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**INTERCULTURAL ANALYSIS OF THE
MEANING OF TEAMWORK: EVIDENCE
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ABSTRACT

This paper develops a conceptual framework to explain variance in the meaning of teamwork across national and organizational cultures. Teamwork schema representing the knowledge categories team members used to think about teams were derived from team members' language. The frequency of the use of schema was then analyzed. Significant interaction effects revealed by MANCOVA indicated that use of teamwork schema varies across countries and organizations after controlling for gender, functional background, and total words in an interview. Given these results, we returned to our interviews and used an inductive approach to illustrate and further explain the mechanisms for variation in teamwork schema, in order to provide guidance for future research on collective cognition and practice in multinational organizations.

Given the prevalence of work teams in multinationals and evidence that team processes vary across cultural contexts (Earley, 1994; Gibson, 1999a), we argue in this paper that we need to take a step back and consider whether, at a basic level, the meaning of teamwork varies across cultures. Teams embedded in different cultural contexts are likely to develop different ideas about teamwork that include knowledge about the structure of teams, interpersonal routines, and authority relationships (Weick and Roberts, 1993). Existing literature suggests that this knowledge plays an important role in attitude formation and organizationally relevant behaviors (Walsh, Henderson and Deighton, 1988; Hutchins, 1991; Rentsch, Hefner and Duffy, 1994). However, no current research examines cultural and organizational differences in the meaning of teamwork.

In this paper we develop one possibility – that context may affect teams by influencing collective cognition concerning the meaning of teamwork. Previous research has established that collective cognition is an outcome of several factors including, national culture, organizational culture, function, and gender (e.g., Converse, Cannon-Bowers and Salas, 1991; Gannon et al. 1994). Our objectives in this paper are to examine categories of knowledge, or teamwork schema, members hold for teamwork, and investigate whether these categories vary across national and organizational cultures. In doing so, we integrate collective cognition theory with intercultural organizational theory. We then examine what this implies about processes in teams, and the management of teams across cultures and organizations.

We accomplish these objectives using an innovative approach. We first review existent literature on work teams, collective cognition, and the basic categories of meaning that we refer to as teamwork schema. As we do so, we identify three general research questions to guide subsequent theory development. Next, we examine these research questions using rich qualitative analyses of team members' language about teamwork with a large sample of team members across national cultures and organizations. We then use these analyses to both evaluate support for our general expectations, and to develop a conceptual framework for collective cognition research concerning teamwork schema.

WORK TEAMS ACROSS CULTURES

Over the past few decades organizations have become increasingly global. Concurrently, the use of work teams in organizations has dramatically increased (Lawler, Mohrman and Ledford, 1992; Osterman, 1994). This increase reflects a belief that work teams are an appropriate mechanism to deal with challenges and opportunities presented by the dynamic global business environment (e.g., Myer, 1993; Mohrman, Cohen and Mohrman, 1995). Recent research supports this belief and suggests that team-based systems help organizations respond to performance pressures for speed, cost, quality and innovation (Lawler, Mohrman and Ledford, 1992; Osterman, 1994; Mohrman, Cohen and Mohrman, 1995).

Increased emphasis on teams creates both opportunities for management as well as additional challenges in terms of obtaining the positive benefits of teams while reducing potential problems associated with group work. Multinational organizations face special challenges implementing team-based systems across global facilities (Kirkman and Shapiro, 1997). Intercultural theories of organizational behavior suggest that managerial initiatives such as implementing team-based systems must be consistent with the cultural context in which each of the multinational organization's facilities are embedded (Erez and Earley, 1993; Earley, 1994; Earley and Mosakowski, 2000).

Despite this recognition, management scholarship has been criticized for its relative inattention to the impact of cultural context on the generalizability of theory, and to the meaning of key organizational constructs in different cultural settings (e.g., Earley and Singh, 1995; Doney, Cannon, and Mullen, 1998). Furthermore, researchers have noted a need to consider the impact of context more explicitly in theory development and empirical research on teams (Mohrman, Cohen and Mohrman, 1995). A handful of empirical studies on teams have reported that relationships between key variables differed across cultural settings, demonstrating the importance of considering cultural context in team research. For example, sensitivity to group norms was a more important element of leader behavior in Iran and Mexico than in

the United States (Ayman and Chemers, 1983; 1986). In a another study, the same goal setting intervention produced markedly different group interaction in Israeli versus US teams (Earley and Erez, 1987). Finally, Chinese, Israeli and American teams exhibited different tendencies to engage in social loafing (Earley, 1994).

More recently, Gibson (1999a) found that the relationship between team beliefs and team performance differed in American and Indonesian work teams. In collectivistic work teams (typical of Indonesia), strong positive beliefs enhanced team performance. In individualistic work teams (typical of the U.S.), strong positive beliefs had no relationship or inhibited team performance. Similarly, resistance to working in teams varied depending upon the cultural orientation of employees in the U.S., Finland, Belgium, and the Philippines (Kirkman and Shapiro, 2000). Individualistic respondents reported higher levels of resistance to working in teams than collectivistic respondents. Taken together, these studies suggest the danger in ignoring cultural context in theory and research on teamwork. These studies also suggest that practices developed in one cultural context may not produce the desired results if implemented in other cultural contexts.

Given evidence that cultural context relates to differences in team processes, we investigate whether meaning structures such as teamwork schema vary across national cultures and organizational cultures. Teamwork schema are products of collective cognition and they provide individuals with an understanding of, and structure for, working together as a team. In the next sections we briefly describe the nature of collective cognition and teamwork schema.

COLLECTIVE COGNITION

Collective cognition refers to emergent group processes involved in the acquisition, storage, transmission, manipulation and use of information (Klimoski and Mohammed, 1994; Hinsz, Tindale and Vollrath, 1997; Anand, Manz and Glick, 1998; Gibson, 1999b). Research suggests team members share cognitive

processes, and cognition can be meaningfully understood at the group level of analysis (e.g., Cannon-Bowers, Salas and Converse, 1993; Larson and Christensen, 1993; Carley, 1997). Collective cognition depends upon a group's ability to process incoming information as well as its ability to access and process stored information about past experiences. Intra-group communication is a form of information processing (e.g. von Cranach, Ochsehein, and Valach, 1986; Wegner, 1987). Thus collective cognition occurs during group discussion and social interaction as workers struggle together to answer several key questions, including questions about members, the group itself, tasks, and the group's context.

A key component of collective cognition is the ability of groups to maintain some sort of long-term memory (Walsh and Ungson, 1991). At the most basic level, a group's long term memory system consists of the group's store of knowledge, codified by patterns of discourse and operationalized by the words, actions, and interactions of organization members (Gibson, 1999b). Knowledge can be contained in individual team members' minds or it can be stored in external locations (e.g. in databases or organizational artifacts) (Anand, Manz and Glick, 1998; Anand, Clark, and Zellmer-Bruhn, 1999). Group transactive memory, for example, consists of information held in individuals minds, combined with their knowledge of information not personally known by them but which can be retrieved when required (Wegner, 1987; Anand et. al. 1998). Given this collective functionality, group memory systems tend to be more robust than the memory of any individual, are more widely distributed, and have greater capacity than any individual memory (Hinsz, Tindale and Volrath, 1997). Most theorists point out, however, that group memory may not necessarily resemble an individual's memory. Furthermore, it may be most appropriate to consider group memory as a metaphor for the wider set of knowledge and knowledge processing capabilities possible in teams (Locke, 1999).

A key phenomenon that occurs during collective cognition is that over time, similar ideas are stored together in the group memory system in "categories." Such categorization has been identified in previous research as team mental models (e.g., Klimoski and Mohammed, 1994) and knowledge schemas

(Rentsch, Heffner, and Duffy, 1994). More specifically, it is through collective cognition that team members develop knowledge categories about teamwork, often referred to as teamwork schema.

TEAMWORK SCHEMA

The term schema is borrowed from individual-level cognitive psychology and describes a knowledge structure developed from past experience and used to organize new information and to facilitate understanding (Poole, Gray, and Gioia, 1990). Schema can be both very general and quite specific. Therefore, team members may have knowledge about a specific domain, (e.g., teamwork on a football team, or on a sales team), but are also likely to develop core knowledge about teamwork in general (Rentsch, Heffner, and Duffy, 1994). It is this core knowledge that comprises teamwork schema. In a critical way, teamwork schema provide team members with an understanding of, and a structure for, working together as a team.

Two basic conceptualizations of the content of schema exist: perceptual and behavioral. According to the perceptual perspective, schema capture assessment of stimuli in situations in which people are trying to conceptualize and interpret what is going on around them. Within this paradigm, there is disagreement about what aspects of knowledge are shared. Some researchers suggest beliefs (Walsh and Fahey, 1986), understanding (Daft and Weick, 1984), or values (Gray, Bougon, and Donnellon, 1985) as the knowledge held in common, while others refer to shared frames of reference (Isabella, 1990), shared categories (Fiol, 1993), or relationships among concepts (Weick and Bougon, 1988).

Alternatively, the behavioral perspective suggests that schema capture what people ought to do about what they see or comprehend. In this view, schema are often treated as internalized behavioral routines or "scripts." For example, Cannon-Bowers, Salas and Converse (1993) describe the content of team schema as information about the need to communicate with one another, compensate for one another's weaknesses, the appropriate amount of mutual performance monitoring, and the type of internal

coordination strategies needed for the team to function effectively. Using this same perspective, Weick and Roberts (1993) propose that interrelated social activities embody schema. Teamwork schema reflect organized knowledge and individuals' tendencies to categorize what they "know."

We combine both perceptions and actions, focusing on sources of variation in teamwork schema.

Teamwork schema may represent efforts to simplify events and responsibilities to make them more tractable. They reflect organized knowledge, usually in the form of a set of concepts stored and retrieved from memory in relationships to one another. Such organized knowledge may derive from presumed cause and effect linkages or they merely may reflect learned patterns.

Teamwork schema may have important effects on team behavior and performance (Walsh, Henderson and Deighton, 1988). Though little empirical evidence exists, cognitive categorization theory (Shaw, 1990; Larkey, 1996) proposes that culturally based schemas in both employees' and managers' minds predispose each to interpret the communication of others according to culturally bound expectations. For example, one's cultural definition of a good leader or employee may be very different from another's definition, leading to misinterpretations of the behaviors of individuals in those roles (Hofstede, 1984).

Specific to team contexts, Orasanu and Salas (1993) theorized that teams develop shared situational schema for a specific problem through their communications. These schema are grounded in the team's stable schema for the system, task, and team, but go beyond them. These schema include shared understanding of problems, goals, information cues, strategies, and member roles. Once shared schema have been created, they provide a context for interpreting directions or information requests, and guide information sharing and actions at appropriate times. They also aid members in predicting behavior or needs of other members. Unfortunately, this model has not yet been empirically tested.

VARIATION IN TEAMWORK SCHEMA

Taken together, prior research suggests that teamwork schema are likely to vary across teams and impact collaborative outcomes, thus there are potentially important managerial implications of such variance. A long history of research suggests that the process of collective cognition, which shapes teamwork schema, is influenced by many sources, including culture. Some knowledge may be widely shared by members of a national culture, while other knowledge may be limited to members of a restricted group, such as members of an organizational or functional culture. In this section we review potential sources of variation in teamwork schema.

National Culture

Cross-cultural research has established that national culture explains somewhere between 25 and 50 percent of variation in attitudes (see Gannon and Associates, 1994 for a review). Research also indicates that national culture is related to basic social behaviors such as aggressive behavior, conflict resolution, social distance, helping behavior, dominance, conformity, and obedience (see Triandis, 1994 for a review), as well as decision-making and leadership behaviors (Hofstede, 1980; Schneider and De Meyer, 1991; Shane, 1994).

In cognitive terms, culture is viewed as a set of shared meanings, transmitted by a set of mental programs that control responses in a given context (Hofstede, 1980; Shweder and LeVine, 1984). The basic thesis of a cognitive approach to culture is that processing frameworks acquired in one culture persist and influence behavior even though circumstances change. In this manner, culture guides our choices, commitments, and standards of behavior (Erez and Earley, 1993). The outcomes of culturally specific cognitions are the substance of most cross-cultural research. This research commonly argues that many of the cultural differences are due to variations in cultural values. Although variations *within* countries do exist, people within a given country often do share common values and these values can be utilized to

distinguish one country's culture from another (e.g., Hofstede, 1980; Shweder and LeVine, 1984; Triandis, 1989). Analysis of the underlying processes by which they are created and may eventually be modified is generally missing (Cray and Mallory, 1998).

We argue that it is not enough to observe that behaviors differ across cultures; we must be able to understand how those differences come into being. If one can determine the categories by which team members comprehend their environment, the available behaviors are clarified and the link between stimulus and behavior is elucidated. By understanding the cultural basis for cognitive frameworks, it becomes clearer which values may be triggered and applied in a choice or decision context. Based on the previous literature on cognition, cultural values, and organizational behavior, we propose the following general research question:

Research Question 1: Does the content of teamwork schema vary across national cultures?

Organizational Culture

A second important force that might shape teamwork knowledge schema is organizational culture.

Organizational culture is commonly defined as an identifiable set of values, beliefs and norms shared by members of an entire organization or subunit of an organization (Schein, 1993; Trice and Beyer, 1993).

There is empirical evidence demonstrating differences in organizational cultures (e.g. Bartunek, 1984; O'Reilly, Chatman and Caldwell, 1991; Sackman, 1992) and even organizations that appear to be highly similar, such as large public accounting firms, vary widely in their underlying value structures (Chatman and Jehn, 1994).

Organizational culture shapes the beliefs, expectations, and behaviors of organizational members (Schein, 1993; Trice and Beyer, 1993). Empirical evidence also indicates that organizational culture affects meaning structures, in the form of perceptions above behavioral norms, held by organizational members (Gundry and Rousseau, 1994). Organizational culture may play a similar role in the development of

teamwork schema.

Many have argued that organizations depend on cognitive views shared by at least some of the organization's members (Langfield-Smith, 1992; Laukkanen, 1994). Without shared cognition, they argue, the link between apprehension and action would have to be continually renegotiated. This does not imply that all members of the organization must have the same set of cognitions, but rather that for those who share certain responsibilities, for example in a team context, some degree of congruence among cognitive frameworks must exist. Given that organizational cultures are likely to vary in significant ways and that they also will influence members' beliefs and meaning structures, we pose our second research question:

Research Question 2: Does the content of teamwork schema vary across organizational cultures?

Interaction Among National And Organizational Cultures

It is important to realize that neither national culture nor organizational culture exist in isolation of one another. One of the few studies to address the relationship between culture at the national and organizational levels was conducted by Hofstede et al. (1990). Their results demonstrated that even when cultural differences in values persisted, organizational and workgroup practices tended to dominate, creating a unified group culture and sense of equality for all group members. While the results of this study point to a separation of national and organizational culture, it seems probable that some relationship exists between the two. Many researchers have pointed to the complicated embeddedness of organizational cultures (Myerson and Martin, 1987; Alvesson 1993).

Organizational culture affects behavior directly by providing guidelines and expectations for organizational members. A similar statement can be made about the link between national culture and behavior (England, 1983). It is likely that national culture affects organizational culture (and perhaps in exceptional circumstances, vice versa) and that the two levels of culture may have contradictory effects

on organizational behavior (Gibson, 1994). In a similar line of inquiry, Lincoln, Hanada, and Olson (1981) found that matching organizational culture with societal culture resulted in high job satisfaction. Based on this evidence, we argue that that national culture must be considered along with organizational culture in order to fully understand the relation of an organization's culture to organizational functioning. The following research question captures this idea:

Research Question 3: Do teamwork schema vary based on the interaction of national culture and organizational culture?

METHODS

In this section we describe the process we conducted to identify the teamwork schema used by members of our sample to communicate their understanding of teamwork. We describe the development of our textual database, steps taken to identify teamwork schema used by members of our sample, and development of a quantitative database to provide an initial statistical examination of our general research questions. Finally, we draw upon the tenants of grounded theory (Glaser and Strauss, 1967) to illustrate and further explain the mechanisms for variation in teamwork schema, operating in a more inductive mode to develop a conceptual framework that guides future research and practice. We chose grounded theory building because of our interest in looking at a rarely explored phenomenon for which extant theory did not appear to be useful. In such situations, a grounded theory-building approach is more likely to generate novel and accurate insights into the phenomenon under study than reliance solely on deductive analysis (Glaser and Strauss, 1967; Brown and Eisenhardt, 1997).

Language as an Indicator of Teamwork Schema

If we accept that teamwork schema have important effect on teams, a natural issue that arises concerns operationalizing schema. Many theorists have argued that because cognition is both reflected in and reflective of language, we need to pay more attention to the language employed by organizational members (See Laukkanen, 1994, for a review). A growing interest has emerged in examining how

language and discourse are used to establish and maintain relationships in organizations (Drew and Heritage, 1992). The study of language within work settings has developed a strong tradition but the majority of these studies have employed formal modes of linguistic analysis, with an emphasis on grammar, semantics, and the structural properties of sociolinguistics, such as conversation analysis (Drew and Heritage, 1992). More recently, organizational theorists have begun to examine how language shapes and reflects the underlying cognitive frameworks that guide organizational behavior. Utilizing qualitative analytical techniques, these approaches pay greater attention to the way discourse expresses the collective mindsets of the speakers (Gilbert and Mulkay, 1984; Cray and Mallory, 1998).

It seems likely that teamwork schema are revealed in the language that team members utilize and thus represent how the group members collectively think or characterize a phenomenon. Cognitive frameworks available to teams are shaped by and reflected in their language. These, in turn, are influenced by the culture of which the language is a part. Analysis of the language used by team members can help identify the cultural influences on their underlying cognitive structures (Cray and Mallory, 1998). This type of investigation has roots in the discourses-based approach advocated by Geertz (1983) and Bruner (1990). According to Bruner (1991: 3), “cultural products like language and other symbolic systems mediate thought and place their stamp on our representations of reality.” Thus, analysis of language can be used to compare behaviors in separate cultures, and is also useful in investigating instances where representatives of two or more cultures must interact to create, at least temporarily, a set of shared cognitions. Based on the research reviewed above, we began with the premise that teamwork schema exist and can be identified based on the language that team members use.

Sample

We selected the cultural contexts for our research to maximize differences on the two key aspects of culture with demonstrated importance for work behavior: power distance and collectivism (Erez and Earley, 1993; Earley and Gibson, 1999). Power distance represents the degree to which members of a

culture accept and expect that power in society is unequally distributed (Hofstede, 1980). Cultures low in power distance minimize inequalities, favor less autocratic leadership, and favor less centralization of authority. Cultures high in power distance are characterized by greater acceptance of inequalities and preference for authoritarianism. Collectivism concerns the strength of ties between individuals in a society, the degree to which members are integrated into groups, and the extent to which members of a society value their membership in groups (Hofstede, 1980; Earley and Gibson, 1998). The cultural contexts we chose were the U.S., France, Puerto Rico, and the Philippines. According to research conducted by Hofstede (1980), employees in the U.S. and France tend to be relatively low in power distance and collectivism; employees in Puerto Rico and the Philippines tend to be relatively high in power distance and collectivism.

The organizational contexts selected for our research were based upon two general guiding principles: (1) we selected organizations within the same general industry to control for possible industry-related effects; and (2) we selected only organizations that had facilities in each of the countries identified above. We selected the pharmaceutical and medical products industry because production of pharmaceuticals is geographically dispersed around the world. We consulted the *Corporate Families and International Affiliates Directory* to identify pharmaceutical organizations with facilities in each of the countries of interest. Only organizations with facilities in each of four regions (the U.S., Latin America, Southeast Asia, and Western Europe) were considered. This procedure yielded a total of ten multinational pharmaceutical and medical products organizations. We contacted human resource professionals in each of the organizations, provided a brief introduction to the research, and screened for their extensive use of teams. Six of the ten multinational organizations used teams across a number of functional areas, including human resources, sales, marketing, manufacturing, and research. All functional areas in each organization in each country were involved in the research. All teams in the sample were homogenous in terms of function, organization, and nationality (e.g., a sales team in Organization A consisting of all Puerto Ricans).

The six organizations, disguised here with code letters, varied dramatically in terms of organizational culture. The mission of Organization A, for example, is to become a world-class, results-oriented culture providing consumers and customers with many options in terms of their core products, bringing differentiated, cost-effective solutions to market quickly and with flawless quality through a diverse team of energetic employees. Their core values are respect for the dignity of the individual, uncompromising integrity, trust, credibility, and continuous improvement. The organization has been struggling for several years. The company is fragmented as a result of divesting and downsizing. The focus has been on cost reduction and reinforcing the traditional, established excellence of a long standing product line.

Organization B, in contrast, follows a theme of continual improvement and looks to reorganize to do things better, quicker, and more profitably. Their mission is discovering, developing, and bringing to market health care products that fulfill unmet medical needs. They have achieved a steady increase in sales for half a century, and attribute these results to long term investments in people and processes. They claim in corporate communications, that also essential to these accomplishments is their "unrelenting attention to focus, innovation and effectiveness" which enable them to "navigate successfully through challenging times in the short term, while simultaneously strengthening our position for the long term."

Organization C describes the source of their competitive advantage as the energy and ideas of their people. Their strength lies in what they value: customers, innovation, integrity, people, and performance. In corporate communications, they describe themselves as "people with a purpose, working together to make the lives of people everywhere healthier, striving in everything we do to become simply better as judged by all those we serve: customers, shareholders, employees and the global community." Their focus is personal commitment and team spirit, and the creation of a common culture around that world that enables them to make people's lives healthier.

Organization D is a leading research-driven company whose mission is to provide society with superior products and services, innovations and solutions that improve the quality of life and satisfy customer needs. They also strive to provide employees with meaningful work and advancement opportunities and investors a superior rate of return. They view their ability to excel at competitively meeting society's and customer's needs as dependent upon the integrity, knowledge, imagination, skill, diversity and teamwork of employees.

Organization E is the most comprehensive and broad-based manufacturer of health care products in the sample, as well as a provider of related services for the consumer, pharmaceutical, and professional market. Their credo is focused on ethics, social responsibility, local responsiveness, flexibility, and excellence. They are managed by franchise, or groups of product categories, such as skin and hair care, endosurgery and wound care. Operating management of each franchise is led by a president, general manager, or managing director who reports directly to a company group chairman.

Finally, Organization F is focused on learning, competition, excellence, achievement and striving for new frontiers. They insist on excellence and are intolerant of bureaucracy. They strive to act in a boundaryless fashion, always searching for and applying the best ideas regardless of their source. They prize global intellectual capital and the people that provide it. They purposely build diverse teams to maximize innovation and have a decentralized structure. They are legendary for attitudes like "only 'A' players are desired. Corporate communications describe the "right" leadership teams as those with "the agility and speed to seize the big opportunities we know this changing world will present us."

Design

A written project proposal was submitted to each of the six organizations. This proposal was followed by phone contact to gather further information about the types of teams being utilized and identify an interview sample. Human resource professionals in each firm were asked to identify team members for

the interviews. We asked that they identify individuals from a variety of functional team types, from a variety of levels in the organization, and from teams that were both poor performers and high performers. These requests resulted in interviewees with teams ranging from manufacturing teams, to product management teams to sales teams to executive project teams. Individuals ranged in rank from hourly manufacturing employees to vice president, to general manager of a country unit. These individuals represented teams which had won awards to teams that had been disbanded for ineffectiveness.

After we had identified our interview sample, we traveled to each region of the world and conducted in-depth personal interviews these individuals. We posed a series of questions pertaining to concepts of teamwork, the function of the teams, team motivation, leadership in the teams, feedback and reward systems, sharing of knowledge and practices across teams, metaphors for teamwork, and the impact of culture on teams. Interviewees were also asked to discuss which factors they felt were the most important facilitators and inhibitors of team effectiveness. A complete list of the interview questions is contained in the Appendix. The researchers also encouraged interviewees to discuss any additional issues pertinent to the use of teams in multinational organizations. Interviews were conducted in the native language of the interviewees, with the assistance of a team of bi-lingual interviewers.

We interviewed a total of 107 individuals. These individuals represent 52 teams. Between one and eight individuals were interviewed from each team. In the United States 44 individuals were interviewed; in France 16 individuals; in Puerto Rico 23 individuals; and in the Philippines 24 individuals were interviewed. In Organization A, a total of 30 people were interviewed; in Organization B, a total of 6 people were interviewed; in Organization C, a total of 32 people were interviewed; in Organization D, a total of 13 people were interviewed; in Organization E, a total of 8 people were interviewed; and in Organization F, a total of 18 people were interviewed.

Overview of Analysis Plan

Our analysis plan was guided by three main goals. First, we wanted to identify common language categories used by our interviewees to describe their understanding teamwork. Second, we wanted to explore whether the frequency of these categories differed across countries and organizations in our sample. Finally, we wanted to use the rich qualitative data we collected to develop a conceptual framework that can be used to guide future research concerning the sources of variation in teamwork schema and the managerial and performance implications of these schema.

To accomplish these goals we first conducted qualitative analyses to identify categories of language about teamwork. Qualitative analysis involves the process of making sense of data that is not expressed in numbers, and is especially useful in exploratory stages of theory development (Tesch, 1990). The analysis was conducted in a manner consistent with that recommended by both Strauss and Corbin (1990) and Gephart and his colleagues (Gephart, 1993; Wolf, Gephart, and Johnson, 1993). We worked inductively and used computer-assisted text analysis to facilitate data exploration (Jehn and Doucet, 1996). Then we developed a quantitative database containing the occurrence of these categories in each interview. We conducted a variety of statistical tests to examine our core issues. Finally, we used interview excerpts to identify key passages to illustrate various teamwork schema and to develop a conceptual framework.

Analysis

All interviews were tape recorded and transcribed by professional transcriptionists who were native speakers in the languages used in the study. As they transcribed, they translated the interviews into English. Any words that were not readily translated were left in the native language. This process resulted in a text database consisting of over 1,000 pages of single-spaced text. The content analysis program TACT (Bradley, 1989; Popping, 1997) was utilized in order to facilitate comprehensive text analysis. Computer-aided text analysis programs are very helpful, as they allow examination of very large amounts of text in a relatively efficient manner. Computer-aided searching allows the

categorization and comparison of texts from various interviews to examine content.

In order to use TACT a structure and coding scheme must be defined for the text database. We determined a coding scheme which allowed us to distinguish interviewees' gender and functional area, teams, organizations, and nations. As a result of this input process, TACT creates a special data file called a "personal database" that contains information about the position and structure of every word in the database. The total number of words in our database was 266,905 words.

Following Gephart and others (Gephart, 1988, 1993; Gephart and Wolfe, 1989; Jehn and Doucet, 1996) the next step was to develop a list of words and/or categories of words that are thought to capture the construct of teamwork. If there is adequate theoretical background, such a list may be derived from previous research, extant scales, dictionary lists and thesaurus lists. However, for this research, we wanted to avoid this deductive list creation for two reasons. First, the construct of teamwork schema is very new and very little extant research exists. Second, and more importantly, this sample is multi-cultural, and our research question is whether such schema or models *vary* across cultures. Therefore, developing word lists from western-based theories, dictionaries and thesauruses would be inappropriate. These sources may miss important culturally-embedded terms. Furthermore, the sources may apply alternative or inappropriate meanings to words other than those intended by non-western speakers.

Therefore we implemented a process designed to develop word lists which captured cultural nuances in meaning. First, we created an alphabetical list of every unique word in the interview database. The alphabetical word list for our interviews contained 6,661 unique words. Copies of this list were given to two raters from each country in the sample. The full word list contained many words that were not directly related to teams or teamwork (e.g. the word "the" or "a") and also many intonations (e.g. "um" or "aaah") because the database was transcribed verbatim from interviews, thus to remove all irrelevant or nonsensical terms, raters were asked to independently circle all terms they felt were related to teamwork.

They were told to broadly define “teamwork” and were not given a definition of teamwork. When the raters had completed their task, a complete list of all unique terms identified across raters was developed from these individual lists. This list contained 1,740 words. Eliminating spelling variants of the same word root (e.g., “participate” also occurred in the word list as participates, participated, participation, participating) resulted in a list containing 889 words.

Next, we printed the words onto cards and asked five raters representing each country involved in the study to sort them into categories they felt represented metaphors for teamwork. The raters worked collaboratively to categorize the words. They posed questions to each other about why a given word was placed into a category, and expressed unique ways in which a term could be used in their native culture. Through a process of discussion, negotiation, and elimination, the raters arrived at five categories and developed the following names for each category: (1) **family**; (2) **sports**; (3) **community**; (4) **associates**; and (5) **military**.

These five teamwork schema categories contained an average of 30 unique words per category, as designated by our raters from each country. The raters defined the categories broadly and placed words in them that they felt elaborated on the category from their native language point of view. Before running our main analyses, however, we needed to determine if these same words were being used to describe teamwork *in the context of our interviews*. This process is often referred to as “in-context verification” (Gephart, 1993; Gibson, 1994).

TACT allows the creation of categories with multiple words. Each of the five categories was defined with the words identified by the raters. TACT was instructed to pull excerpts from the text database containing each term in each category (a total of approximately 150 words). We extracted five lines of text before, and five lines of text after, the term was used. This created a “subtext database” consisting of approximately 400 pages of single-spaced excerpts. We read each excerpt to verify the manner in which

each term had been utilized. In some cases it was very clear that the term was not being used in conjunction with teamwork. For example, the word “depends” had been selected for the family category by the raters. In the database, “depends” was used only in phrases like “it depends on...” to denote contingency. These comments did not relate to teamwork. For this reason, the word “depends” was removed from the category, as were other words that were clearly *not* being used to describe teamwork in our interview database. The final contents of each category after screening for in-context verification are displayed in Table 1.

Insert Table 1: Final Categories

After verifying the categories, we next determined the occurrence of each category in each interview, each organization, and each country. We used TACT to create five “category databases” containing excerpts of text which included any word in a category. From the list of text excerpts, several representative passages for each category were selected to illustrate how these categories were used with respect to teamwork. These excerpts are listed in Table 2.

Insert Table 2: Excerpts

Next, a frequency distribution was produced for each word in a category across all interviewees in the sample. Then a frequency distribution for each category by country was produced. This frequency represents how many times a word in that category occurred in the transcripts for that country. Finally, a frequency distribution for each category by organization was produced. With the information from the frequency runs in TACT, we created a database with entries for each of the 111 interviewees. We entered the frequency each category was used by each interviewee. Each category was considered a single variable.

RESULTS

Variation in Teamwork Schema

Our analyses utilized the quantitative database to provide an initial examination of our general research questions. A 4 x 6 MANOVA with five dependent variables was conducted. The analysis is a study of the role of country (the first factor) and organization (the second factor) on the frequency of occurrence of each of the five teamwork schema categories. The country factor is a four-level fixed effect contrasting Puerto Rico, the Philippines, France, and the U.S. The organization factor is considered a six-level fixed effect contrasting the six different organizations in the data base.

SPSS General Linear Models Procedure was utilized to compute Wilks' Λ , F-test approximations, degrees of freedom, and multivariate η^2 associated with the country main effect, the organization main effect, and the country by organization interaction. The results are presented in Table 3. The country effect (Wilks' $\Lambda = .67$, $F = 2.52$, $df = 15$, $\eta^2 = .33$ $p < .01$), organization effect (Wilks' $\Lambda = .51$, $F = 2.54$, $df = 25$, $\eta^2 = .49$ $p < .001$), and their interaction (Wilks' $\Lambda = .45$, $F = 1.88$, $df = 40$, $\eta^2 = .55$ $p < .001$) were all significant beyond the .01 level.

Insert Table 3: Multivariate and univariate statistics

Given that gender and function may also impact how we think about teams, there was some concern that effects of country and organization could be confounded by the effect of gender and function.

Furthermore, individual interviews varied in length, and we were concerned that results may be influenced by the overall number of words in an interview. In order to investigate these possibilities, a MANCOVA was performed in which country and organization were treated as the independent variables; gender, function, and number of words per interview were entered as covariates. The five teamwork schema categories were treated as the dependent variables. After adjusting for gender, function and number of words per interview, a significant main effect was still obtained for country (Wilks' $\Lambda = .67$, $F = 2.31$, $df = 15$, $\eta^2 = .33$ $p < .01$), organization (Wilks' $\Lambda = .57$, $F = 1.97$, $df = 25$, $\eta^2 = .43$, $p < .01$), and their interaction (Wilks' $\Lambda = .48$, $F = 1.71$, $df = 40$, $\eta^2 = .52$ $p < .01$).

Upon obtaining significant interaction effects, the next step in the analysis was to run tests of contrasts for country and organization to determine the relative contribution to each of the five teamwork schema categories. As presented in Table 3, the interaction of country by organization accounted for a significant portion of the variance in frequency of use of the military category ($F(8, 107) = 2.25, p < .05$), the community category ($F(8, 107) = 2.00, p < .05$), and the associates category ($F(8, 107) = 3.09, p < .01$). This indicates that beyond the main effects described above, organizations will tend to emphasize these teamwork schema to a greater or lesser extent in different countries. For example, Organization B utilized the associates category significantly more in France ($M=4.50$) than in Puerto Rico ($M=.75$). Organization D used the military category significantly more in the Puerto Rico ($M=1.00$) than in the U.S. ($M=.29$). Organization F used the community category significantly more in the Philippines ($M=4.33$) than in the U.S. ($M=.44$). Table 4 presents the mean frequencies for each category by country and organization.

Insert Table 4: Means by country and organization

The results of our initial analyses pointed to three major findings. First, our process of using multiple raters from the four countries resulted in the identification of several categories used to describe teamwork by team members in our sample. This finding illustrates that identifiably different language is used to define teamwork. While the five categories are not likely to be exhaustive, they do represent a set of distinct schema used by teams in our sample. As such, they provide a useful starting point to examine the phenomenon of teamwork schema.

Text analysis tools allowed us to quantify the frequency of occurrence of these categories and compare their use across cultural settings. This process resulted in our second significant finding—that certain schema are more prevalent in certain organizations and cultures. This suggests a relationship between national culture and teamwork schema and between organizational culture and teamwork schema. Our third finding was that organization and country interact and have an important effect on the

language used to describe teamwork. This finding indicates that the schema most prevalent in specific national cultures also vary according to the organizational culture within which the teams are located.

ILLUSTRATION OF TEAMWORK SCHEMA

We began this research with the basic question: Does the meaning of teamwork vary across cultural settings? We argued that language reflects underlying cognitive frameworks, and therefore focused on identifying language themes used by team members to describe teamwork. We found preliminary evidence that the meaning of teamwork does vary across both national cultures and organizational cultures.

Prior research suggests that collective meaning structures have important influence on behavior (e.g. Walsh, Henderson and Deighton, 1988; Weick and Roberts, 1993). Given the potentially critical role they may play, combined with the evidence we found for cross-cultural differences, our findings suggest the importance of developing more explicit theory concerning how cultural context affects the content of teamwork schema, and the subsequent implications for managing teams in diverse cultural contexts.

Drawing again upon the rich detail in our interview database, we used an iterative process combining the interview results with previous theory to illustrate potential sources and consequences of variation in teamwork schema. Such an approach of moving back and forth between qualitative and quantitative data, between theory, empirical results and theory development, has been recommended by several researchers (Eisenhardt and Bourgeois, 1988). This process allowed us to develop a conceptual framework delineating context-sensitive relationships between specific facets of national culture and teamwork schema, and between specific facets of organizational culture and teamwork schema. In the following sections we also address potential outcomes such as the use of particular schema and the managerial practices that are most congruent with specific schema.

National Culture

We found that the language themes used to describe teamwork varied across the four countries in our sample. Our inductive analysis of the interviews leads us to propose that these differences may be due, at least in part, to mechanisms associated with the level of power distance and collectivism in the four countries. Specifically, in the high power distance cultures of the Philippines and Puerto Rico, team members tended to utilize teamwork schema containing information about hierarchy such as the family and military schema. For example, one Filipino respondent said,

"I think maybe you've heard it from the other people, the idea of *pakikisama* [a Filipino word meaning teamwork]. The *pakikisama* is a value of working. It's more than friendship, it's more, family, mother, father, brother, sister. It's something in the team, everyone is caring for each other."

Invoking the military schema, another respondent said:

"I almost--one thing that comes to mind is...military teams.... if it's done right, I mean, it's very--they [team members] know what they're supposed to do...they know what has to be done, they know how to do it, and they do it! That's it. You don't have to spend a lot of time--I think the problem, too, that I've seen with teams is you spend so much time trying to decide how to be a team, you don't have enough time to be a team."

In contrast, across our five teamwork schema categories, the sport and the associates categories contain the least information about hierarchical relationships. Respondents in France used these schema most often, and the French tend to be moderate to low in power distance. For example invoking the associates category and illustrating this phenomenon, one French respondent said this:

"The other thing that happens, when you say to the team, OK, you're empowered [in this country], using the sports analogy, you'll find the second baseman running out to center field to try and catch the fly ball. You say, no, no, no, no, wait!"

We might expect then, that in cultural contexts characterized by high power distance, teamwork schema will contain more information regarding appropriate hierarchical relations in teams. The meaning team members ascribe to teamwork in high power distance cultures will include prescriptions for status relationships and shape members' expectations regarding hierarchical relationships in teams.

In addition to frequency of use, we found our interviews informative in terms of potential implications for

practice. For example, we examined the text excerpts to see how the family and military schema were used to imply managerial techniques. In nearly all instances in which a respondent used a word from the family or military category, they mentioned prescriptions for attitudes and team behaviors. For example, demonstrating the impact of the military schema one respondent in the Philippines said,

"I am supposed to be an active shooter in terms of assisting and liasoning with the people and making sure that [the organization's] kinds of problems are run at sort of a management level. At the moment its very [prevalent in the] rank and file, but not really with the staff. We have not really gone to the reduction of a lot of employees. So I'm helping to do that. Right now we're having to think in terms of manpower in the trenches..."

Demonstrating the impact of family schema, another Filipino respondent said,

"Yes, the familial society. The Filipino is very, very family-oriented. Absolutely. It's our religion, you know. Um, the Holy family and all. That, that in itself, you know having respect...yeah, that's something like cooperation..."

In the first instance, the military schema resulted in the belief that team members should be thinking about manpower. Problems associated with manpower were directed upward. In the second example, use of the family schema coincided with an attitude of respect toward those in high status positions. The behavior that resulted is described as a religious dedication to cooperation. These excerpts imply prescriptions for how teams utilizing the family and military schema should be managed. Based on findings such as these, we suggest that in teams which utilize the military or family schema frequently status relationships should be clearly defined; in teams that utilize the sport, associates, or community schema most frequently, status relationships can be informal or less pronounced.

These ideas coincide with intercultural research that has established that organizations are more effective when management practices in a work unit are congruent with national culture (Hofstede, 1980; Shackleton and Ali, 1990; Newman and Nollen, 1996). For example, Newman and Nollen (1996) found that work units managed in a manner consistent with the values of the external culture are more profitable than work units in which this fit is less well achieved. A logical extension of our findings is that when managerial practices coincide with teamwork schema, teams will be more effective. Specifically, teams which have military or family schema will be more effective when managed in such a way that recognizes

status relationships and incorporates these into the team structure. Teams that utilize sport, associates or community schema most frequently will be more effective when status relations are equal in teams.

A second important element of national culture for teamwork is the value of collectivism, or perceptions regarding obligation to community and in-group. Among other work-related beliefs, collectivism captures the inclusiveness of work groups (Earley and Gibson, 1998). Previous research has suggested that that Filipinos are highly collectivistic and in our sample, they used the teamwork schema that refers to the largest social aggregate -- community -- more frequently than team members in other countries. For example, one respondent in the Philippines said,

"The hut illustrates community. It's called a *nipa* hut. Sometimes you do require that the hut be moved from one location to another. And in the old days, *nipa* huts would probably be located along the safe side of a river because there's water there, fish would be there. Some erosion could happen and you would need to relocate the hut to a safer ground. In the Philippines, you would gather your neighbors, call them and you would put handles and literally lift the house--in one, big haul, the house as one big piece, and move it to a new location. And that's called the bayanihan spirit. I think that would best describe in my culture, how teams can work."

In contrast, across our five teamwork schema categories, the sport category arguably refers to the smallest social aggregate (e.g., a sport team typically consists of fewer people than a community), and this occurred most frequently in France, a low collectivism culture. For example, one French respondent said:

"I am trying to remember a meeting two years ago in which we want to think about teamwork, and the two or three persons who were presenting the systems, they were soccer players. So it's surely, it's basically a sport team, team image which will come. Yeah, I cannot say that, trying to have this team image."

Again, our interview excerpts also suggested implications for practice. For example, using the community schema, one Filipino respondent said,

"I think most Filipinos have where they're very regionalistic, I think. That most Filipinos would, would tend to clump together with, with co-town mates or barrio mates or province mates. That, I think itself, uh, it's natural thing to just open up to just anyone."

In contrast, illustrating the use of smaller social aggregates and the sports schema in a low collectivism context in France, one respondent said,

"Another one would be, how could I say that? The fact that somebody has to volunteer to be part

of a team. Uh, if somebody is involved, and if somebody is really interested in order to play the game and to work with this team. To indicate that team work is as important as the day-to-day work we can do in our own jobs."

Using words in the associates schema, another French respondent stated that his/her culture was not very collectivistic :

"Oh, I think the French culture is, I would say, very [indicates marching along with fingers], very directive. My circle is more motivated by the personal performance than by the collective discipline, surely. "

These excerpts demonstrate that schema shaped beliefs about who should be considered a part of a team and how central a role the team will serve in the respondents work life. Again drawing upon the rationale of cultural congruence, we would expect that teams utilizing the community schema will be more effective when the team is defined broadly, consisting of many individuals who have some connection to each other, even if these individuals are on the periphery of the central activity of the team. In contrast, we expect that teams utilizing the sport schema will be more effective when the team is defined in a more insular fashion, considering team members to be only those who have a direct bearing on the core activities of the team.

Organizational Culture

Our analysis also suggests that the occurrence of teamwork schema varies across organizations. Inductive analysis of the interviews leads us to propose that these differences may be due, at least in part, to variance on underlying dimensions of organizational values. O'Reilly, Chatman and Caldwell (1991) identified eight dimensions of organizational culture based on values held by organizational members: Innovation; Attention to Detail; Outcome Orientated; Aggressiveness; Supportiveness; Emphasis on Rewards; Team Orientation; and Decisiveness.

To illustrate how these organizational culture dimensions may relate to variation in teamwork schema, consider the dimension "Aggressiveness." Organizations with highly aggressive cultures tend to value competition, opportunism, and aggression, and tend to devalue social responsibility. Organization F has

been described as high on these dimensions; team members from this organization also used the teamwork schema that imply these values -- sports, military and associates -- more frequently than members of other organizations. For example a respondent in Organization F said:

I think the answer [to why they should want to participate on the team] is there is no formal incentive program, in terms of cash or whatever. But, the big incentive is that one of the core values in this company is boundarylessness, and you must be a player.

On the other hand, Organization B prides itself on its long standing reputation as a harmonious context in which to work. Observations and anecdotes suggest very little aggression and competition. Organization B used the family schema more frequently than other organizations in the sample. An example from Organization B illustrating the use of the family category is:

"We are a [organization name] family. So, you can see day by day that we work "among." And if I produce a lot that goes to the next step -- that is dosage - and they have problems on that stage, I have to be involved with them to make sure to correct that problem. So, we always socialize and always work together."

We expect, then that in highly aggressive organizational cultures, teamwork schema will contain more information about competition, opportunism, and aggression than in less aggressive organizational cultures. In supportive organization cultures, teamwork schema will contain more nurturing.

Beyond frequency of use, our interviews also suggest implications for practice based on organizational culture, in that identifying and appropriately reinforcing particular practices that are congruent with the organization's culture will affect team performance. For example, in Organization F, one respondent said:

"Obviously, we're more focused on the individual than we are on the team. It's about how do I win the battle in this society. How do I survive, as opposed to, you know, what it is that I need to do to benefit everybody. [The team is] carefully measured on whether we meet objectives. Every year the company sets an annual objective and this is something that I'm going to do battle with soon."

Another respondent in the same organization had the following to say:

"Our culture is driven. Our culture is such that we admire the organization. They [the team] are all [organization name]. The answer is, my job is IT. And if you want to survive a battle here, do it alone! So you're kind of forced to go out of your bounds.

The practical implication is that team reward systems must be carefully assessed to determine which

schema they reinforce. We propose that reward systems that reinforce congruence between teamwork schema and organizational culture are likely to enhance team performance; those that do not reinforce congruence between teamwork schema and organizational culture are likely to reduce team performance. Specifically in the examples above, we might expect that a reward system that includes very explicit and well publicized rewards at each level of the organization (much like the military) will result in more effective teams.

This coincides with the value-congruence argument that also exists in the organizational culture literature. The construct “person-organization fit” indicates the extent to which an individual’s values align with the organizational culture and its corresponding set of values (O’Reilly, Chatman and Caldwell, 1991). A good “fit” has been empirically demonstrated to affect important organizational outcomes such as organizational commitment, job satisfaction and turnover (O’Reilly, Chatman and Caldwell, 1991). While this construct has only been demonstrated on an individual level, it is reasonable to assume that similar issues may prevail at the team level, that is, the congruence between team-level beliefs and organizational values will have important effects on team performance.

The Interaction of National Culture and Organizational Culture.

National culture and organizational culture are likely to have direct, independent effects on teamwork schema; but beyond these direct effects, our results indicate an interaction effect. Inductive analysis of the interviews helped to explicate the specific ways in which the interaction will affect teams.

Specifically, we saw different patterns of teamwork schema *within organizations across country locations*. For example, Organization F is characterized by an aggressive and competitive organizational culture, and reflecting these characteristics, their dominant schema were the sports and military schema. However, the community schema was also evidenced in Organization F. In fact, Organization F used the community schema more frequently in the Philippines, which has a more collectivistic, community oriented national culture, than the U.S., which has a highly individualistic national culture. Thus,

Organization F appeared to have obtained congruence in terms of the interaction between national and organizational cultures. For example, one of the respondents in the Philippines stated:

"Come to think of it in our organization, even before the concept of "teamwork", or peak performance even, conceptually, Filipinos have this tradition called "bayanihan." *Bayanihan* is the Filipino practice wherein, back in the province, it used to be that, you know Filipino houses--now house is bamboo--it's easy for this house to be transferred from one place to another. I don't know if you're familiar with that tradition of, called *bayanihan*. And if one family would want to move their house from one place to another, people would usually just carry the house from one place to another."

In line with the cultural congruence argument (e.g., Newman and Nollen, 1996), our subsequent observations and interview data suggested that teams in Organization F were high performing. Based on our preliminary evidence then, we expect that team effectiveness will be higher in multinational organizations that adjust their use of organizationally dominant teamwork schema to be congruent with the national cultural tendencies in a given facility. Team effectiveness will be lower in multinational organizations that consistently use the same organizationally dominant teamwork schema across all national cultural contexts of facilities.

Figure 1 summarizes the relationships proposed in the previous paragraphs, providing a framework for sources and implications of variation in teamwork schema.

Insert Figure 1 About Here

DISCUSSION

Intercultural research on teams has demonstrated that cultural context relates to differences in team processes. Our study extends intercultural theory by specifically examining collective cognitions about teamwork and the ways in which cultural contexts influence their formation. This research represents a first step in developing a cultural contingency framework for collective cognition about teamwork. We began with a question, asking whether the meaning of teamwork varies across cultural contexts. We investigated language as an indicator of teamwork schema and conducted detailed analyses of interview transcripts. Our analyses indicated that the language team members use to describe teamwork varies

across both national cultures and organizational cultures. Furthermore, national culture and organizational culture interact to predict the prevalence of certain language themes.

We interpret our findings to suggest that the collective cognitions formed and held by team members concerning teamwork are influenced by the cultural and organizational contexts within which the teams are embedded. Given these findings, we expanded our focus and used a combination of our interviews and theory to illustrate the specific mechanisms underlying the content and impact of teamwork schema. Interview excerpts suggested that teamwork schema carry information about hierarchical relationships and size of teams. This information has implications for behavior in teams as well as for the effectiveness of managerial techniques. While we found that multiple schema exist in any given cultural setting, certain schema were more dominant. Our interview excerpts also suggested that teamwork schema include information about dominant organizational values such as aggressiveness or competitiveness, and that certain practices reinforce these schema.

Our findings are strengthened by the methods employed. Our use of in-depth interviews covering a variety of topics concerning teamwork broadened our analysis. Furthermore, we made every attempt to be sensitive to intercultural variation. Had we not conducted our analyses with the assistance of researchers from each country, our results would have represented a Western bias that we hold as North American researchers. Instead, through a careful, culturally-sensitive process, we were able to develop schema categories that are relevant across cultures and organizations.

The strengths of our study must be tempered with recognition of its limitations. Conceptually, a frequent criticism of attempts to capture the gestalt of a phenomenon as rich and full as *national culture is* that the research may be “guilty” of using or promoting stereotypes. From the perspective of cognitive psychology, applying the concept of stereotypes to our understanding of the impact of culture is indeed appropriate (Gannon et al. 1994); more recently, however, the term stereotype has been used in a

pejorative way. Adler (1991) argues persuasively that it is, in fact, legitimate to use stereotypes in cross-cultural contexts, if they are descriptive rather than evaluative, substantiated, and subject to change when new information merits it. Thus, while this study is generally supportive of the schematic approach to describing the impact of culture, clearly culturally determined schema should be used with caution. They do not pertain to every individual or even every subgroup within a society. Rather they highlight national and organizational differences in an easily understood way that provides a rich vocabulary for discussion.

Another limitation is that our sample of interviewees was relatively small and restricted to a narrow set of organizations. This is a common trade-off in qualitative research. The methods we used were appropriate given that our intent was to capture depth of understanding rather than breadth at this exploratory phase. Despite the restrictions of the method, our sample of *words* generated by the interviewees (6,661 words) was large, and thus helped to increase the robustness of schema category analyses. A related limitation is that we collected data from only four geographic areas. We did attempt to sample from diverse cultures; however, future research should test the research questions in a more extensive sample of countries using additional languages. Finally, we acknowledge that although our sample contains a diverse set of teams, we did not include an exhaustive variety of organizations, functional areas, and team types. Our sample may have limited the number and variety of schema we uncovered. Future research should include teams from organizations in other industries and with foreign-based ownership.

CONCLUSION

These limitations notwithstanding, our research makes several theoretical contributions by challenging our assumption that the meaning of teamwork is commonly held across contexts. Our findings extend theory on collective cognition, teamwork, and intercultural management of teams, and suggest that language may be a key means to understand team cognition and process in multinational contexts.

We see at least three specific ways in which our research advances theory. First, this research advances

theory concerning collective cognition in teams. The results of the interviews contribute to the development of the concept of teamwork schema. Teamwork schema are knowledge structures consisting of what each member understands about teamwork. They are developed from past experience and used to organize new information and facilitate understanding. An ongoing debate in the literature surrounds the content of schema – whether they contain perceptual or behavioral information. Our results support the notion that teamwork knowledge schema contain information about both perceptions (e.g. beliefs, judgments, opinions) and action (e.g. activities, action sequences, interactions). Furthermore, our results suggest that in our sample, multiple teamwork schema existed within most teams.

As a second contribution, this research extends the literature concerning work teams and intercultural management theory. The teams literature has been criticized for lack of attention to the cultural context within which teams are embedded. Our research directly addresses the influence of context, proposing and empirically investigating cultural phenomena (e.g. values, beliefs and shared ways of acting within societies) that act as mechanisms through which the cultural context influences teams. The results provide further strength to arguments that management research needs to expand its perspective and open up the possibility that theories developed in one cultural context may need modification when applied in other cultural contexts.

Third, this research provides evidence for variation in shared teamwork schema across cultural contexts. Given these findings, it is likely that in multinational settings individual members from different cultural backgrounds will hold a variety of schema. This finding has implications for cross-cultural management theory, in that it could be source of conflict in multicultural teams. However, the concept of teamwork schema may help to facilitate greater understanding among co-workers when they are discussed and explained. Thus, working relationships among team members are likely to improve when internal frames of reference are shared within the team. Knowledge could be shared by having teams define teamwork prior to beginning their work together, resulting in a concept map. The team could refer to the map as

they worked and modify their shared teamwork knowledge structures over time. Future research should investigate these propositions and techniques more explicitly

In terms of practice, our findings suggests that managers may need to match practices and actions with dominant schema. For example, if the dominant schema suggest that authority arrangements and competitiveness are important in teams, management practices may need to address these beliefs. On one hand, if these values will aid the team in accomplishing its goals, managers and facilitators could devise reward structures and reporting arrangements to reinforce the schema. On the other hand, if the schema carry information that may conflict with the team's goals, managers may need to develop tactics to elevate or reinforce other schema. Our results do not suggest that any given schema is "good" or "bad," simply that the content of schema are likely to vary across cultural settings, and should be considered explicitly by managers and researchers.

Due to the lack of empirical research regarding teams across cultures, leaders within multinational organizations have been forced to make educated guesses about the most appropriate methods to manage teams across their various geographic facilities. The results of this research provide insight into variation in teamwork schema that can help team members, managers and researchers identify their common knowledge as well as their cultural differences.

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TABLE 1
List of Categories and Terms Used in Frequency Analyses

Categories^a				
Military	Family	Sport	Associates	Community
alliances [2]	belong [7]	baseball [2]	among [26]	Barrio [2]
battle [2]	bonding [1]	basketball [7]	amongst [2]	Baya [2]
brigades [1]	clannish [2]	champion [9]	circle [11]	Bayan [1]
campaign [4]	compadre [3]	champions [4]	circles [7]	Bayanihan [11]
charged [1]	familial [4]	championship [1]	clannish [2]	Bonding [1]
Congress [2]	families [10]	coach [13]	clique [1]	Buddies [1]
grappling [1]	family [48]	coaches [6]	cliques [1]	Community [4]
manpower [7]	family-oriented [2]	coaching [4]	collective [27]	Fellow [4]
mobilize [1]	friend [4]	competition [10]	collectively [4]	Fraternity [2]
survival [1]	friendly [2]	dance [2]	council [7]	Friend [4]
survive [5]	friends [4]	football [6]	councils [1]	Friendly [2]
	friendship [1]	game [5]	crews [1]	Friends [4]
	socialize [3]	games [1]	entity [3]	Friendship [1]
		home run [1]	franchise [3]	Join [3]
		interplay [1]	franchises [1]	Joined [20]
		play [17]	geographic [8]	Joining [2]
		played [1]	geographical [4]	Joint [3]
		player [6]	geographically [2]	Neighborhood [3]
		players [14]	geography [13]	Neighbors [3]
		playing [2]	society [8]	Participant [3]
		plays [2]		Participants [2]
		soccer [3]		Participate [12]
				Participated [1]
				Participates [2]
				Participating [7]
				Participation [5]
				Social [5]
				Socialize [3]

^aNumbers in brackets indicate the number of times that term occurred in the text database.

TABLE 2
Sample Text Excerpts

Category	Term	Text Excerpt
Military	brigades	We have some teams here, and not only in HR, but like I said, also in manufacturing, like...Environmental and Health and Safety Commission. We have that...we have some people who look into the performance of the company concessionaire. And we have some fire brigades...and their are other projects.
	campaign	Yes, there will be competition going on. I'm about to launch the campaign.
	congress	Typically the way it works...there is what we call an advisory team, which is kind of like congress or the board of directors. We will have on this team a sales manager, a service manager, a sales rep...
	mobilize	So I guess it's time to mobilize the circle. Ask them for recognition of action plan, which includes a timetable and link the person responsible so they can have their own accounts.
Family	bonding	Actually, we [the team] have met twice already--for the orientation and second for the team building and planning workshop. That was really very effective because it was an adventure-type of seminar and it just, well, accelerated the bonding of this group.
	clannish	But, you know, we are a bit clannish. So we stick together. ...and it's very clannish, and because of that, it's also very, you know, there's a lot of peer pressure. Now, in a group in a work setting wherein...you work together and you communicate very quickly, and I think there are, you know, cultural [characteristics] that would be good for teamwork
	campadre	But if one is performing or if one is in the workplace, there is also the necessity of making sure that the <i>caguns</i> and that sort of clique are not dominating the team. That the team, the members, are more or less there because of the value that they can bring to the team. Instead of their being " <i>cagun</i> " or <i>compadre</i> ."
	Family	Well, I think we have said already Filipinos are more family oriented. They're close to each other. so working in teams, for me, I believe is much easier.
	Sports	basketball
champion		Okay, they wanted to have, three groups, and would like to have people from the different shifts to be part of that group. And they have one champion in each group, one leader of the group, responsible to the department head.
		The team champion in each of these would be a technical sales representative, somebody representing the business unit, appointed by or hand-picked by the business unit manger himself, and then consisting of a minimum of four other representatives.

TABLE 2 Continued
Text Excerpts

Category	Term	Text Excerpt
Sports	coach	That's what I'm thinking of also. There is a coach, and there are all these players, and among these players, there is somebody who is also, you know, favorite or very good one, performer.
		He knows the people that he goes to and I mean, the doctor, he goes, he comes up with his daily itinerary. So in terms of managing the task, he is self-directed. But of course he also receives certain direction and guidance in the sense of, you know, coaching, training, activity, and in terms of costs or reports that, that would have to be requested outside of the unusual group level. So, cut, um, looking at it as solely self-directed--probably not yet. But, the majority of the task would be self-generated.
	dance	They trust the team, but it all depends on the stereotype of the individuals. On the team I have two operators from each shift. We have three shifts. They have to get all their ideas from the rest of the operators. They have to dance the same way. If one dance different from the others, we have a big problem.
	football	There might be one region where the directors, you know, football -- which is rugby in France...
		Well, I mean, you use all different types of metaphors. Well, there are different teams and you use different sports, sports is mainly what gets used. There are different types of sports teams, and then you have the football...
	players	That's what, that's what I am thinking of also. There is a goal, and there are all these players, and among these players there is somebody who is also, you know, the favorite or a very good one, performer.
	fan	And maybe, too, just our culture. Just a lot of competition, a lot of stars, somebody who's supposedly has risen above or something, proven excellence. Yeah, everybody likes to be individual. Everybody has their own individual...you know, say I'm a Bulls fan, you know, a Mavericks fan. So there goes that individualistic thing again, right there!
Associates	clique	It's good but then again, if in forming the team you have some parameters by which membership or affiliation could somehow, would be like even guidelines or parameters, then the Filipino propensity to just support a <i>compadre</i> may be negated or at least minimized. But if one is performing or if one is in the workplace, there is also the necessity of making sure that...that sort of clique are not dominating the team. That the team, the members, are more or less there because of the value or the added help that they can bring to the team.
	franchise	The responsibilities, uh, which we ask each [team] to function as if they were a franchise organization. They are given as much autonomy and freedom and empowerment as we possibly can, to make decisions at the local level. And in order to make those things happen, a whole variety of things need to be in place for the team. They need to understand what's going on. They need to be trained in a lot of skills that they might not have had before--team building, interpersonal skills. They need to have joint measurement, because you have a sales division, service division. And we can't have them going off trying to do measurements that are antagonistic to one another.

TABLE 2 Continued
Text Excerpts

Category	Term	Text Excerpt
Associates	social	Already, we're a type of society that is very hierarchical. You either have to get another level higher, or by obtaining certain diplomas to move from the level where you start to move to another level. So, up until today, everything has been determined this way. Ok, it's a way of progressing up the scale according to competency, but not, nothing that would have to do with a group. Right, you have to have some system of reform, you can't have an autonomous group when the system has always been established on the premise of you occupy a certain level, certain position, and you obtain social mobility according to these ways. And at the same time, it's something that has nothing to do with the system that's always been around. But inside. The social mobility, you're not rewarded for lateral moves. Only for the vertical moves. Obviously your salary doesn't change if you work on a team, this way. Only if you progress that way.
Community	baya	[What would come to their mind? If you were in a work team?] Help. Something like, I need your help. OK, I'd like to contribute to this. <i>Bayan, Baya</i> means hero actually. <i>Baya</i> means hero. <i>Bayanihan</i> is the verb, is helping, helping. I want for example, I want to uh, to prepare for the....
	bayanihan	Uh, the Filipino culture is very, there is this which we call " <i>bayanihan</i> ," means working together. Like there is, you know a small house, and if you need to transfer it. They're small, the huts in the provinces.
		<i>Bayanihan</i> . Yeah, <i>bayanihan</i> . <i>Bayanihan</i> is like, in the provinces we would have such houses, so they would carry it on their shoulder of one whole group. If one person fell, then the house would fall, you know.
		<i>Bayanihan</i> , this is more of helping, OK, help, cooperation. That is, cooperation. Teamwork. That is our Tagalog term for teamwork.
	fraternity	And another negative, um about [the tendency for grouping together as <i>bracada</i>] is that when you're already very close, you tend, you become introverts and you become a fraternity, and you don't warm to involve other departments or other people.
	neighborhood	Being a hero to your neighbors. I think that's one [a metaphor]. And then it's more negative than positive. People in our culture, also who tend to prefer to belong to...you can call it a " <i>gun</i> " with all its connotations of, what, evil, or you can call it an association. Neighborhood association. But you can also call it, "he's my <i>compadre</i> ", so he can't be wrong, even if he is my " <i>cagun</i> ", so right or wrong, he's, I feel this is more bad than good.
	social	We reward the person, the individual. But we appreciate in a global appraisal we appreciate the behaviors of the person and the social behavior. For us, social behavior is very, very important.

TABLE 3
Results of Multivariate Analysis of Variance:
Wilks' L, F-Test Approximations, Degrees of Freedom and Multivariate h^2
for Country, Organization and Country x Organization

Effect	Wilks' L	F(L)	df(L)	h^2	Univariate F-tests [†]
Country	.67	2.52**	15	.33	
Sport					1.88
Military					.99
Family					.83
Community					3.69**
Associates					2.68*
Organization	.51	2.54***	25	.49	
Sport					3.27**
Military					2.58*
Family					2.42*
Community					.43
Associates					6.28***
Country x Organization	.45	1.88***	40	.55	
Sport					1.53
Military					2.25*
Family					.98
Community					2.00*
Associates					3.09**

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

[†]df = 3 for country; df = 5 for organization; for interaction tests of between subjects effects df = 8

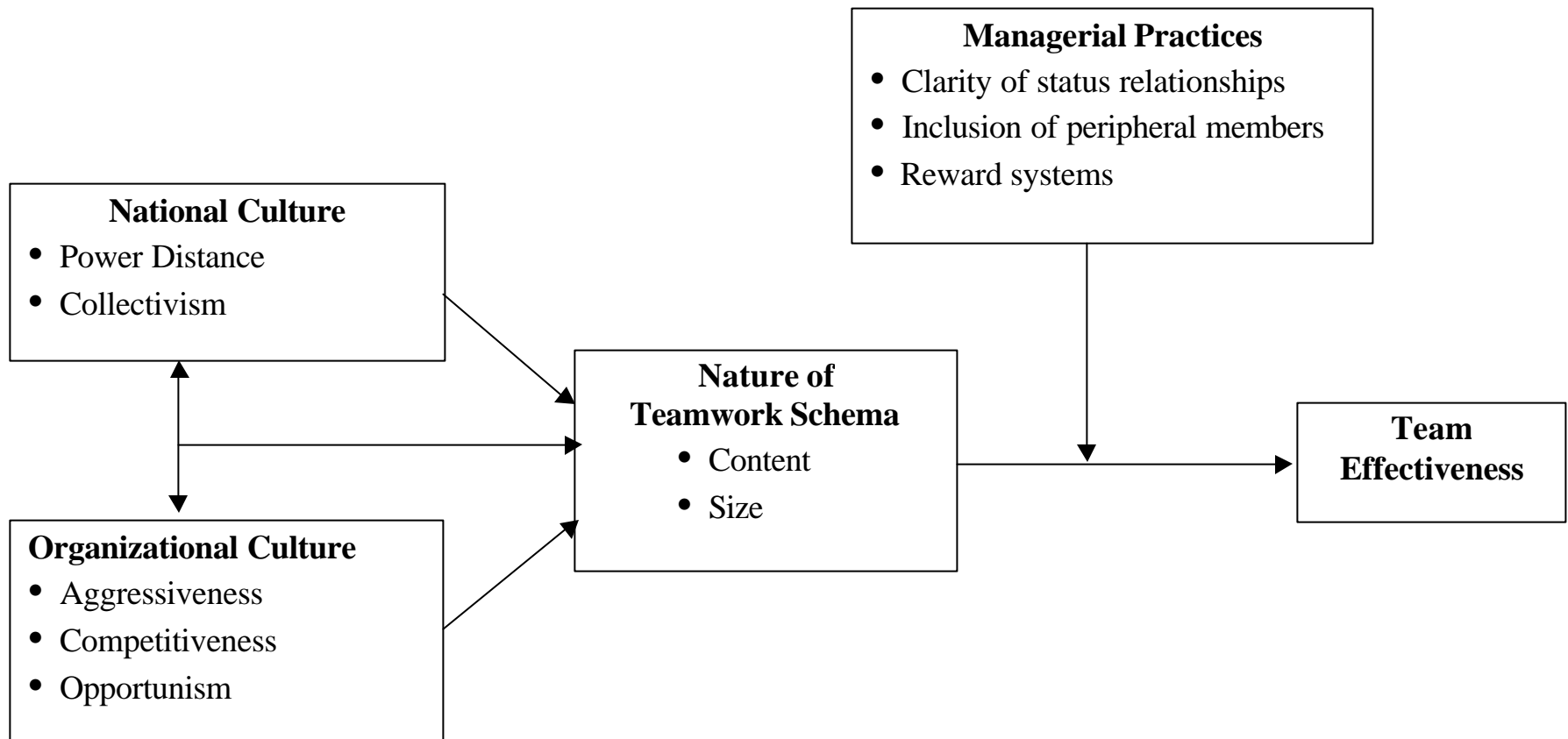
TABLE 4
Mean Frequency of Occurrence of Categories by Organization and Country

Category	Organization ^a					
	A	B	C	D	E	F
Sport						
Puerto Rico	.00	.50	.00	2.33	NA	NA
Philippines	1.50	NA	.33	1.33	.75	1.33
France	.00	.00	NA	NA	3.25	2.33
U.S.	.64	NA	1.06	.86	NA	2.44
Military						
Puerto Rico	.00	.50	.00	1.00	NA	NA
Philippines	.13	NA	.17	.33	.25	1.33
France	.25	.00	NA	NA	.00	.00
U.S.	.27	NA	.12	.29	NA	.67
Family						
Puerto Rico	.00	2.50	.33	.33	NA	NA
Philippines	.50	NA	1.5	1.33	.75	3.67
France	.00	1.50	NA	NA	1.75	.50
U.S.	.18	NA	.76	.57	NA	1.33
Community						
Puerto Rico	.14	.50	.56	.67	NA	NA
Philippines	1.13	NA	2.33	3.0	.50	4.33
France	.00	.50	NA	NA	1.75	.83
U.S.	1.09	NA	1.23	.29	NA	.44
Associates						
Puerto Rico	.29	.75	.11	.00	NA	NA
Philippines	.13	NA	1.0	1.33	3.50	1.67
France	1.50	4.50	NA	NA	1.25	1.33
U.S.	.91	NA	.53	1.14	NA	4.56

^aTotal number of interviewees:

- Org. A = 30
- Org. B = 6
- Org. C = 32
- Org. D = 13
- Org. E = 8
- Org. F = 18

FIGURE 1
Proposed Model



APPENDIX A

Interview Protocol

- 1.] Could you tell us a little about what you do and the teams you work with?
- 2.] Who is on the teams? How are these members selected? How are responsibilities divided?
- 3.] What is the function of the teams [what outputs do they provide]?
- 4.] Who is the team's "customer" [internal or external]?
- 5.] Who receives the teams' work [who is directly downstream in the process]?
- 6.] How is performance monitored and rewarded?
- 7.] What kind of feedback do teams receive about performance?
- 8.] How do you know when you have done a good job?
- 9.] Do you believe the teams are effective? Why or why not?
- 10.] Do the teams have leaders? What are the responsibilities of the leader?
- 11.] Who does the team report to? Does it interact with other teams?
- 12.] Would the teams benefit from more direction? Who should provide it? In what format?
- 13.] What are the key factors that contribute to and/or inhibit the success of the teams?
- 14.] How are practices shared in this organization?
- 15.] To what extent does headquarters dictate practices?
- 16.] Is individual achievement or collective achievement more important in this organization?
- 17.] Is individual achievement or collective achievement more important in this country?
- 18.] What facets of the culture here impact teams, either positively or negatively?
- 19.] What metaphors [or mental images] do people use for teams in this country?
- 20.] Do you have anything else you would like to add?