Cross-National Comparison of Team Competency Values

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The current study examined cultural differences in beliefs about the competencies required for effective team functioning. Participants (n = 163) with professional experience from four nations completed a web-based survey about team competencies. Overall, the results indicated that notions of competent team behavior rooted in Western scholarship are valued across a diverse set of countries. Surprisingly, these differences held even for team-focused competencies that would appear to run counter to Western independence and individualism, such as putting team goals before personal goals. Implications are discussed.

Cultural differences in group decision making, and team functioning more generally, are increasingly recognized as essential areas of investigation (Earley & Gibson, 2002; Peterson, Miranda, Smith, & Haskell, 2003). This research trend largely mirrors corporate and government trends toward increasing reliance on multinational and multicultural teams to handle all manner of tasks, such as a multinational marketing team responsible for developing products for multiple-country markets or a team of coalition planners developing options for coordinating humanitarian assistance in response to a natural disaster.

Multinational decision making teams are frequently assembled because of the expected benefits associated with having a variety of perspectives and skills that can enhance creativity and lead to a broader array of solutions than would be possible in a culturally homogenous team. Yet, this benefit is not always realized. In many cases, the decision making and ultimate performance of the team falls far below expectations. We refer to this state of affairs as the "cultural diversity paradox."

One possible resolution of the cultural diversity paradox draws on considerations of mental models, particularly the kinds of mental models that affect performance of decision making teams. In research on group decision making, heterogeneity in task related mental models has been associated with improved decision quality due to an increased variety of perspectives and world views that can be brought to bear on the problem. On the other hand, research on "teamwork mental models" and "shared schemata" has tended to find that greater commonalities in mental models are associated with improved team performance (e.g., Rentsch & Klimoski, 2001). A team whose members possess discrepant mental models concerning the nature of teamwork itself is likely to suffer process losses.

This view of shared teamwork mental models is closely related to the notion of a "hybrid culture" (Earley and Mosakowski, 2000). A hybrid culture is a shared and emergent culture that occurs when highly diverse teams develop and enact a new set of patterns, shared meanings, norms for operations, and expectations about team processes. The assumption is that members of a newly-formed multinational team determine their own set of patterns and processes for accomplishing the work within the specific context in which they are working. The newly created "hybrid" culture serves as a basis for facilitating team member interaction and communication that should lead to improved collaborative decision making performance.

The development of a hybrid culture depends, at least in part, on team members resolving discrepancies in their team process mental models. A first step towards promoting the development of hybrid cultures is to understand what those discrepancies might be. The current article examines cultural differences and cultural commonalities in beliefs about "team competencies," as one aspect of process mental models. Team competencies refer to the requisite

knowledge, skills, and attitudes of team members that enable effective performance of the team (Cannon-Bowers & Salas, 1997). Based on an extensive review of the literature on teamwork, Salas and colleagues have proposed that there are five core team competencies required for high performance (Salas, Sims, & Burke, 2005). These competencies include team leadership, mutual performance monitoring, backup behavior, adaptability, and team orientation. Taken together, Salas refers to these as the "Big Five" of teamwork. Salas, Sims, and Burke (2005) also suggest universality in the applicability of the Big Five. For example, they propose that the focal competencies pertain regardless of the task the team is to perform, though they do acknowledge that specific competencies may manifest differently depending on task demands. The possible universality of team competencies in terms of cultural groups was left as an open question.

Recent research has suggested that team competencies should not be expected to be universal across cultures (Klein & McHugh, 2005). The core argument is that researchers' team competency taxonomies are based on studies conducted in Western and Western European cultures. Because these taxonomies do not incorporate research from non-Western cultures, they do not generalize to cultures where members exhibit distinct behavioral, social, and cognitive patterns. Klein and McHugh (2005) argued on these grounds that the Big Five competencies do conflict with the values associated with particular cultural backgrounds.

On the other hand, trends toward greater use of multinational teams also imply some degree of evolution in the ways that professionals from participating nations think about what it means to be an effective team. In step with globalization and the continuing rise of multinational corporations, business education has contributed to the proliferation of Western conceptions of management and organizational behavior throughout the world. For example, 34% of the MBA students at the top five business schools are international students (Global MBA, n.d.). Also, management scholarship and education as practiced in non-Western countries are also strongly influenced by Western ideas. Furthermore, the diffusion of Western management scholarship very likely includes many of the ideas on what constitutes competent team practices as are captured in Salas, et al.'s Big Five. If cultural transmission and change in beliefs about team competencies are indeed happening in this way, then we would expect a convergence of beliefs pertaining to this specific domain of knowledge, irrespective of cultural differences in other kinds of knowledge. The aim of the present study was to provide initial evidence on the questions of whether beliefs about team competencies differ markedly, or whether there is some level of convergence across cultures for this particular kind of knowledge.

METHOD

A total of 163 business professionals (89 males and 74 females) completed a web-based survey designed to elicit values related to team competencies. Participants were recruited from the following nations: India (N = 41), South Korea (N = 40), Turkey (N = 42), and the U.S. (N = 40). We recruited individuals from India, S. Korea, and Turkey to ensure that we sampled a wide span of global cultural groups. These countries were selected because they provide a spread of rankings on Hofstede's (2001) dimensions of Power Distance, Uncertainty Avoidance, and Individualism/Collectivism, as shown in Table 1.

	India rank	**S. Korea** rank	**Turkey** rank	**U.S.** rank
Power Distance	10-11	27-28	18-19	38
Uncertainty Avoidance	45	16-17	16-17	43
Individualism/ Collectivism	21	43	28	1

Table 1. Ranking on general dimensions

A set of items was developed to assess beliefs about teamwork competencies for each of these cultural groups. The items were constructed according to the following five categories: decision processes and situation assessment, adaptability,

performance monitoring, back-up behaviors, and motivation. Participants read statements about teamwork, such as "To make a decision, the team discusses and debates different ideas and votes to make the final decision." For each item, participants considered whether, "*This is an example of good teamwork.*" Participants then rated their level of agreement with the item on a 7-point Likert-type scale anchored at Strongly Disagree (1) and Strongly Agree (7).

A principle components factor analysis with varimax rotation was conducted. A four-factor solution resulted on the basis of the following criteria: 1) the Eigenvalue of all four factors was greater than one, and 2) the items in the first four factors were descriptive of a single construct.

The four factors were then named to identify the construct they represented, and these constructs are described below:

Open Decision Process. The five items in Factor 1 reflect a decision-making process that involves participation of all team members, such as through discussion, debate, and/or voting.

Team Orientation. The four items in Factor 2 reflect a consideration for the team's goals, in contrast to the goals of individual team members. The items for this factor were reverse scored.

Leadership. The three items in Factor 3 reflect the leader's role in directing and coordinating the activities of other members.

Team Support. The six items in Factor 4 reflect the ability of team members to shift workload and otherwise adjust to the situational demands of the team.

RESULTS

ANOVA was used to analyze the data in terms of mean differences (see Table 2). For the Team Orientation subscale, U. S. participants reported significantly higher scores than participants in all other countries. In addition, Indian participants reported significantly lower scores than participants in S. Korea and Turkey. Analyses also revealed significant national differences for the Team Support subscale. In particular, participants in India and the U.S. reported significantly higher scores than Korean and Turkish participants. However, the teamwork competencies of open decision process and leadership did not differ significantly across cultures.

	India	S. Korea	Turkey	U.S.
Open Decision Process	5.53	5.30	5.32	5.35
Team Orientation	4.30	4.84	5.16	5.98
Leadership	5.59	5.27	5.25	5.47
Team Support	5.12	4.47	4.70	5.44

Table 2. Means on team competence dimensions

Standard ANOVAs are limited in that they are only able to detect mean differences. When no differences are found, it is unclear as to whether the countries are actually similar or whether the within-country variance is too high to detect differences for the given sample size. Hence, additional analyses were conducted using Cultural Consensus Theory (CCT). CCT is a collection of formal statistical models designed to assess concordance in knowledge and beliefs among a set of respondents. When a cultural consensus is found, it provides the consensual responses that indicate culturally shared knowledge and estimates of the strength of consensus for those responses. Individuals will also vary in the extent to which their responses agree with the consensus, and that variation is captured explicitly for each individual as "cultural competence." Technically, the consensus model can be thought of as a factor analysis with the roles of the respondents and items interchanged. In sum, CCT allows one to determine whether the data fit a shared cultural model, and provides measures of individual fit to that cultural model (e.g. Ross & Medin, 2005).

The conventions for determining a cultural consensus are:

1. ratio of the first eigenvalue to the second is at least 3:1,

2. first eigenvalue accounts for a large portion of the variance, and
3. all individual first factor scores are positive

Furthermore, if a cultural consensus exists, the following can be computed:

1. Factor loadings provide estimates of each respondent's "*cultural competence*"
2. Cultural competence scores provide weights for estimating the "*culturally correct*" response to each item
3. Set of culturally correct responses define the *cultural model*

For the survey data, CCT analyses were first performed to determine whether a consensus existed among the respondents from all countries. The ratio between the first and second eigenvalues of 6.07 was promising, but many participants had negative first factor scores. Hence, a consensus model was not found across all groups. As a next step, CCT analyses were run separately for each country. The results are displayed in Table 3.

	India	S. Korea	Turkey	U.S.
1st Eigenvalue	9.9	14.6	14.1	21.0
2nd Eigenvalue	3.7	3.2	3.4	2.8
1st/2nd Ratio	2.7	4.5	4.2	7.6
% Variance by 1st Eigenvalue	24.7	40.0	36.3	49.3
Mean Cultural Competence	NA	.61	.57	.66

Table 3. Means on team competence dimensions

To summarize Table 3, a cultural consensus existed for beliefs about team competencies in the U. S., S. Korea, and Turkey. However, no cultural consensus was found for India. For the U. S., S. Korea, and Turkey, the overall average cultural competence was .62, and that did not differ significantly across the three countries. However, a follow-up analysis indicated that cultural competency scores were correlated with age ($r = .22$, $p = .02$). Older participants tended to have higher competency scores. Finally, a single cultural model fit the data for these three countries, reflecting beliefs from western teamwork scholarship. Specifically, according to the cultural model for the three countries:

- Team members as well as the leader should be included in the decision-making process
- The decision-making process should include open discussion and evaluation of ideas
- Adaptation is necessary at times. Both the team leader and team members are responsible for indicating when replanning should occur
- Team members should be more concerned with the collective welfare of the group than with their own individual interests
- It should be the role of both the leader and the team members to monitor performance and identify potential problems

DISCUSSION

The study reported in this article provides some evidence that beliefs about team competencies are shared across a diverse set of countries. There was, however, an overall tendency for U.S. respondents to believe more about the importance of team orientation and team support than respondents from the three non-Western cultures.

One theoretical implication for the current work has to do with the relation between domain-general values for social-interaction patterns (e.g., independence/interdependence), and values that apply to the specific domain of team interactions. One possibility is that a direct mapping exists from the general to the specific, so that anticipation of cultural differences in specific situational contexts can be reasonably performed using the domain-general values. The current results for team orientation and team support provide striking evidence against the validity of the direct mapping approach. Specifically, one might suspect that individuals from interdependent cultures would be more inclined to value and exhibit a team

orientation than those from independent cultures. However, the data in the current study indicate the opposite. The most independent participants (those from the U.S.) value team orientation and team support behaviors more than the more interdependent members of non-Western countries. Though puzzling, this finding is consistent with recent work investigating differences in team-related behaviors across cultures (McHugh et al., in press). Interviews with participants from India and China revealed an interesting tension between team orientation and a sense of individual rivalry.

Much fruitful psychological research has been conducted with the intent to characterize cultural differences in terms of a small number of dimensions. This approach has obvious appeal, since it promises that a little information can yield a wide range of inferences about the behavior of people from other cultures. Reducing the complexity of cultural knowledge in this way is attractive, but the general predictive value is not apparent and may be quite limited. The current findings suggest that aspects of mental representations pertaining to the specific application domain of interest should be assessed instead.

The current study has also revealed that a degree of cross-national consensus appears to be forming regarding what counts as good teamwork. Respondents in three diverse countries expressed beliefs about team competencies in a general direction that is consistent with Western scholarship on team functioning. It is likely that national differences do exist in more fine-grained characteristics of team competency beliefs, as well as in other important aspects of mental models associated with the processes of decision making teams. Further research is needed to measure and model such cultural differences.

REFERENCES

Cannon-Bowers, J. A., & Salas, E. (1997). Teamwork competencies: The interaction of team member knowledge, skills, and attitudes. In H. F. O'Neil (Ed.), *Workforce readiness: Competencies and assessment* (pp. 151-174). Mahwah, NJ: Lawrence Erlbaum Associates.

Earley, P. C., & Gibson, C. B. (2002). *Multinational work teams: A new perspective*. New Jersey: Lawrence Erlbaum Associates.

Earley, P.C. and Mosakowski, E. (2000). Creating hybrid team cultures: An empirical test of transnational team functioning. *Academy of Management Journal, 43*, 26-49.

Hofstede, G. (2001). *Culture's consequences* (2 ed.). Thousand Oaks, CA: Sage.

Klein, H. A., & McHugh, A. P. (2005). National differences in teamwork. In W. B. Rouse & K. R. Boff (Eds.), *Organizational simulation* (229-252). New York: Wiley.

McHugh, A. P., Smith, J., & Sieck, W. R. (in press). Cultural variations in mental models of collaborative decision making. To appear in J.-M. Schraagen, L. Militello, T. Ormerod, & R. Lipshitz (Eds.), *Naturalistic Decision Making and Macrocognition*.

Peterson, M. F., Miranda, S. M., Smith, P. B., & Haskell, V. M. (2003). The sociocultural contexts of decision making in organizations. In S. L. Schneider & J. Shanteau (Eds.), *Emerging Perspectives on Judgment and Decision Research* (pp. 512-555). Cambridge: Cambridge University Press.

Rentsch, J. R., & Klimoski, R. (2001). Why do 'great minds' think alike? Antecedents of team member schema agreement. *Journal of Organizational Behavior*, *22*, 107-120.

Ross, N., & Medin, D. (2005). Ethnography and experiments: Cultural models and expertise effects elicited with experimental research techniques. *Field Methods*, 17, 131-149.

Salas, E., Sims, D. E., & Burke, C. S. (2005). Is there a "Big Five" in teamwork? *Small Group Research, 36*(5), 555-599.