The Effects of Task Characteristics on the Performance of Multicultural Teams: Connecting Economic Theory and Empirical Evidence

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Abstract

Based on a model from personnel economics, we propose two hypotheses: (H1) Multicultural teams will outperform monocultural teams if the task requires multicultural skills, and (H2) Monocultural teams will outperform multicultural teams if the task does not require any culture-specific skills. We tested these hypotheses using six empirical studies by authors who are invested in the area of multicultural team performance evaluation (Earley & Mosakowski, 2000; Elron, 1997; McLeod, Lobel, & Cox, 1996; Thomas, 1999; Watson, Johnson, & Merritt, 1998; Watson, Kumar, & Michaelsen; 1993). Surprisingly, neither of the studies investigated the relationship between the nature of the task – whether monocultural or multicultural – and the performance of a team – whether monocultural or multicultural. We found that three studies support H1 (Elron, 1997; McLeod et al., 1996; Watson et al., 1998), and three studies support H2 (Thomas, 1999; Watson et al., 1993; Watson et al., 1998). The study by Earley and Mosakowski (2000) does not seem to relate to our hypotheses. We end with implications for existing theory and future research.

Do Multicultural Teams Increase Firm Performance?

Considerable research has been done in order to analyze diversity with respect to gender (Ely, 1994; Tsui, Egan, & O'Reilly, 1992;), age (Wiersema & Bird, 1993; Zenger & Lawrence, 1989), educational background (Jackson et al., 1991; Smith et al., 1994), and organizational tenure (Ancona & Caldwell, 1992; Tsui & O'Reilly, 1989). Milliken and Martins (1996) provided an overview of a wide range of studies related to the different types of diversity. However, little attention has been paid to isolating the effects of multiculturalism in teams, with some exceptions that will be discussed in this paper. This is even more surprising considering that 'having a multicultural team' has probably become the most used buzzword in international management in the age of globalization.

The need for culturally diverse teams in multinational corporations (MNCs) should be obvious: A MNC needs employees from different countries to conduct business with and in other cultures and countries. Multicultural teams can be useful in several areas of a company: To manage an entry into another country, to arrange a joint venture, to develop products for foreign markets, to advertise worldwide using different, localized campaigns, etc. Thus, employing multicultural staff and forming multicultural teams seems to be very popular these days. Some managers seem to expect that cultural diversity by itself increases profitability.

However, as several studies reveal, diversity is no guarantee for an increased firm performance. Richard (2000) showed that there exists no empirical support for the business world belief that cultural or racial diversity will be positively related to firm performance. Gómez-Mejia and Palich (1997) also found that the hypothesis that culturally related international diversification would have a positive impact on firm performance cannot be empirically supported. Thus, the mere fact that a team consists of people from diverse cultural backgrounds does not seem to be a sufficient condition for increases in firm performance. It seems to be crucial to analyze and understand exactly *how* this diversity is managed. From the perspective of personnel economics, managing culturally diverse teams includes two basic components: (A) How to compose a team, and (B) how to motivate the team members to work together efficiently. Though these insights might sound trivial, in depth theoretical analysis as well as empirical studies will show that they are not. This paper focuses on the former component (A).

The majority of the literature on multicultural teams seems to concentrate on their benefits. However, there are also costs of multiculturalism. What comes to mind immediately are the costs related to ambiguity and misunderstandings in teams. Thus, we will expect higher coordination costs in multicultural teams. However, economic theory suggests that agency costs are another issue that could raise the costs of multicultural teamwork. Agency costs are costs that result form asymmetric information among coworkers with diverging interests. Based on principal agent theory, we can explain the risks resulting from informational asymmetries with respect to cultural peculiarities: People know something about their own culture that others from diverging cultures do not know. Ambiguities and misunderstandings due to cultural differences can be the result but also opportunistic behavior by individuals just pretending there is a cultural peculiarity. If members of a multicultural team face such asymmetric cultural information, conflicts can arise that hinder the team to work together efficiently. This is even more important if the individuals do not share the same personal goals. Hence, a reduction of the risks resulting from asymmetric cultural information must be achieved as, for example, through cultural training or co-aligning incentives. Multiculturalism in teams can cause both increased coordination and agency costs. These costs must be outweighed by sufficient increases in performance compared to monocultural teams.

We will then proceed by connecting economic theory with empirical evidence on how to compose a team – either multicultural or monocultural – depending on task characteristics. Component (A) will be condensed into two hypotheses: (H1) Multicultural teams outperform monocultural teams if the task requires culture-specific know-how, and (H2) monocultural teams outperform multicultural teams if the task does not require multicultural skills. Three studies (Elron, 1997; McLeod, Lobel, & Cox, 1996; Watson, Johnson, & Merritt, 1998) supported hypothesis 1. Three studies (Thomas 1999; Watson, Kumar, & Michaelsen,

1993; Watson, Johnson, & Merritt, 1998) supported hypothesis 2. The study by Earley and Mosakowski (2000) did not seem to relate to our hypotheses. It posed some challenges for further research.

Risks of Asymmetric Cultural Information

To avoid any misinterpretation of what a multicultural and what a monocultural team is, the terms are to be defined: *All members of a monocultural team come from the same culture. The members of a multicultural team come from different cultures, no matter how many team members come from each culture* r*epresented.* Others, for example Earley and Mosakowski (2000), defined these terms differently.

Using multicultural teams does not only bring along benefits but also costs. The costs come in the form of higher coordination costs. These are due to the fact that people coming from different cultures might, in more than just the literal sense, not be speaking the same language. Thus, misunderstandings and failures to coordinate activities in the team can result, even though individuals might share the same goal. Even if there is no conflict of interests between team members, coordination costs and the probability of coordination errors might be higher compared to monocultural teams. This is the problem of managing multicultural teams that basically all of the literature on multicultural teamwork dwell upon.

From an economic perspective, however, there is a following additional, subtler problem: The ambiguities caused by multiculturalism give rise to additional agency problems as the result of asymmetric information with respect to culture. Agency theory has greatly benefited from recent developments of game theory since game theory provides the mathematical tools to model interactive transaction processes over any periods of time in an analytically rigid manner (Rasmusen, 2001). Asymmetric information is likely to be present wherever division of labor or delegation of tasks occurs, i.e. one knows something the other does not know. The agent (A) is the one who knows something that the principal (P) does not know. Moreover, A acts on P's behalf while both continue to pursue their own personal goals that are not assumed to be co-aligned by nature (Akerlof, 1970). The concept of asymmetric information can be applied to multicultural teams. However, the connection between asymmetric information and cultural differences has not yet been drawn in the literature. In this paper, we will interpret distorted expectations about team members' cultures as an asymmetric information problem that needs to be solved (cf. Figure 1). This analytical approach will be explored in greater depth.

Most of the difficulties arising in multicultural teams result from conflicts, which are due to the cultural peculiarities of the team members. The risk of misunderstandings occurs because of distorted expectations about each other's behavior. When people form their expectations about a foreign culture they might face an asymmetric information problem: One knows more about his or her own culture than about other cultures. These differences in perceptions of cultures can either be known or unknown. They might be known if the team members had prior experience with one or another culture represented in the team. People can also be aware that there might be some asymmetric cultural information without knowing exactly what piece of information is missing.

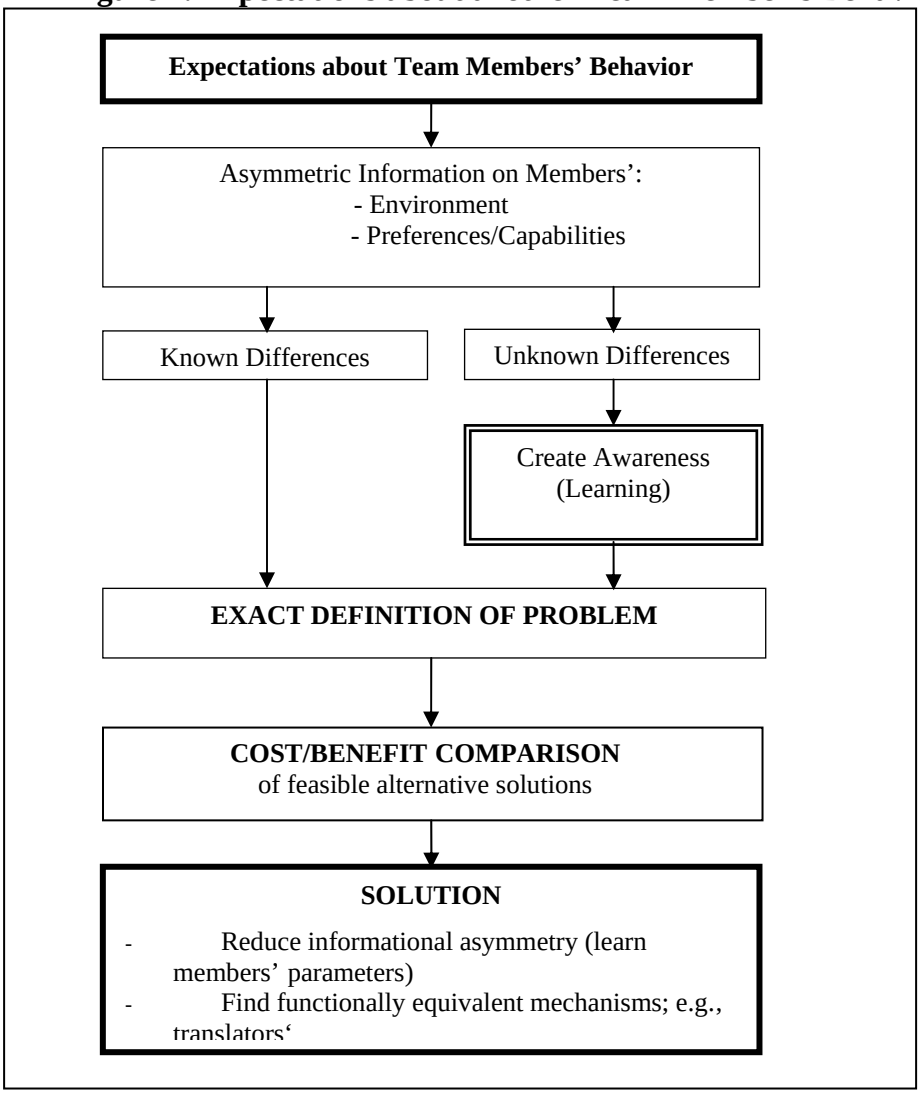
However, if the differences are unknown and unrecognized, team members must first become aware of them in order to reduce the risk of misunderstandings. When people do not even know about their knowledge-gaps, we can talk about "ignorant ignorance" as opposed to

"ignorance," where people already know that there is something they do not know. Ignorant ignorance is most likely to occur in teams whose members' cultures are rather similar. In this case, people might neglect even the possibility of cultural differences because they do not realize that differences might exist. "The deciding factor … is whether one notices the cultural category of the other" (Larkey, 1996, p. 466). Thus, cultural awareness is required in order to be able to exactly define the problem, find the least cost solution to the problem, and thereby reduce the problems of asymmetric information. To illustrate this process of problem solving, see Figure 1.

Asymmetric cultural information can occur *before* (adverse selection) or *after* (moral hazard) a team is formed. However, the process of reducing the risks of asymmetric cultural information requires time. It will result in cost. Differences will be unavoidable – they might be desired – but must be sufficiently understood in order to have everyone in a multicultural team work together effectively. A monocultural team might also experience problems of asymmetric information in the way that one knows something the other does not know, such as what skills a team member really has, but the specific cultural nature of asymmetric information is unique to a multicultural setting.

Most of the problems multicultural teams face are due to distorted expectations. The different perceptions, different priorities in agenda setting, the different notions of assigning roles and responsibilities, and the different ideas of decision-making pose challenges to intercultural communication. However, they can also be interpreted as moral hazard problems. In this case, people might pretend not to understand. In fact, they might be well aware of the relevant information but act opportunistically in their own interest. In reality, it might be hard to distinguish real and fake misunderstandings. To readers less familiar with economic agency theory, this might, at first glance, sound far fetched. Economic theory and reality, however, suggest that this possibility should not be ruled out from organizational reasoning in order to make sure that the organizational setting of a firm does not invite such behavior. To give an example: If an employer offered an employee to take days off at full pay whenever an he or she has a religious holiday, it can be predicted that the number of presumably religious holidays celebrated by the employees of that firm will explode. This would be a crude example of moral hazard behavior.

Figure 1: Expectations about another Team Member‘s Behavior



Effects of Task Characteristics on Team Performance

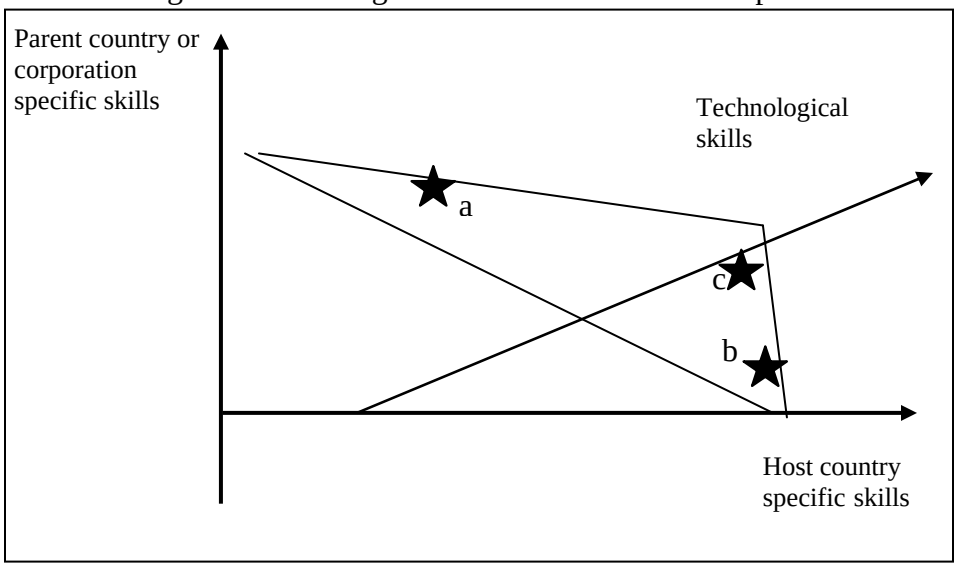
One cannot generally argue that using multicultural teams is to a firm's benefit or to a firm's disadvantage. Yet, some international management books (Adler, 1997) analyze "general" advantages and disadvantages of multicultural teams. This approach seems to be too

simple since the success of multicultural teams depends on a number of variables that may vary from case to case. Maybe the "right" question has not yet been asked. It is probably not: Are multicultural teams beneficial? But rather: *Under which conditions* will multicultural team be beneficial for a company?

Economic Theory: Proposing Two Hypotheses

Jobs can require three basic types of skills. Skills can be of a technological nature, which are independent of the place of application. However, skills can also be specific with reference to a corporation's home country, a subsidiary's host country, or a foreign market. MNCs tend to staff their foreign subsidiaries with a combination of expatriates from the parent company and locals. Often, there are also expatriates from third countries (Elron, 1997, p. 396). Assuming that there are no wage differences between locations, the rationale of such a mix is that the expatriates from the parent corporation have specific knowledge about, for instant, the internal structure of the firm, and they know its people and history. The locals are supposed to have special knowledge about the host country's market conditions and people. They are in a good position to, for instant, design specific strategies for foreign markets. Third country expatriates are usually experts in country-independent fields, for example, production tasks. This logic of staffing foreign subsidiaries according to the know-how required is illustrated in Figure 2. Assume

Figure 2: Matching Task Characteristics with Input Skills



the triangle describes the skills required by the task at stake. In order to provide this set of skills, the multicultural team assigned this task should include individuals with skills a, b, and c. This way, the team should be able to cover the set of skills required. Points a and b describe

individuals with mainly country-specific skills whereas c describes country-neutral, technological skills.

MNCs base rational staffing decisions on which skills are required. Why do corporations choose this strategy? Obviously, they decide on this strategy because they expect to work more profitably with a mixed workforce than with a monocultural one. Multicultural teams will ceteris paribus outperform monocultural teams as soon as multicultural skills are required, i.e. the team members of the multicultural team are *able* to fulfill the task better than the monocultural team. If the task does not require culture-specific skills, multicultural teams are likely to experience high levels of asymmetric cultural information that will reduce the teams' potential compared to monocultural teams. The primary reason for firms to use multicultural teams is the value added by combining disjoint and relevant skills of two or more team members (Lazear, 1998, p. 5). Multicultural teams tend to be more costly to the firm than monocultural teams because of the asymmetric cultural information problems elaborated above. The cost of reducing the risk of asymmetric cultural information manifests, for example, in a wage premium for those individuals who studied other cultures (Lazear, 1998, p. 6). They could also come in the shape of higher expenditures on management, which has spend extra time and effort to solve additional coordination and mediation problems. Hence, if the task does not require multicultural or foreign-culture-specific inputs, a monocultural team should be used. The team members share similar expectations about each member's behavior (see Figure 1) that minimize asymmetric cultural information, reduce the conflict potential and, thus, transaction cost. In contrast, if the task does require skills from different cultures, we would expect to find multicultural teams. These insights from economic reasoning should be susceptible to empirical testing. Below, we will use existing empirical studies to test the following two hypotheses:

H1: *Multicultural teams will outperform monocultural teams if the task requires multicultural skills.*

H2: *Monocultural teams will outperform multicultural teams if the task does not require any culture-specific skills.*

Empirical Evidence: Testing the Hypotheses

Several studies analyzed whether multicultural teams outperform monocultural teams, but the results are ambiguous. This ambiguity, however, might be caused by the fact that their research question was not sufficiently specific with respect to our hypotheses. In the following subsections we will analyze if the results of those studies can be used to support one or both of our hypotheses.

McLeod, Lobel, and Cox (1996, p. 248) argued in favor of hypothesis 1: "we might expect that groups heterogeneous with respect to ethnic background of the members would be especially effective at tasks … which expressly draw on the diversity of ethnic perspectives." They did an experimental investigation of the difference in performance on a brainstorming task between Anglo-American teams and teams whose members were Anglo-, Asian-, African, and Hispanic-Americans. A total of 135 undergraduates and graduates from a midwestern university in the U.S. took part in this study. The students were assigned to one of 18 ethnically diverse or 16 all-Anglo teams. The brainstorming task was called "The Tourist Problem" which required the teams to generate as many ideas as possible within 15 minutes to get more tourists to visit the U.S. This task clearly requires information from different

cultures. Team members from the U.S. will know best what to sell (Figure 2, skill a) while team members from the target countries might know better how to sell it in their home countries (skill b). The ideas of the ethnically diverse teams were "…judged to be of higher quality" (McLeod et al., 1996, p. 248) than those of the all-Anglo teams. Thus, this study supports our hypothesis 1 in that "diverse groups will have a performance advantage over homogeneous groups on a creativity task requiring knowledge of different cultures" (McLeod et al., 1996, p. 255). Multicultural know-how seems to be a reason why ethnically diverse groups performed better: The different perspectives of culturally diverse members enhanced their overall team skills so that better ideas could be generated. Asymmetric information with respect to culture could have been present. However, if they were, the fact that the task required multicultural know-how must have outweighed any possible conflicts that might have occurred due to asymmetric cultural information.

Watson, Kumar, and Michaelsen (1993) studied the interaction process and performance of monocultural and multicultural teams for 17 weeks. A total of 173 upper-level undergraduates at a large university in the southwestern U.S. participated in the study. Each of the 36 work groups, either monocultural or multicultural, had to analyze four "real-life company" case studies. The case studies were given to the students in weeks 5, 9, 13, and 17 (periods 1 to 4). Four tasks had to be carried out for each case study: (1) To analyze the situations described in the case from a variety of perspectives, (2) to identify problems in the case study, (3) to list alternatives that might help solving the problems identified before, and (4) to select the best alternative and provide a justification for that choice. The teams had strong collective incentives since all team members received the same grade for the case studies, which was weighted as 25 percent of the overall course grade. Monocultural teams' processes were significantly more effective than the processes in the multicultural teams during the first three periods. However, both team types' processes were equally effective in the fourth period. Both types of teams could improve their performance over time but the overall performance ratings for the multicultural teams were smaller during the first two periods and equivalent for both team types during the last two periods. Multicultural teams had to cope with the disadvantages of cultural diversity at first. Asymmetric cultural information outweighed the potential benefits. However, after some time multicultural teams were able to reduce their internal problems so that they could work as effectively as the monocultural teams. At first glance, one could argue that this result is not in favor of our hypotheses but actually it is. We assume that working on those business case studies does not require any specific cultural know-how, as confirmed by Watson in our e-mail correspondence. The results of their study confirm hypothesis 2, which suggests that monocultural teams outperform multicultural teams. This was the case because the monocultural teams did not have to cope with cultural diversity. Although the multicultural teams were as effective as the monocultural teams by period 4, they faced higher initial coordination costs. Those costs were incurred to reduce the consequences of asymmetric cultural information. Overall the monocultural teams were "cheaper" for these tasks and, thus, more effective, which is in line with our hypothesis 2.

In an experimental study conducted by Thomas (1999) students were assigned either to multicultural or monocultural groups to analyze five business case studies. The sample consisted of 77 individuals who represented 14 nationalities. Teams were made up of 3 or 4 members. The participants' tasks included the identification of main problem(s), the recommendation of solutions, and the analytical reasoning behind the solution(s). As found

out through e-mail contact, the case studies were Manners Europe, Urban Architecture (A), Ellen Moore (A): Working and Living in Bahrain, The Canada-China Computer-Crisis (A), and Bhiwar Enterprises. They appeared in one or another edition of "International Management Behavior" by Lane, DiStefano, & Maznevski. Thomas (1999) found out that the monocultural teams performed better than the multicultural teams across all five cases. Thomas states in his e-mail correspondence: "As all cases involved an inter-cultural interaction it is reasonable to assume that having different cultures represented could be regarded as a task relevant skill for the group." However, after reading and evaluating the case studies, we conclude that neither of them required any cultural-specific know-how. Indeed, the cases outline cross-cultural experiences and cultural differences but specific cultural knowledge was of no advantage for any case. Thus, the results are in favor of hypothesis 2. Multicultural groups faced process losses that negatively influenced their performance. The cost of the asymmetric information the multicultural groups experienced exceeded the benefits. Monocultural teams were therefore efficient for these tasks.

Watson et al. (1998) used two experiments of which only the second one is relevant for this study. 449 upper-level undergraduates at a large southwestern U.S. university participated over a time span of 15 weeks. Each participant was part of one out of 84 teams that consisted either of only white Americans or multinational/multiethnic team members. There were no significant team differences in terms of age, gender, or college major. All members of a team received the same grade that made up for 25 percent of the course grade. The teams were given one out of three tasks every five weeks. The first task was to describe a publicly traded company of their choice, explain stock price trends and fluctuations, describe the company's salary profiles, and evaluate the organizational structure. The second task included a mini-strategic analysis, a SWOT (strength, weaknesses, opportunities, and threats) analysis, and strategy recommendations. A description of the primary transformation processes and an analysis of the major products and services of the company concluded the third task. Results show that the multicultural teams performed significantly better than the monocultural teams for the first two tasks. However, monocultural teams performed significantly better for the third task. Watson et al. (1998) argued that the multicultural teams performed better for the first two tasks because they were able to use their culturally different perspectives to their advantage. Moreover, the multicultural teams might have realized that differences were present so that they worked more on understanding individual differences than monocultural teams did. Additionally, in contrast to the study by Watson et al. (1993), the tasks were more complex and of longer duration which might have contributed to the results. A more specific explanation in line with our theory of staffing teams is that task 1 and 2 require skills a and b, respectively, from Figure 2. The corporations which undergraduate students from various cultural backgrounds are most likely to choose for their projects must be well known to all members. Thus, we can assume that they will be rather big multinational firms. Hence, it is very likely that task 1 and 2 deal with country-specific issues so that any cost of asymmetric cultural information could have been outweighed. In contrast, task 3 is a rather country-neutral, technological topic requiring skill c in figure 2. Task 3 is the one of those three tasks, which is most likely to be of a monocultural nature. Cultural diversity does not seem to be of any advantage for this task so that potential conflicts and, thus, costs due to asymmetric cultural information, made the multicultural teams perform worse than the monocultural teams. Consequently, Watson et al.'s observations can be interpreted as supporting both hypothesis 1 (task 1 and 2) and hypothesis 2 (task 3).

Elron (1997) explored the relationship between cultural heterogeneity and team performance, and cultural heterogeneity and organizational performance of 121 top management teams (TMTs) working in overseas subsidiaries of 22 MNCs. The average cultural score, calculated as the mean of the first four cultural dimensions by Hofstede (1980) of the participants, was used as the group's cultural heterogeneity score. Elron (1997) found out that the cultural heterogeneity within the TMTs was positively related to TMT performance. This supports our hypothesis 1 because the tasks of TMTs are clearly multicultural. Any potential cost due to asymmetric cultural information was outweighed by the multicultural nature of the tasks. Elron's results show that employing multicultural groups are beneficial to international subsidiaries. Unfortunately, the questionnaire used by Elron did not ask for any relationship between culture-specific know-how and task characteristics. However, as found out through our e-mail correspondence, Elron considered the *combined knowledge* of local managers and expatriates important to fulfill the tasks, not the culture per se. This is exactly what is predicted by Figure 2: The efficient mix of locals, expatriates, and third country nationals depends on the nature of the task. Overall, Elron's study clearly supports hypothesis 1.

Earley and Mosakowski (2000) conducted similar studies. In the first of their three studies, they distinguish highly heterogeneous, moderately heterogeneous, and homogenous teams. The different categories of teams were based on the work by Lau and Murnighan (1998). In highly heterogeneous teams, team members differ in salient traits. Moderately heterogeneous teams are confronted with differences in only a few salient features that distinguish subgroups. In contrast to these two team types, members of highly homogeneous teams share key salient characteristics. Earley and Mosakowski (2000) carried out field study observations and interviews in order to find out how the composition of transnational teams influenced performance and which key variables accounted for this effect (study 1). The participating MNC was a multinational, U.S.-based clothing manufacturer who emphasized teamwork. Five teams were chosen which conducted meetings at Bangkok, Thailand. The members of all five teams had similar work experience and educational backgrounds so that nationality was perceived to be the key difference in salient characteristics. All teams worked in one or another area of marketing requiring different degrees of country-specific skills as specified below. According to Earley and Mosakowski (2000), the two moderately heterogeneous teams experienced the poorest performance whereas the two highly heterogeneous teams and the low heterogeneous team performed better and were very satisfied with their team experiences.

Overall, effectiveness ratings were made by Earley and a company general manager based on their impressions of the teams' effectiveness. Moreover, the teams rated themselves by answering the question "How effective were you as a team as you worked on this project?" on a five-point-scale. (This information was gathered from e-mail contact with Earley.) Team 1 consisted of two Thais, one Australian, one American, one Vietnamese, one Malaysian, and one Indonesian. This regional marketing team was perceived as being highly heterogeneous. The team was formed twelve months before the study was conducted. It explored new opportunities for existing products in the Pacific Rim. This team was rated as working very effectively. The members' culture-specific know-how was useful to perform the task. This is in line with Figure 2. Moreover, because of the early formation of the team they had overcome any disturbing asymmetric cultural information so that they could leverage their diverse skills toward the task. Team 2 was also highly heterogeneous. It included three Thais,

two Australians, three Americans, one person from Hong Kong, one Malaysian, and one Indonesian. They were responsible for creating new product lines for the Pacific Rim and beyond. They had not met before the study began. This team experienced several difficulties at the beginning, probably due to distorted expectations, but was rated by Early and the company's general manager as highly effective. Again, culture-specific know-how of the team members was the key factor to work effectively on the task they were assigned. Thus, they performed very well after overcoming the asymmetric cultural information at the beginning and successfully handling the risks of adverse selection and moral hazard with respect to culture.

The findings about teams 2 are consistent with Figure 2. The product marketing team 3 consisted of four Thais and three Americans and was characterized as being moderately heterogeneous. The Americans had stayed in Thailand between three months and two years before the assignment. This team evaluated existing Thai product lines and expansion opportunities into countries such as Pakistan and Vietnam, and it was formed six months prior the study. This team was rated as being moderately effective. However, this team experienced several serious conflicts because of the Thais speaking only Thai and not translating what they said into English. Here is a moral hazard problem. None of them enjoyed being at the meetings, and Americans did not respect the Thais' opinions and vice versa. The Americans were obviously home country expatriates in terms of the nature of the tasks and Thais were partly locals (for the evaluation of existing Thai product lines) and partly third country nationals (for the evaluation of expansion opportunities into foreign markets). Still, this team did not have any members from the countries they evaluated expansion opportunities for. Although the Thais' cultural knowledge about their home country was important for fulfilling the task in Thailand, no cultural knowledge with regard to Pakistan or Vietnam was represented in this team. Thus, the cost of asymmetric cultural information could not be recovered by any possible team benefits. The combination of the team members was a severe mismatch between required cultural know-how and staffed know-how (see Figure 2). Team 4 was a product sales group that was assigned to oversee the sales of various existing product lines in Thailand and neighboring countries. Five team members were Thais, one was American, and one was British. The British and the American had substantial experience in Thailand, and spoke reasonably good Thai. Thus, the team was characterized as being low in heterogeneity. The team was formed just shortly before the observations began. The ratings suggest that this team was very effective and operated well from the beginning. Similar to team 3, the American was a home country expatriate, the Thais were partly locals (for overseeing sales in Thailand) and partly third country nationals (for overseeing sales in neighboring countries), and the British was a third country national. In contrast to team 3, the Non-Thais had reduced the cultural asymmetric information extensively because they learned Thai and were familiar with the Thai culture. Thus, the conflict potential was reduced to a minimum. This lead to an effective performance of the team where the Thais provided the knowledge of the local culture whereas the Non-Thais provided company-specific or technological knowledge. According to interviews conducted with the Non-Thais, it seems, as they were very sensitive to the Thai culture in contrast to the Non-Thais in team 3. Team 4 is a good example to illustrate figure 1 because asymmetric cultural information was reduced and, thus, the team's cultural potential could be used to the teams' advantage.

Team 5 was a product sales group responsible for Thailand neighboring countries. The team consisted of three Thais and two Americans, hence, being a moderately

heterogeneous team. Similar to team 3, the Americans had only limited Thai experience, which contributed to rather high degrees of asymmetric cultural information and, thus, to the team's poor performance. This team was rated as being the one with the lowest effectiveness because the split between the Thais and the Americans was very serious. Again, the Americans served as home-country expatriates, and the Thais as locals. However, as illustrated by figure 1, they were not sensitive to the other cultural peculiarities and, hence, could not reduce cultural asymmetric information. According to our theory, we cannot confirm the interpretation of Earley and Mosakowski (2000) since they failed to make a distinction between relevant and irrelevant country-specific know-how of the teams with respect to the task. Their study confirms figure 2 but, due to their methodological deficits, we do not think their study 1 can be used to verify or falsify either one of our hypotheses.

After conducting study 1, Earley and Mosakowski (2000) hypothesized an upright U-shaped relationship between team heterogeneity and team effectiveness and tried to confirm this relationship with two laboratory experiments (study 2 and 3). The sample of study 2 contained 92 managers from 34 different countries. Each individual was assigned to a homogeneous (all members from the same country), a split (two members from one country and two from another), or a heterogeneous team (all members from different countries). The 23 teams performed their task during two 20-minute performance trials that were separated by a 30-minute planning session. Teams were given short descriptions of fictitious products for which they had to recommend a medium with which to advertise each product in each performance trial. Four criteria had to be taken into consideration for each choice. The teams' task was to come up with a recommendation for as many products as possible in the given time. As found out through e-mail contact with Earley, the products were not designed for a certain market so that culture-specific know-how was not required by the nature of the task. 161 MBA students of 26 different nationalities thought by four professors were observed for study 3. The students were not aware of the fact that Earley and Mosakowski studied their behavior. The students were assigned to teams of six to eight people. The teams worked together for five to seven weeks solving a Harvard Business Case Study called David Fletcher. A heterogeneity score was assigned to each team based on the number of subgroups represented within the respective team. Relatively homogeneous teams included only two nationalities. Heterogeneous teams, which were dominated by subgroups, consisted of three to four nationalities, and heterogeneous teams without any obvious subgroups contained five or more nationalities. The tasks consisted of usual classroom group activities such as writing up a case analysis. The project score assigned by each team's professor on the team paper was used as the performance measure. In addition, Earley and Mosakowski asked the teams for their own assessment of their team dynamics. Early and Mosakowski (2000) concluded that the results of study 2 and 3 confirm the upright U-shaped relationship between heterogeneity and team effectiveness in that homogeneous and highly heterogeneous teams outperform moderately heterogeneous ones in the long run. However, one must be careful to draw this conclusion for at least two methodological reasons:

First, the different categories of team composition seem inconsistent. In study 1, team 3 and team 5 are seen as moderately heterogeneous by Earley and Mosakowski (2000) because they consist only of two nationalities compared to team 1 and 2, which included six or more nationalities. Earley and Mosakowski (2000) followed the thoughts of Lau and Murnighan (1998) in characterizing the teams. However, their characterization is only partially based on objective criteria observable ex ante such as country of birth (Earley &

Mosakowski, 2000, pp. 30-31). They also include observations that were made during the study to the effect that some of the characterizations seem to be rather circular: Because teams behaved in a certain way during the study, they were deemed more or less heterogeneous. This is inconsistent with our definition of multiculturalism. In addition, the categorization in study 2 is different from the categorization in study 1: Homogeneous teams are referred to as teams consisting of only one nationality, split teams are split across two nationalities equally, and heterogeneous teams are teams in which all members come from different countries. This categorization is more detailed and somehow in line with our definition. However, study 3 uses the terms highly homogeneous, moderate heterogeneous, and highly heterogeneous somewhat arbitrarily again: According to our definition, all teams in study 3 were heterogeneous/multicultural whereas teams with two or more nationalities were still considered homogenous.

Second, Earley and Mosakowski (2000) did not seem to deem the nature of the task, either monocultural or multicultural, to be of any relevance for the relative performance of monocultural or multicultural teams. Their results suggest that very homogeneous as well as very heterogeneous teams perform well (at least in the long run) independent of the nature of the task. Remember, the tasks in studies 1 were multicultural whereas the tasks in study 2 and 3 were monocultural (as confirmed by Earley by e-mail). For this reason, the study by Earley and Mosakowski (2000) cannot be taken to confirm or reject either of our hypotheses because this would require a direct comparison of how teams perform at monocultural versus multicultural tasks. According to our definition study 1 and 3 use only multicultural teams whereas study 2 uses both monocultural and multicultural teams. However, what we would call "multicultural" is subdivided in study 2 into "split" and "heterogeneous" teams. In order to use the results of study 2 with respect to our hypotheses, we would have to merge what Earley and Mosakowski (2000) called split and heterogeneous teams. Unfortunately, we cannot do this because sufficiently detailed data for the results of a combination of the split and the heterogeneous teams are not available.

The study by Earley and Mosakowski (2000) reflected the immense problems of doing empirical research, especially field studies, about the performance of multicultural teams. The results of the empirical studies are summarized in Table 1.

Conclusion and Agenda for Future Research

Asymmetric cultural information can hinder a multicultural team to benefit from its diverse know-how. A decisive factor in making a multicultural team successful is the reduction of the problems arising from asymmetric information so that neither misunderstandings nor an opportunistic hiding behind culture do lead to conflicts reducing the team's effectiveness. Another issue is team composition. Economic theory suggests that a team – whether monocultural or multicultural – should be formed according to task characteristics so that team members' combined skills actually cover the required skill profile. Three studies provide support for hypothesis 1 that multicultural teams will outperform monocultural ones if the task

Table 1: Synopsis of the Empirical Results

	Method	Hypothesis 1	Hypothesis 2
McLeod, Lobel, & Cox (1996)	Experimental	+	
Watson, Kumar, & Michaelsen (1993)	Experimental		+

Thomas (1999)	Experimental		+
Watson, Johnson, & Merritt (1998)	Experimental	+ (tasks 1 and 2)	+ (task 3)
Elron (1997)	Observational	+	
Earley & Mosakowski (2000)	Observational (study 1)		
	Experimental (study 2)	Sufficiently detailed data unavailable	
	Experimental (study 3)		

+: Support for the respective hypothesis
–: Non-Support for the respective hypothesis

requires culture-specific know-how the team members have. Three studies confirm hypothesis 2 that monocultural teams outperform multicultural teams if the task does not require multicultural know-how (cf. Table 1). Thus, we can continue to assume that the economic approach provided here helps to explain important aspects of intercultural communication problems in the business world.

On purpose, our hypotheses were designed to be as simple as possible. Consequently, the picture of multicultural teamwork remains incomplete. Our study provides neither a complete theoretical model nor first-hand empirical evidence but it tries to connect economic theory with existing empirical studies. However, empirical evidence is incomplete. The following questions will be of interest in guiding future research:

1. How does the duration of a study influence the outcome? Does leaning occur over time? The study by Watson et al. (1993) lasted for 17 weeks, which is reasonably long in contrast to the studies by Thomas (1999) or Elron (1997). However, an even longer time horizon than 17 weeks might be considered relevant in order to reveal further insights about how and how fast teams learn to work together.
2. How does the time needed to fulfill the task influence the outcome? Do teams learn "on the project"? The study by Watson et al. (1998) required participants to fulfill a task that was more complex and took longer (five weeks) than other studies. They also achieved quite different results than Watson, Kumar, and Michaelsen (1993). However, further research is needed here – empirical evidence from only one study is not sufficient in order to soundly identify any relation between time and the performance of multicultural teams.
3. Are the results different if "real-life" teams are studied instead of student teams assembled for experiments? Studies as Earley and Mosakowski (2000) and Elron (1997) seem to be more useful to explain reality than the studies by Watson, Johnson, and Merritt (1998) or Watson, Kumar, and Michaelsen (1993) because they analyze "real-life" teams and not student teams that were only formed for research purposes. Unfortunately, neither Earley and Mosakowski (2000) nor Elron (1997) explored the differences between multicultural team and monocultural team performance on the same task. Further research in this direction will be needed. Yet, it might be impossible to investigate this analyzing 'real-life' teams because companies will be likely not to use multicultural and monocultural teams for the same task.

4. Do different leadership styles make any difference in the performance of multicultural teams in contrast to monocultural teams? Watson, Johnson, and Zgourides (2002) recently investigated the effects ethnic diversity might have on learning team leadership, group processes, and team performance. However, more research would be needed in this area in order to be able to make valid predictions with regard to 'the' multicultural leadership style.

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