888), producing "inherent contradictions" (Ghoshal, 1987) that may differentially influence team learning.

An MNC's managers must balance differentiation of local subsidiaries to meet unique local demands against integration, control, and coordination of the entire organization. These challenges significantly influence functions, policies, and practices (Schuler, Dowling, & Di Cieri, 1993: 424). For instance, an MNC's subsidiaries may differ in strategic goals and orientations (Birkinshaw & Hood,

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1998, 2000), governance mechanisms (Chang & Taylor, 1999), and management practices and processes (Roth & O'Donnel, 1996). The complexity inherent in MNCs means that different configurations of policy, structure, and support across an organization may simultaneously convey different messages to teams about the value of voluntarily adapting and innovating, and their freedom to adapt and innovate.

We extend theory about team learning and performance by examining the possibility that aspects of MNC macro context may both *support and impede* team learning. We identify additional variables in an existing framework of research on team learning, which in itself may be a theoretical contribution (Whetton, 1989); but more valuably, we show how these additional factors alter understanding of organizational context and team learning.

THEORY AND HYPOTHESES

We focus on one form of team learning: creation of new collective work processes. Work processes involve procedures, or know-how, describing how activities are carried out. Although previous research primarily examines behaviors that enable team learning, we focus on actual learning achieved. That is, rather than examining information exchange and negotiation of meaning (e.g., Gibson & Vermeulen, 2003), or opinion sharing and voice (e.g., Edmondson, 1999) as perceived by team members, we investigate new practices resulting from these behaviors. For example, consider a multifunctional sales and service team that “hands off” a customer from function to function in selling and delivering a product: an account executive makes the sale, an installation specialist installs the equipment, a training executive trains the customer to use the equipment, and finally, a customer service representative maintains the account. In this instance, we consider the creation of new, more efficient ways to complete processes as learning achieved by the team.

We argue that the extent of learning achieved by a team depends on its micro (proximal) context, such as the leadership and technology available to it, as well as on strategic initiatives in the macro organizational context that encourage or constrain the team's efforts to improve its hand-offs. Before developing specific hypotheses about macro context and learning, we first differentiate between the micro and macro contexts of teams and review existing research on each in literature on team learning.

Organizational Context and Team Learning

Organizational context—the set of “overarching structures and systems external to the team that facilitate or inhibit its work” (Denison, Hart, & Kahn, 1996: 1006)—is not monolithic; rather, each context includes qualitatively distinct aspects, and the disparate aspects can have different effects (Edmondson, 2003: 1425). Progressing from near a team boundary to further away both socially and physically, relevant levels of external context include formal work unit (e.g., department), business unit (e.g., subsidiary), and organization (e.g., corporate) (House, Rousseau, & Thomas-Hunt, 1995).

Micro context. Elements of micro context that affect teams include empowerment, encouragement, coaching, managerial support, and feedback availability (Hyatt & Ruddy, 2001; Janz, Colquitt, & Noe, 1997), as well as local resources like training, the availability of technical consultation, and team rewards (Gladstein, 1984). What distinguishes these micro aspects of context from macro aspects (described below) is that micro aspects are often tailored to specific team needs, are likely to vary among teams within a subsidiary or firm, and often change and evolve through team response and input.

Recent studies have demonstrated that micro context influences team learning. Many studies have examined micro context in terms of leader characteristics (e.g., Sarin & McDermott, 2003: 708). For example, Gibson and Vermeulen showed that performance management by an external leader increased the frequency of behaviors associated with team learning, such as information gathering (Gibson & Vermeulen, 2003). Similarly, Edmondson (1999, 2003) found that leader facilitation and coaching influenced team learning behaviors such as gathering information, reflecting on work processes, testing assumptions, and obtaining different opinions. Edmondson (1999) also found that, in addition to leadership, training, information, and assistance supported team learning behaviors. Likewise, teams provided more empowerment and authority over decisions and teams encouraged to use knowledge management systems demonstrated more learning behaviors such as information gathering (Gibson & Vermeulen, 2003). In another vein, Zellmer-Bruhn (2003) found that disruptions in a team's micro context, such as changes in technology, products, or services, prompted active search and team learning through the adoption of new routines.

Macro context. The macro context includes subsidiary and corporation characteristics that vary little among teams and often are not open to alter-

ation based on input from teams. Fewer studies in the teamwork literature concern macro context than micro context. One key reason for this discrepancy may be the difficulty of data collection; most large samples of teams come from either a single division or a single organization—settings offering no variance in macro context (e.g., Gladstein, 1984). However, several scholars have referred to variables in the larger organizational context. For example, although they did not capture macro features of context in their own analysis (focusing instead on team leadership), Sarin and McDermott (2003) suggested that future research should investigate features such as organizational culture and human resource systems. In a rare team learning study that included macro context, Edmondson (2003) examined cardiac surgery teams in hospitals and assessed such macro context variables as structural limitations (e.g., number of operating rooms), senior management support of change initiatives, and organizational innovation history. Unfortunately, she found no empirical support for the importance of these macro context variables in team learning. She speculated that the specifics of the surgery teams (highly self-sufficient units that are quite independent from senior management and macro context) might explain the lack of findings, and did not conclude that macro context does not matter to team learning.

Although existing research on macro context and team learning is sparse, research more broadly concerning contexts for creativity and product innovation supports the value of considering macro organizational context variables in studies of learning (Amabile, Conti, Coon, Lazenby, & Herron, 1996: 1155). For example, macro contextual factors such as culture, resources, strategy, structure, and focus on technology influence creativity (Perry-Smith & Shalley, 2003), as do rewards (Eisenberger & Armeli, 1997), evaluative context (Shalley & Perry-Smith, 2001), and job complexity (Oldham & Cummings, 1996). Likewise, new-product development research has suggested that properties of macro organizational context influence knowledge utilization in innovation (Argote, McEvily, & Regans, 2003). Organizational design and structure affect both the quality and speed of new-product development (Clark, Chew, & Fujimoto, 1987). Different methods of organizational integration affect the time required for coordination and the quality of information flows across functional specialties in new-product development projects (Clark et al., 1987). Yet this research has not examined teams as the focal unit of analysis, nor

has it examined team learning as a dependent variable.¹

Drawing conclusions from existing research on context and team learning, one finds strong relations in a variety of field settings and team types demonstrating that context matters. The majority of these studies, however, have examined only the features of context we label as micro and features largely thought of as “supportive.” Little attention has been paid to macro contextual variables or to those that may impede team learning. Further, previous research has emphasized learning *processes* as the key dependent variable, leaving open questions about macro context and the *actual learning achieved*. In the next sections, we describe specific elements of the MNC macro context we expect to influence team learning.

MNC Macro Team Context

Strategy strongly affects team context, given that corporate strategy is tightly intertwined with structure and management (Andrews, 1971). MNC strategy involves managing interactions among component parts of an organization to increase efficiency and scale, exploit risks and differences across subsidiaries, and learn from worldwide experiences (Bartlett & Ghoshal, 1988; Ghoshal, 1987). To meet these demands, MNCs adjust where activities are performed (centrally at corporate headquarters or dispersed across subsidiaries), the coordination of activities among country subsidiaries, and the linkage of functional activities such as R&D, marketing, and manufacturing (Takeuchi & Porter, 1986). These adjustments result in organizational configurations and policies developed to enforce and reinforce the strategy (Murtha, Lenway, & Bagozzi, 1998).

In identifying specific MNC macro context characteristics important to team learning, we drew on Bartlett and Ghoshal's (1989) highly influential model of MNC strategy, in which those authors asserted that MNCs must seek *global integration* for efficiency, *local responsiveness* for adaptability to diverse locations, and *worldwide learning* to exploit innovations developed around the globe. Global integration creates economies of scale and leverage. Local responsiveness to regional conditions allows distinctiveness of tasks, preferences, marketing and distribution systems, and state influence in multiple country locations (Devinney, Midgley, & Venaik, 2000). Worldwide learning cre-

¹ Most studies examined lead times and total engineering hours applied to a project.

ates systems and mechanisms to diffuse learning and innovation.

Originating from the differentiation and integration dimensions developed by Lawrence and Lorsch (1967), the integration-responsiveness (IR) framework has been refined and applied by many international management strategy researchers (e.g., Bartlett & Ghoshal, 1989; Doz, Bartlett, & Prahalad, 1981). Integration and responsiveness are separate, correlated dimensions (Murtha et al., 1998); even global firms often need locally adaptive responses. Thus, MNCs need different local strategies across subsidiaries to fulfill needs for integration and responsiveness. In many industries, successful MNCs are *both* integrated and responsive (Bartlett & Ghoshal, 1989). The simultaneous attention to integration and responsiveness creates conflicting interests between an MNC's corporate center and its subsidiaries (Kim & Mauborgne, 1993). Simply put, global priorities result in corporate decisions made by the MNC that may not coincide with subsidiaries' local interests (Kim & Mauborgne, 1993). In other words, what increases corporate performance may harm a given subsidiary's performance. Teams embedded in MNCs may receive a variety of influences related to integration and responsiveness and experience different conditions relevant to diffusion of innovative ideas. As we argue in the next sections, these influences likely shape the teams' voluntary learning.

Before turning to our hypotheses, note that this paper focuses on intact, colocated work teams in MNC subsidiaries. Such teams are not "global" and do not have members representing multiple subsidiaries, nor do they have members who cross headquarters and subsidiaries. This is an important boundary condition, because the macro context variables considered in our study may have different effects for local teams than they might for global teams that explicitly try to integrate over dispersed subsidiary locations. For example, global teams working to coordinate activities around the world may innovate new processes under high global integration pressure from their MNC because doing so is explicitly rewarded. In contrast, the colocated teams in our study primarily faced "task deliverables" in their local subsidiary context that could be quite contrary to integration, as well as pressures from the overarching multinational corporate context. Below, we detail our specific expectations for the influences of integration, responsiveness, and knowledge management procedures on the learning achieved by teams.

Global Integration and Team Learning

MNCs emphasizing global integration promote a holistic view of global operations and explicitly coordinate interdependent processes and products across subsidiaries. The international management literature suggests many ways in which MNCs accomplish global integration. For instance, to maintain cost efficiencies, MNCs increase control through centralization of decision making. MNCs often rationalize production by standardizing products or processes across markets to build efficient operations networks (Johnson, 1995).

However, global integration is not just standardization or sameness. Practices need not be *identical* worldwide, but high global integration creates parameters within which teams can act, thus constraining adaptation. To illustrate this point, consider a global staffing initiative in the Mobility Division at SMART,² a globally integrated microprocessor firm. A Mobility Division human resources vice president at headquarters determines the worldwide staffing needed to meet global strategy for the division. The HR vice president then pushes each of the firm's subsidiaries for action *consistent with* and supportive of the centrally determined Mobility Division strategy. To accomplish this, the vice president contacts HR team leaders in each world region and communicates the basic framework and corporate goals for the strategic initiative. The local HR team members then implement the initiative in their respective countries. The local HR team leaders report directly to their country managers rather than to the headquarters HR vice president, yet the latter monitors the outcomes of the staffing strategy and may directly intervene at the local level if need be. For example, the vice president may centrally impose methods of recruitment and selection around the globe. In this example, the staffing initiative is globally integrated because each country location of the Mobility Division is interdependent with other world locations, and worldwide staffing needs must be coordinated to manage these interdependencies. This intentional interdependence and coordination is the result of a globally integrated approach to the division. Importantly, the central monitoring and management of division staffing limit the actions of the subsidiary HR team by causing rejection of processes that do not produce outcomes that fit into the corporate integrated strategic plan for the Mobility Division. Therefore, corporate strategy constrains subsidiary processes.

² These names are pseudonyms.

The previous example suggests that the same features enabling tight coordination and interdependence may also constrain adaptation (Ghoshal & Nohria, 1993). Given a corporate emphasis on a globally integrated initiative, corporate executives may develop a template for procedures and instruct subsidiary teams on how to implement the initiative. This direction inhibits team learning because in its effort to integrate, corporate restricts the potential changes teams can consider and reduces their motivation or opportunity to look for improvements (“We don’t search because HQ tells us the procedure”). For example, the global staffing initiative at the globally integrated high-tech firm would discourage each country subsidiary from developing its own unique staffing practices. Furthermore, integration creates tighter coupling (Weick, 1976) between levels in an MNC, which constrains discretion. The coupling of lower-level units such as teams with subsidiary and corporate levels is highest when concerted efforts to develop and maintain interunit integration exist. Considering the implications of tight coupling and centralization from integration, and given the general finding that centralization reduces innovation (Ghoshal & Bartlett, 1988: 371), we submit that integration likely reduces local team learning. Thus, for collocated work teams in MNCs, we propose:

Hypothesis 1. Emphasis on global integration decreases team learning.

Responsiveness and Team Learning

Even in global industries, MNCs need some local responsiveness, so the role, structure, and tasks of subsidiaries in a given MNC will likely vary around the globe (Frost, Birkinshaw, & Ensign, 2002; Gupta & Govindarajan, 2000). Local tastes, marketing, or other local circumstances may force subsidiaries to modify processes and products, deviating from headquarters standards. MNCs that emphasize responsiveness create subsidiaries with key organizational assets and resources such as R&D, marketing, and production. In these firms, subsidiaries are more independent and have less corporate socialization than do subsidiaries in firms that do not emphasize local responsiveness (Ghoshal & Bartlett, 1988). Independence means subsidiaries can legitimately initiate programs and develop products or processes. Subsidiaries in which an MNC emphasizes responsiveness can make many decisions about resource commitments (Prahalad & Doz, 1987). Alternatively, low local responsiveness coincides with systematic, worldwide programs to socialize subsidiaries, generating normative inte-

gration with headquarters. Bartlett and Ghoshal (1989) provided the example of Unilever and its “-ization” program, in which the organization systematically attempted to “unileverize” the company’s operations in different countries.

Ghoshal and Bartlett (1988) empirically linked local responsiveness to subsidiary innovation, finding that the local responsiveness elements of key resources, independence, and low corporate socialization positively influenced subsidiary innovation because they promoted both the necessity and feasibility of learning. For similar reasons, we expect that local responsiveness increases team learning. Local responsiveness through the presence of key assets in multiple functions (e.g., R&D, manufacturing, and marketing) exposes teams to a great variety of approaches, resulting in strong heterogeneity of perspectives, skills, and norms. This multiplicity increases the feasibility of team learning. Teams in subsidiaries containing more of the “value chain” have boundaries that touch several other stages of development and production, must obtain resources from other areas, and often create products or services used by other areas (Carlile, 2002). This interdependence compels high levels of intrasubsidiary communication (Ghoshal & Bartlett, 1988: 373), and emphasizes the need for team learning.

Consider two different subsidiaries in a multinational pharmaceutical firm. One subsidiary is primarily engaged in production. The teams in this subsidiary come almost exclusively from production and have little exposure to other key organizational areas, particularly those stages far removed from production (e.g., marketing and sales). This distance reduces the opportunity and need for sharing perspectives that might increase the teams’ learning. Another subsidiary of the multinational pharmaceutical firm handles R&D, production, marketing, sales, and regional distribution. In this production-focused subsidiary, whether teams represent a single function or multiple functions, each team is exposed to other teams that have varying priorities and processes. Essentially, the variety of interfaces present in subsidiaries with key resources provides exposure to multiple diverse viewpoints, increasing opportunities for, and the desirability of, learning (Edmondson, 2002).

Indeed, organizational learning models suggest exposure to diversity stimulates problem solving through interaction with people immersed in local practices and perspectives, as well as through exposure to physical aspects of a local setting, and a greater need to adapt to address local boundary-spanning nuances (Sole & Edmondson, 2002). At the extreme, teams may be entirely responsible for

developing their own processes to meet local demands. Under local responsiveness, teams may modify processes needed to match the social interaction demands and diverse customer needs (internal or external) of their location. For example, cultural differences may render some processes ineffective, requiring a modification to accommodate a team's social setting.

In addition to increasing the desirability of learning, local responsiveness also influences team learning through increased independence and lower corporate socialization. Thus, for colocated work teams in subsidiaries with high local responsiveness, we expect teams to engage in more learning, changing their processes to fit local customer demands and to suit the different work values and styles of team members.

Hypothesis 2. Emphasis on local responsiveness increases team learning.

Knowledge Management and Team Learning

In addition to global integration and local responsiveness, knowledge management and worldwide learning are key to MNC success (Bartlett & Ghoshal, 1989; Kogut & Zander, 1993). Competitive advantage for an MNC comes through the recognition that innovations may arise in many different parts of the organization, not just headquarters, and through effectively capturing and transferring such dispersed knowledge. Some MNCs attempt to strategically manage knowledge through infrastructure, norms, and procedures that codify, store, and disseminate knowledge. For example, central databases may catalog new products or services, work methods, and marketing knowledge, to facilitate transfer of such knowledge and aid in its use for adaptive responses to local conditions (Moore & Birkinshaw, 1998). These methods result in a variety of knowledge management norms and procedures across MNCs.

The international management literature frames knowledge management as a means for learning (Bartlett & Ghoshal, 1989). One means by which knowledge management facilitates learning is through the transfer of knowledge developed in one part of an organization to another—for instance, from headquarters to subsidiaries, across subsidiaries, and from subsidiaries back to headquarters. Here, we investigate another role of knowledge management for colocated team learning: disseminating knowledge to create *new* practices. Knowledge management procedures influence the creation of new practices because they facilitate the identification of knowledge, an input to learning,

by providing a common repository and reducing search costs (Gibson & Vermeulen, 2003). The degree to which an organization facilitates codification, management, and tracking of knowledge influences the availability of ideas in the organization for teams to acquire and recombine into new knowledge. Learning occurs when teams acquire know-how and subsequently combine and shape it to meet their needs (Anand, Clark, & Zellmer-Bruhn, 2003); it is facilitated by translation and recontextualization (Brannen, 2004); and it rarely occurs without a transformation in the acquired knowledge. Knowledge management provides teams access to knowledge in other (perhaps comparable) parts of an organization. Thus, knowledge management procedures facilitate team learning by providing a readily available source of information that can stimulate the creation of team processes.

Knowledge management norms also signal to teams the desirability of developing better practices (Hedberg, 1981). As such, knowledge management stimulates teams to reconsider existing practices and search for ways to improve their work and implement novel solutions; thus, knowledge management increases teams' attention to learning activities, stimulates their inquiry about alternative practices, and helps the teams adapt new practices or combine them with their existing repertoires (Kogut & Zander, 1993). Previous research offers some support for this role of knowledge management. Gibson and Vermeulen (2003) found that the availability of a knowledge management system interacted with the presence of demographic subgroups in teams to influence reflective communication and team codification of knowledge stores. Thus, we propose:

Hypothesis 3. Knowledge management norms and procedures increase team learning.

Learning and Team Performance

Team learning regarding work processes directly influences coordination of activities and subsequently influences team performance (Argote, 1999). Thus, understanding the influence of macro context not only helps one to identify the operational implications of various strategic choices in MNCs, but also offers insight into the relation between team learning and team performance (Edmondson, 1999). Team performance includes both task performance and quality of interpersonal relations. Task performance concerns the degree to which a team meets its goals and how well its output fulfills the team's mission (Hackman, 1987). Quality of interpersonal relations includes the de-

gree to which members feel that their capacity to work together is enhanced or maintained, and the degree to which members are attracted to, supportive of, and continue to stay in, a team (Edmondson, 1999).

Numerous studies in a variety of contexts have demonstrated empirical support for a link between learning-related behaviors and task performance. Examining 95 new-product teams, Lynn, Skov, and Able (1999) found that internal new-product development processes helped teams meet customer needs. Similarly, project team innovation processes improved performance in research and development teams (Bain, Mann, & Pirola-Merlo, 2001). Brainstorming groups that improved the process by which ideas were exchanged had higher-quality creative and performance outcomes (Paulus & Yang, 2000). Edmondson's intensive case studies indicated that teams that reflect on processes were more effective (Edmondson, 2002; Edmondson, Bohmer, & Pisano, 2001). Although these studies show a link between learning processes (such as reflection) and task performance, they don't clearly demonstrate that the actual learning achieved (i.e., the extent of new practices developed) relates to task performance. Existing practices may need to be adapted to a constantly evolving and changing team environment. When teams adapt, they are more likely to arrive at effective performance strategies. Although this will not always be the case, the balance of learning is likely to increase overall effectiveness. On the basis of this evidence and these arguments, we expect:

Hypothesis 4. Team learning increases team task performance.

Beyond task performance, interpersonal relations is another essential form of performance influenced by team learning. Team learning helps ensure effective internal team functioning, thus enhancing team members' satisfaction and their ability to work together in the future (Earley & Gibson, 2002). Teams that do not learn are likely to experience process losses, frustration, conflict, and distrust when work is not smoothly accomplished (Bain et al., 2001; Kirkman & Rosen, 1999). In contrast, members of teams that create new approaches to their work are likely to be satisfied with working in the team and committed to it because of improved coordination and other organizational benefits resulting from the learning.

Further, learning new approaches to work influences the degree of attention and effort members give to a particular team, or their "mind share" in the team (Klein & Kleinhanns, 2003). Maximizing the mind share that members contribute creates

advantages for teams, but with members' multiple priorities and possibly conflicting demands, this is easier said than done. Teams often compete for the time, effort, knowledge, and energy of high-performing team members who are in demand throughout their firm. A high level of learning results in members feeling engaged in a team and feeling that the team is effective and, as a result, high learning reduces voluntary exits from the team (see Earley and Gibson [2002] for a review), making the team a more attractive focus of effort. Together, high mind share, consistency of participation, and longevity in membership promote tacit coordination (Moreland, Argote, & Krishnan, 1998), which increases members feeling of belonging, cohesion, and satisfaction. On the basis of these arguments, we propose the following:

Hypothesis 5. Team learning increases the quality of interpersonal relations.

METHODS

We used multiple methods and several distinct sources of data to test our hypotheses. Specifically, to examine the macro context of the teams in our sample, we used annual reports and industry directories, qualitative coding of interviews, content analysis of interviews, and observations at site visits. We asked *team members* to report about quality of interpersonal relations since they knew their own engagement and attitudes about their team best. We asked *external team leaders* (the people to whom teams reported) to rate team learning and task performance, because these managers typically had a broad view of multiple teams and could therefore base ratings of any given team on comparisons with other teams. Using these multiple sources of data is an important strength of this study.

Sample and Procedures

Drawing on the *Corporate Families and International Affiliates Directory*, we identified five multinational pharmaceutical and medical products companies as research sites for this study, using three selection guidelines: (1) they were all in the same industry (a control for industry-related effects), (2) they had facilities in multiple countries, and (3) they used teams extensively worldwide. We chose the pharmaceutical industry because it has been identified as a "global industry" (Kobrin, 1994), facing "simultaneously strong demands for both global integration and local responsiveness" (Ghoshal & Nohria, 1993: 26). Thus, strategies un-

dertaken by firms in the pharmaceutical industry likely emphasize both global integration and local responsiveness (Ghoshal & Nohria, 1993: 27).

Although all five firms competed in the same industry and faced similar global competitive pressures, each had a different approach to strategy implementation. The firms varied in both integration and responsiveness. Each organization used teams for a wide variety of functions, including human resources, sales, marketing, manufacturing, and research, and each had facilities in at least four geographic areas (the United States, Latin America, Southeast Asia, and Western Europe). We contacted human resource professionals in each organization and asked them to select colocated work teams for interviews and surveys.

To develop the surveys used for this study and to understand the contexts of the firms, we first interviewed a sample of 107 individuals on 52 teams at 20 sites (one from each of the five firms and four geographic regions). We interviewed each individual on-site using an in-depth personal interview format in his or her native language, with the assistance of bilingual translators. We asked questions about team effectiveness, learning processes, and knowledge management. We used interview results and preexisting scales to develop the measures for this study. We report detailed steps of measurement development elsewhere (Gibson, Zellmer-Bruhn, & Schwab, 2003). A team of 15 translators engaged in an extensive translation-back translation procedure that was designed to ensure cultural equivalence of the items in English, Spanish, and French and resulted in a number of items in the survey being altered. Next we performed a bilingual pilot study in 11 teams to further examine the validity of the items across the different translated versions; bilingual respondents completed the survey in two different languages. This process also resulted in a small number of alterations. Finally, we conducted a multiple constituency test to examine the team-level reliability of the scales. As a result, we dropped some items and subjected others to another round of the translation-back translation procedure.

We administered the final survey on-site in each location to a second sample of teams identified by human resource professionals. A variety of team task types were included, encompassing both management and operational activities: sales/service, marketing, management/human resources, and production/operations. Teams were colocated in subsidiaries and consisted of local members who primarily shared the same regional culture. The sample included both single-function teams (26%) and teams that had some cross-functional represen-

tation (76%), but none were cross-subsidiary or global. For example, one of the teams consisted of five members who operated an assembly line that produced and packaged tablet medications. Another team was charged with developing a new marketing campaign and consisted primarily of marketing staff, but it included representatives from sales and production. No respondent participated on more than one team in the sample. In the cover letter and on the survey, we clearly indicated the name of the team about which the team members and leaders should respond. Because some of our measures (team learning and team task performance) were exclusively rated by team leaders, to be included in the final data a team had to have both a leader from whom we had received a survey and team members who had responded. The final sample for hypothesis tests consisted of 115 teams (50 percent of those surveyed), represented by a total of 673 individuals.

Measures

Dependent and independent variables. *Task performance* was measured with a five-item scale capturing goal achievement and effectiveness. Team leaders completed this scale (1 = "very inaccurate," and 7 = "very accurate"). Items were: "This team achieves its goals," "This team accomplishes its objectives," "This team meets the requirements set for it," "This team fulfills its mission," and "This team serves the purpose it is intended to serve." Reliability (coefficient alpha) was .95, and principal component analysis indicated that all items loaded on a single factor, with an eigenvalue of 4.23, accounting for 84 percent of the variance and factor loadings ranging from .88 to .94.

Quality of interpersonal relations was measured with a seven-item scale assessing the satisfaction team members had with their team, their commitment to their team, and the level of supportiveness present in the team. Team members reported the extent to which statements about interpersonal relations were accurate (1 = "very inaccurate," 7 = "very accurate"). Sample items include: "Team members show a high level of support for teamwork," "Team members share a common commitment to the team," and "Members of this team encourage one another."³ Coefficient alpha for this scale was .95. Principal component analysis revealed that all items loaded on a single factor with

³ The complete list of items is available from the authors.

an eigenvalue of 5.09 accounting for 72 percent of the variance; loadings ranged from .82 to .89.

Learning concerned the extent to which a team created new processes and practices. Team leaders rated three items: "If a new way of doing work is introduced, it often comes from within this team," "This team comes up with many new ideas about how work should be done," and "This team is often the source of ideas copied by other teams." Items were measured on the same scale described above; coefficient alpha was .84, and principal component analysis revealed a single factor, with an eigenvalue of 2.11, accounting for 70 percent of the variance and factor loadings ranging from .78 to .87.

We measured *global integration* using content analysis of annual report data. Content analysis of annual reports has been used as a valid measure of strategy and corporate governance (Schnatterly, 2003), and organizational culture (Gibson & Zellmer-Bruhn, 2001). Following procedures used in these previous studies, we obtained electronic copies of the annual reports for each organization in our sample from Lexis/Nexis Academic Universe for the three years preceding the year we conducted our survey, removing all purely financial sections of the reports.

We consulted definitions of global integration (Bartlett & Ghoshal, 1989; Prahalad & Doz, 1987) to create a set of search terms that represented a focus on global integration in the manner recommended by others who have used this technique (e.g., Jehn & Doucet, 1991). Examples of the terms include "integration," "universal," "cost reduction," "efficiency," "standard," and "scale." We used content analysis software (QSR*NUDIST) to search for the terms in each organization's annual report database.

Next, we conducted "in-context verification" to ensure that the terms were used in the way suggested by the international management literature and definitions. This process involved generating a database of excerpts containing several lines of text occurring before, during, and after a search term. Next we read every excerpt and removed excerpts that were inconsistent with our definition of global integration (and thus failed to demonstrate evidence of the construct). For example, one annual report search returned the following segment for "integrate": "[Research facility] houses scientists from different disciplines in [physical] surroundings that maximize interaction and integration." This segment discussed the development of specific physical buildings to generate cross-functional integration among scientists. Because this use of "integrate" did not represent an emphasis on global integration, we removed this segment from

that organization's database. Alternatively, an example from our text search for "integrate" that does reflect an emphasis on global integration was this: "[We] are focused on product learning and ensuring commonality in processes and procedures to further integrate our worldwide assets."

After removing excerpts that failed to demonstrate evidence of global integration, we counted the number of occurrences in each organization. To control for differences in the number of text units in each organization's annual reports (greater report length increased the likelihood that a given term would appear), we divided the frequency of occurrence of global integration search terms by the total number of text segments in each firm's database, as suggested in recent research (Gibson & Zellmer-Bruhn, 2001).

Archival data such as annual reports are readily available for examining global integration, but it is much more difficult to find consistent archival data on subsidiaries. Therefore, to develop our measure for *local responsiveness*, we used observations gathered over three to four weeks on-site at each location. Each site visit included tours of local facilities and meetings with senior managers and/or country managers. An additional source of information was the *Corporate Families and International Affiliates Directory*, which lists SIC codes for each subsidiary facility, with more SIC codes indicating greater breadth of production. As noted in Hypothesis 2, the presence in a subsidiary of a relatively high level of organizational assets in the form of key functions, high independence, and low corporate socialization indicates responsiveness (Ghoshal & Bartlett, 1988). Our observations at each site allowed us to assess these features of responsiveness. For example, one subsidiary based in the Philippines had its own brand management, marketing, production, and R&D facilities. In addition, we observed displays of unique products produced and sold locally to meet the particular retailing needs of the region. We also observed variation in socialization. For example, in another subsidiary for a different MNC, we observed signs, handbooks, meeting procedures, awards, and language all reinforcing the "Pharmco-Way."⁴ Analysis of our interviews revealed that nearly all interviewees in this subsidiary described this initiative, illustrating a strong corporate socialization effort at that subsidiary. Given that any one of these sources in isolation provided an incomplete picture of local respon-

⁴ The name is a pseudonym.

siveness, we each reviewed the SIC code information, our observational notes, and our interviews and independently rated each subsidiary location as low (1), moderate (2), or high (3) on local responsiveness. The two ratings for each facility were compared, and the interrater agreement (coefficient alpha) for this measure was .94. On the basis of this strong consistency among raters, we created a composite score for each facility by averaging the two ratings.

Knowledge management was measured with a four-item scale completed by team members (1 = "very inaccurate," 7 = "very accurate"). We created four items for this scale based on the interviews and pilot testing: "This organization has a formal system to capture good ideas made by teams," "This organization attempts to centrally collect best practices," "The organization has a formal system to share good ideas with other teams," and "This organization emphasizes that teams should record know-how." Reliability was .90, and principal component analysis revealed a single factor, with an eigenvalue of 2.86, accounting for 71 percent of the variance and having factor loadings ranging from .83 to .87.

Control variables. We included a number of controls in the models because, as noted earlier, team variables and micro contextual variables influence team learning, and our objective was to isolate the influence of macro contextual features. Three dummy variables captured different tasks and demands of *team types* (sales and service, marketing, management and human resources, production/operations). *Team size* was controlled because larger teams may have greater knowledge resources available than smaller teams, but also may face additional process challenges. *Team age* was included as older teams may be more locked into their routines, and thus less likely to change or, alternatively, may have honed their processes over time and become more effective as a result. *Team training* was controlled with a four-item scale adapted from Mohrman, Cohen, and Mohrman (1995) and completed by team members, because trained teams may be better at diagnosing their processes and generating new alternatives to adapt to changing demands. Similarly, teams that receive *team feedback* about their performance may be more likely to act on that feedback and adapt their processes. The feedback control was measured with a four-item scale adapted from Mohrman et al. (1995) and completed by team members. Finally, teams vary in the degree to which they

have team autonomy,⁵ or decision-making authority for their actions, which may facilitate or constrain team learning. We measured *team autonomy* with an eight-item scale completed by members. The control variables measured using scales all exhibited excellent reliability and discriminant validity.⁶ Finally, we controlled for *firm performance*, measured as return on assets (ROA), given that financially successful firms may have greater resources.

Aggregation. We created several variables using data from individuals to assess characteristics presumably shared within a team and differentiable across teams (Klein & Koslowski, 2000). We conducted several analyses to statistically demonstrate within-team agreement and between-team differences for the variables aggregated to the team level (quality of interpersonal relations, knowledge management, team feedback, team training, and team autonomy). First, for each variable we calculated an interrater agreement score (r_{wg}), a statistic that can range from 0 (no agreement) to 1 (complete agreement) (James, Demaree, & Wolf, 1993). Median (average) interrater agreement was .95 (.91) for quality of interpersonal relations, .86 (.80) for knowledge management, .86 (.79) for team feedback, .85 (.87) for team training, and .88 (.86) for team autonomy. Next, we generated intraclass correlation coefficients using one-way analysis of variance (ANOVA) on the individual-level data, with team as the independent variable and the scale scores as the dependent variables. An indication of convergence within units is an ICC(1) value greater than zero and a corresponding ANOVA *F*-statistic that is statistically significant (Kenny & LaVoie, 1985). In all cases, the ICC(1) was greater than zero with a significant *F*, indicating that the means for the ratings for each variable accurately represented team scores.

Discriminant validity. Finally, the discriminant validity of all variables measured with multi-item scales—team task performance, quality of interpersonal relations, learning, and knowledge manage-

⁵ Note that team autonomy is distinct from global integration, in that global integration measures an organization-level emphasis on coordination of activities, but team autonomy captures the extent to which a team's members feel their local manager gives them the opportunity make decisions. Global integration and team autonomy were not significantly correlated ($r = -.05$) in our sample, and ANOVA results confirmed there was no systematic variance in team autonomy between organizations ($F = 0.84$, n.s.).

⁶ Details on the psychometrics for the control variables may be requested from the authors.

ment—was established through exploratory and confirmatory factor analyses in which we included all items from all of the scales to verify the distinctiveness of the constructs (Venkatraman & Grant, 1986). Exploratory factor analysis replicated the four-factor model and did not reveal any evidence of a single underlying construct that would suggest common method variance. Next, we compared the proposed four-factor model with a three-factor model including performance (combining team task performance and quality of interpersonal relations), learning, and knowledge management, and with a two-factor model that included only performance and learning (which combines learning and knowledge management). Absolute fit indexes for the proposed four-factor model ranged from adequate to excellent ($\chi^2 = 1,064.56$, $df = 119$, $p < .001$, GFI = .90, CFI = .90, IFI = .90, AGFI = .85), and these fit indexes were superior to those for both the three-factor and two-factor models.⁷ In addition Akaike's information criterion (AIC; Boomsa, 2000) was better (that is, smaller) for our four-factor model than for the three-factor or two-factor models ($AIC_{4\text{-factor}} = 1,160.56$; $AIC_{3\text{-factor}} = 3,256.01$; $AIC_{2\text{-factor}} = 3,528.46$). All of these results indicated that our four-factor model provided a better fit to the data than did its plausible rival specifications, that the four scales represented theoretically and empirically distinguishable concepts, and that common method variance did not characterize the scales.

ANALYSES AND RESULTS

Of the teams in our sample, 57 percent were sales/service teams, 13 percent were marketing teams, 7 percent were management and HR teams, and 23 percent were production and logistics teams. Average team size was 11 (s.d. = 5.36), and average team age was 5.24 years (s.d. = 5.11). Correlation results indicated knowledge management was associated with greater learning ($r = .33$, $p < .001$) and that greater learning was associated with higher-quality interpersonal relations ($r = .33$, $p < .001$) and higher task performance ($r = .48$, $p < .001$). Table 1 presents these results.

We tested our hypotheses using general linear model analysis (GLM), the more general model that gives rise to both regression analysis and ANOVA.

Ordinary least squares (OLS) regression using team as the unit of analysis was an inadequate test of our model because several teams came from each firm. Thus, teams within the same firm were not independent, violating the OLS assumption of independence of observations. GLM, with teams nested in firms, could account for this nonindependence. Thus, the model we applied accounted for both the variance associated with the macro context variables and the variance associated with the team variables at the appropriate level of analysis.

We regressed team learning on the controls, global integration, local responsiveness, and knowledge management. Hypothesis 1 states that emphasis on global integration decreases team learning. The coefficient for global integration was negative and statistically significant ($b = -0.53$, $p < .001$).⁸ Thus, team learning is lower in MNCs emphasizing global integration, supporting Hypothesis 1. Hypothesis 2 states that local responsiveness increases team learning. The coefficient for local responsiveness was positive and statistically significant ($b = 0.20$, $p < .001$). Thus, team learning is higher in MNC subsidiaries with high local responsiveness, supporting Hypothesis 2. Finally, Hypothesis 3 states that knowledge management norms and procedures increase team learning. The coefficient for knowledge management was positive and statistically significant ($b = 0.33$, $p < .10$), supporting Hypothesis 3.

Among the control variables included in our model for team learning, one of the micro context controls, autonomy, was positively related to team learning ($b = 0.52$, $p < .01$). Further, firm performance, a macro context control, was also positively related to team learning ($b = 4.30$, $p < .001$).

Hypotheses 4 and 5 address the performance implications of team learning. Including team learning as an independent variable in these models, however, might have created an endogeneity problem. If unmeasured factors associated with higher (or lower) team learning also affected performance, then team learning might correlate with the error term, which would violate the assumption that the explanatory variables are uncorrelated with the error term and would result in biased and inconsistent estimates of the coefficients. Thus, we used the fitted values for team learning, produced from our model predicting team learning, as an instrumental variable in our GLM regression analysis to test Hypotheses 4 and 5. This predicted learning variable should not correlate with the error term. Further

⁷ As is typical in confirmatory factor analysis (Kelloway, 1998), the chi-square associated with our four-factor model was significant. For a discussion of reasons for significant chi-squares apart from real specification errors, see Boomsa (2000).

⁸ Significance tests for hypothesized relationships were one-tailed, and all others were two-tailed.

TABLE 1
Descriptive Statistics and Correlations^a

Variables	Mini- mum	Maxi- mum	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1. Sales and service teams ^b	0.00	1.00	0.57	0.50															
2. Marketing teams ^b	0.00	1.00	0.13	0.34	-.23*														
3. Management teams ^b	0.00	1.00	0.06	0.24	-.29**	-.10													
4. Team size	3.00	40.00	11.06	5.36	-.14	-.11	-.14												
5. Team age	0.22	32.00	5.24	5.11	-.05	-.13	.20*	.03											
6. Training	2.67	6.75	4.75	0.85	.02	.16	-.00	-.04	.05										
7. Feedback	2.75	6.50	5.04	0.77	-.40**	.16	.19*	.05	-.05	.53***									
8. Autonomy	2.73	6.12	4.73	0.72	.03	.11	-.13	-.16*	.08	.39***	.19 [†]								
9. Firm performance	0.03	0.21	0.08	0.07	-.71***	.29**	-.01	.25**	-.13	.01	.35***	.06							
10. Global integration	0.88	2.80	1.97	0.80	.55***	-.23*	-.29**	.15	-.11	-.23*	-.39***	-.05	-.27**						
11. Local responsiveness	1.00	3.00	2.43	0.77	.18 [†]	-.25*	-.21*	.36***	-.15	-.26**	-.12	-.16 [†]	.04	.65***					
12. Knowledge management	2.00	6.29	4.58	0.81	-.23**	.12	-.15	.02	.06	.49***	.48***	.35***	.30**	-.13	-.07				
13. Learning ^c	2.00	7.00	4.61	1.08	-.08	.00	-.16 [†]	.04	-.08	.06	.09	.30**	.23*	-.13	.01	.33***			
14. Interpersonal relations	3.44	6.71	5.48	0.60	.19 [†]	.00	-.12	-.06	.14	.34***	.10	.34***	-.15	-.04	.04	.28**	.33***		
15. Task performance ^c	2.60	7.00	5.60	0.84	-.02	-.20*	.00	.09	.20*	.05	.13	.22*	.04	-.08	.08	.29**	.48***	.49***	

^a $n = 115$.

^b Production and logistics is the omitted team category.

^c Rated by team leader.

+ $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$

Two-tailed tests

TABLE 2
Results of GLM Regression Analysis for
Hypotheses 1–3

Variable	Learning	
	<i>b</i>	s.e.
Sales and service teams	0.57**	0.21
Marketing teams	-0.38***	0.11
Management teams	-0.21	0.29
Team size	0.01	0.02
Team age	-0.02**	0.01
Training	-0.23	0.17
Feedback	-0.13	0.11
Autonomy	0.52**	0.16
Firm performance (ROA)	4.30***	0.96
Global integration	-0.53***	0.11
Local responsiveness	0.20***	0.04
Knowledge management	0.33 ⁺	0.25
Log-likelihood	-138.03	
<i>n</i>	104	

⁺ $p < .10$

** $p < .01$

*** $p < .001$

information about the instrumental variable technique and its properties can be found in many econometrics textbooks (e.g., Greene, 2000). As with our tests of Hypotheses 1 through 3, we specified in the GLM analyses that teams were nested within firms.

Hypothesis 4 states that team learning increases team task performance. As presented in Table 3, regressing team task performance on learning and the control variables yields a positive and significant coefficient for learning ($b = 0.62$, $p < .05$). Thus, teams with higher learning had higher task performance as rated by their leaders, supporting Hypothesis 4. Hypothesis 5 states that team learning increases quality of interpersonal relations. Regressing quality of interpersonal relations on learning and the control variables also yielded a positive and statistically significant coefficient for learning ($b = 0.38$, $p < .05$). Thus, teams with higher learning had higher performance as measured by quality of interpersonal relations, supporting Hypothesis 5.

Of the control variables, team age was significant, with older teams reporting higher-quality interpersonal relations ($b = 0.02$, $p < .001$) and higher leader-rated task performance ($b = 0.05$, $p < .05$). Furthermore, team training positively influenced the quality of interpersonal relations ($b = 0.21$, $p < .10$), and feedback increased leader-rated task performance ($b = 0.20$, $p < .10$).

TABLE 3
Results of GLM Regression Analysis for
Hypotheses 4 and 5

Variable	Leader-Rated Task Performance		Team-Rated Interpersonal Relations	
	<i>b</i>	s.e.	<i>b</i>	s.e.
Sales and service teams	0.19 ⁺	0.13	0.26	0.20
Marketing teams	-0.41*	0.18	0.10	0.12
Management teams	0.15	0.25	0.07	0.19
Team size	0.00	0.01	-0.01	0.01
Team age	0.05*	0.02	0.02***	0.01
Training	-0.05	0.10	0.21 ⁺	0.12
Feedback	0.20 ⁺	0.11	-0.03	0.11
Learning squared	0.62*	0.32	0.38*	0.17
Log-likelihood	-114.01		-74.24	
<i>n</i>	102		107	

⁺ $p < .10$

* $p < .05$

*** $p < .001$

DISCUSSION

We began our research suspecting that the macro organizational context flowing from MNC strategy influences team learning. Addressing this question required a particularly challenging research design, including data collection from teams in multiple locations of a sample of multinational organizations. Meeting this challenge, we obtained an international sample of multiple team types from five pharmaceutical and medical products MNCs and collected data from multiple sources, including team members and team leaders. Thus, our conclusions are strengthened by our use of multiple methods and sources of data. We also conducted extensive measurement development prior to survey administration to ensure cross-cultural equivalence of our measures. These design and methods features increase the validity and generalizability of our results.

Team Learning: New Complexity

Our results extend the team learning literature to explicitly include multiple influences in the MNC organizational context. Our study supports assertions that team learning depends on organizational context, but pushes the idea of context beyond a team's immediate micro context to demonstrate that macro context matters as well. Specifically, a corporate emphasis on global integration lowers team learning, but an emphasis on responsiveness and knowledge management norms and procedures increases team learning. The theoretical implica-

tions of our results are strengthened by our inclusion of several micro context controls. Indeed, our micro context variable, autonomy, strongly influenced team learning in our model. However, even after controlling for this aspect of micro context, our research provides initial evidence that macro context offers additional explanatory power for team learning. Finally, beyond the hypothesized macro context features, a macro context control variable, firm performance, also influenced team learning. This finding may mean that firms with more munificent resources better support team learning. Future research should consider the implications of firm performance and other macro context aspects for team learning.

Importantly, beyond demonstrating the relevance of a distinction between micro and macro context, we also demonstrate that different context variables may provide competing influences on team learning, with some features (global integration) impeding team learning, and others (local responsiveness and knowledge management) supporting team learning, after supportive elements in the micro context are controlled for. Prior research has focused primarily on the supportive role of micro organizational context. In the single notable exception, Edmondson's (2003) research in a health care context showed that several features of macro organizational context did not affect team learning behaviors, although she expected they would. One possible explanation for this difference in results might be the MNC setting. As noted earlier, global business creates the difficult challenge of managing demands for both integration and responsiveness. This environment produces macro organizational strategies and systems closely linked to team behaviors, and it may introduce competing influences on teams. For teams in complex contexts such as MNCs, it is not enough to simply look at the immediate features of a local work unit, such as autonomy. To fully understand team learning, one should consider the influences and resources provided by a team's broader macro context alongside micro context features.

Our study is a first step toward uncovering specific features of macro organization context that matter to team learning, and our findings suggest the need for additional research to include factors at multiple levels to tease out the particular organizational features most likely to support or impede learning. The finding that some macro context aspects impede team learning suggests value in future research on ways to balance competing influences. For instance, the positive effect of knowledge management and the strongly positive influence of the micro context control variable assessing autonomy

on team learning indicate there are opportunities to balance competing influences on learning created by variations in context. To achieve this balance, an organization needs knowledge management norms and procedures that have been proactively designed to encourage teams to adapt ideas developed in other parts of the organization to fit their particular local context, as opposed to norms that foster habitual dependence on others' unaltered ideas. Such dependence will result in decreased team knowledge creation. Currently, we do not have sufficient evidence to offer explicit prescriptions about these balancing efforts, but our results suggest the value of additional research to develop them.

Our results also demonstrate a direct link between the learning teams achieved and team performance. Specifically, teams identified by their leaders as better learners had both higher team-reported quality of interpersonal relations and higher leader-rated task performance. This finding extends previous findings about the importance of team learning behaviors such as information exchange and voice. These results are further strengthened by our assessment of both task performance and interpersonal relations and our collection of data on each of these aspects of team effectiveness from different sources, in a variety of team types. As a caveat, however, we note that although our theory suggests that team learning increases the quality of interpersonal relationships, it is plausible that this relationship is recursive. That is, improved interpersonal relationships resulting from team learning could in turn produce a team environment of more effective learning. Future work on this relationship should use longitudinal research designs capable of examining this unfolding pattern.

Finally, our results inform international management research, though doing so was not the direct focus of our research question. Scholars have described teams as a critical coordination and learning mechanism in the complex environment of MNCs (Gupta & Govindarajan, 2001), yet little empirical work exists to demonstrate how effective teams are in complex MNCs. Global integration is crucial for many firms; however, the efforts to create uniformity and cross-subsidiary synergy may reduce learning in teams and subsequently harm team performance. In other words, in MNCs emphasizing global integration, by at least one measure of learning, teams engaged in less learning. Likewise, in subsidiary locations structured for more responsiveness, teams engaged in more learning.

Given the complex demands placed on MNCs by

their global and local environments, we would *not* conclude that MNCs should alter strategy to increase team learning. Nor do our results suggest value in isolating teams from the larger context. Teams operating isolated from their organization are not productive, but neither is constraining team learning to the point where team performance suffers. The need for a dual focus may help explain why previous research has shown that although a learning orientation can encourage adaptive behaviors that lead to improved performance, teams can compromise performance in the near term by over-emphasizing learning, particularly when they perform well (Bunderson & Sutcliffe, 2003). Additional theory development about MNC strategy implementation is needed in which researchers bring together international management strategy theories and organizational behavior theories to seek appropriate solutions to support learning *and* alignment with organizational initiatives.

Further, our findings should not be construed as suggesting that managers avoid integrating over locations. Rather, we agree with Klein and Barrett, who stated, "What you really want is local practice within global processes. You should allow for certain variation between groups as long as there is the discipline of using global processes" (2001: 22). In MNCs, certain processes (for example, procurement) need to be globally integrated; however, enabling subsidiaries to meet the needs of their local contexts by adjusting practices and acting somewhat independently will facilitate team learning. Stated another way, local team-level learning should be encouraged within parameters that include an MNC's need for global efficiency.

Limitations and Future Research

Although we controlled for a number of micro context features previously demonstrated to influence team learning (e.g., training, feedback), we did not examine the intervening processes, and so open questions remain. Under what circumstances will macro organizational factors dominate micro context features? When will the opposite hold? We encourage future researchers to develop research designs able to sample teams from multiple organizations and collect data on contingent practices to determine how strategies and policies are carried out at lower levels. Our study presents a first cut at examining macro and micro context variables and team learning. Because of the research design challenges posed in collecting a large sample of teams from multiple locations of multiple MNCs, we necessarily had to consider trade-offs in measurement. Our focal level of analysis was the team, so we

collected the finest-grained data from teams to accurately capture our dependent variable, team learning. Our measures for the macro context variables were simpler. That we achieved intriguing results with even these basic measures suggest there is value to be gained in future research by obtaining more comprehensive measures of macro context variables, such as the extent to which specific activities are conducted in each subsidiary location, and exactly how these activities are adaptive.

Further, as stated earlier, an important boundary condition for our analysis was that we focused on colocated teams within a single subsidiary. We encourage examination of the manner in which micro and macro context influences team learning in cross-subsidiary and global teams. In these teams charged with coordination, MNC strategies around global integration may facilitate team learning, while local responsiveness may hinder team learning.

We noted the important tension that may exist in MNCs between maximizing internal team processes and performance, yet we did not measure organizational gains in this study. Therefore, although we can state that features of MNC macro context influence team learning and, subsequently, team performance, after firm performance is controlled, we cannot make an explicit statement that this influence is good or bad for *organizational* outcomes. Future research attempts to assess effects both on teams and organizations are needed. Future research should explore these issues in greater detail.

In conclusion, our results represent a significant step in the team learning literature in that they demonstrate the role of macro organizational context in team learning. Teams get competing signals from their macro organizational contexts, and they often face opposing needs for integration and responsiveness. Although our study demonstrates that an emphasis on global integration may reduce team learning, mechanisms such as increasing exposure to other parts of the value chain, developing knowledge management norms and procedures, and altering the level of team autonomy may mitigate this influence. Others in international management have noted the tension between integration and responsiveness, but our study—a first step in understanding specific outcomes of these tensions related to team learning and performance—suggests that further exploration of team learning in a variety of organizational contexts is a promising area for future theory building, research, and practice.

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