A Comparative Analysis of Individual Communication Processes in Small Group Behavior between Homogeneous and Heterogeneous Groups

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This study compares the communication behaviors (i.e., turn taking and speaking time distribution) of a cross-cultural small-group communication environment to further investigate the generalizability of Du-Babcock’s (1999) findings. The study also adapted Oetzel’s (1998) effective decision-making theoretical model (EDMT) to broaden the investigation to include cultural dimensions and group composition influences on communication behaviors in small group meetings. The findings suggest that although culture is a contributing factor, the influence of culture and group composition on the communication behaviors of individuals in a homogeneous or in a heterogeneous group decision-making meeting is mixed.

Introduction

The purpose of this study is twofold. Firstly, my overall objective is to study turn-taking behavior and further investigate the generalizability of the results of an earlier Hong Kong investigation (see Du-Babcock, 1999, pp.544-574) by extending the research to a different geographical location where English is the dominant medium of communication, but where participants came from diverse cultural backgrounds. The earlier study found that the length of speaking time among individuals was almost the same in the English and Cantonese meetings, but differences existed in the number and length of turn-takings: group members took more and shorter turns in the Cantonese meetings and fewer and longer turns in the English meetings. Secondly, the current study adapted Oetzel’s (1998) effective decision-making theory (EDMT) to examine the extent that cultural dimension (individualism-collectivism or I-C) and group composition (homogeneous-heterogeneous) influence small group turn-taking behaviors.

The reason for undertaking this research arises from the results of my earlier published empirical study in turn-takings (see article in Management Communication Quarterly, 1999, 544-574) and a business pilot study on business ethics and communication that found a large majority of both individuals and groups make decisions emphasizing short-run gains (increased profits) and make unethical decisions at the expense of compromising both long-term gains and ethical standards. Taken together, the results from these studies (which focus on the Hong Kong environment) suggest the need for further and broader investigation of intercultural small group communication environments. The current study attempted to integrate the key issues derived from these two earlier studies and further investigate how
cultural I-C and group composition impact small-group behavior in respect of turn-taking behavior and speaking time distribution.

The key issues and problems addressed in this current research therefore revolve around the importance of small group communication behaviors in decision-making meetings among individuals who came from similar cultural backgrounds (homogeneous groups) and different cultural backgrounds (heterogeneous groups). It also seeks to identify the extent to which one dimension of national culture (individualism-collectivism according to Hofstede, 1991, and Trompenaars, 1993) influences the way people interact differently in homogeneous groups and in heterogeneous intercultural groups. Therefore, the purpose of this study was to re-examine whether culture and group homogeneity affect turn-taking and speaking time distribution. The objectives of this research were therefore to investigate whether:

1. Cultural I-C is a contributing factor in the number of turns taken and the distribution of speaking time; and
2. Individuals from collectivistic cultures (e.g., Hong Kong, China, Japan, Indonesia) and individualistic cultures (e.g., US) exhibit different communication behaviors when participating in homogeneous groups as compared to heterogeneous groups.

Review of Related Literature

Individualism-collectivism (I-C) is a theoretical dimension of a cultural construct that has been used to predict a variety of communication behaviors, such as low- and high-context communication styles (see for example, Gudykunst, Matsumoto, Ting-Toomey, Nishida, Kim, & Heyman, 1996) and conflict styles (Ting-Toomey, 1988). Individualism stands for a society in which the ties between individuals are loose, whereas collectivism refers to a society in which people from birth onwards are integrated into strong, cohesive groups, which throughout their lifetime continues to protect them in exchange for unquestioning loyalty (Hofstede, 1991, p.260). Although the contrast of cultural I-C has been used to explain and organize a wide variety of behaviors in a number of different cultures, the use of cultural I-C to explain turn-taking communication behavior remains limited and inconclusive (Oetzel, 1998).

A very extensive comparative study by Gudykunst and his colleagues (1996) shows that cultural I-C has a direct influence on behavior and that the individualistic and collectivistic tendencies influence how individuals perceive themselves, which in turn impacts on their communication behavior (e.g., communication styles). Although this research has contributed important insights about culture and behavior, Oetzel (1998) has argued that small-group contexts in many of the studies involved cross-cultural comparisons and that the studies did not focus on cross-cultural communication. These oversights are important, particularly since the world economy has become globalized and individuals are more likely to communicate in a culturally diverse business environment with people possessing differing levels of English-language proficiency (assuming English is a world business language). Working in culturally diverse groups differs from working in culturally homogeneous groups (Cox, 1994; Watson, Kumar, &
Michaelson, 1993). As noted by Oetzel, (1998), “[a]lthough we know a lot about cross-cultural, interpersonal communication, we do not know much about intercultural, small-group communication” (p.203).

To operationalize small group behavior and communication, I adopted a model of effective decision-making theory (EDMT) developed by Oetzel (1995, 1998). The EDMT model uses cultural I-C and self-construal to predict communication behavior that occurs in culturally homogeneous and heterogeneous small groups. Specifically, the theory proposes that differences in the number of turns, the number of initiated conflicts, and conflict styles in a small group are likely to be influenced by cultural I-C, self-construal, and cultural group composition. Although self-construal is included as one of the input variables in Oetzel’s EDMT model, the current study examined only the cultural I-C variable. The reason for this restricted focus is that both cultural I-C and self-construal are predictors of not only turn-taking and conflict behaviors (Oetzel, 1998), but also communication behavior (Gudykunst et al., 1996). These two studies all show that cultural I-C is mediated by self-construal and that individual behavior is directly affected by cultural I-C. Given the inter-relationship between self-construal and cultural I-C and their effect on individual behavior, only cultural I-C was considered.

According to Oetzel (1998), a decision-making group can be seen as a system with inputs, processes, and outcomes where the input influences the processes and the processes influence the outcomes (see Figure 1). The input variables include the member characteristics (e.g., cultural I-C) and group characteristics (e.g., composition). The process refers to the interaction that occurs among members, such as turn-taking, decision-making, and conflict styles. The output of the group would include such outcomes as decision quality and cohesiveness. The EDMT model has two interdependent goals. First, the theory seeks to understand the influence of cultural I-C and group composition on communication processes (i.e. the influence of input on processes). Second, the theory seeks to predict the relationship between communication processes and group outcomes in culturally homogeneous and heterogeneous small groups (i.e., the influence of processes on outcomes). My current study focuses on the first goal; that is, the extent to which cultural I-C impacts turn-taking and speaking time distribution.

**Figure 1: Systems Model** (adapted from Oetzel, 1998)

<table>
<thead>
<tr>
<th>INPUT</th>
<th>PROCESS</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member Characteristics</td>
<td>Turn Taking</td>
<td>Cohesiveness</td>
</tr>
<tr>
<td>Cultural I-C</td>
<td>Speaking Time Distribution</td>
<td>Decision-Quality</td>
</tr>
<tr>
<td>Group Characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homogeneous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heterogeneous</td>
<td></td>
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</tbody>
</table>

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Input Variables

According to Oetzel (1998), input variables consist of member characteristics (individualistic-collectivistic or cultural I-C) and group characteristics (homogeneous and heterogeneous). For cultural I-C, the dimensions of cultural variability have been extensively used to measure and explain the similarities and differences among national cultures (see for example, Hofstede, 1991; Triandis, 1995; Trompenaars, 1993). Individualistic cultures emphasize the goal of the individual over group goals, whereas collectivistic cultures stress group goals over individual goals. In individualistic societies (such as the United States), when the personal and collective goals come into conflict, then members of such individualistic cultures typically choose to pursue personal goals at the expense of collective goals. In contrast, members of collectivistic cultures (such as Japan) consider it socially desirable to put group goals ahead of individual goals (Triandis, 1995). In this connection, members of collectivistic cultures draw on the “we” identity, whereas members of individualistic cultures draw on the “I” identity (Hofstede, 1991; Ting-Toomey, 1988). It follows then that individuals from collective cultural societies are more willing than those from individualistic cultural societies to comply with the group norms.

Group composition is the second input variable of the EDMT model and has a direct influence on individual communication behavior. Scholars have argued that members of both individualistic and collectivistic cultures have difficulties when interacting in heterogeneous groups (Oetzel, 1995, 1998; Watson et.al., 1993). These difficulties and misunderstandings result because individuals tend to view the interaction from their own cultural perspectives (Nadler, Keeshan-Nadler, & Broome, 1985). As Oetzel (1998) noted, there are few studies that document the influence of group composition on small group communication. For example, one study found that homogeneous groups initially had higher quality processes than heterogeneous groups did, but that over time, heterogeneous groups adjust and have processes at or above the level of homogeneous groups (Watson et al., 1993). It would seem, therefore, that the differences in the cultural backgrounds of heterogeneous groups (a) lead to different communication processes than those adopted in homogeneous groups, and (b) create difficulties and misunderstandings, at least during initial meetings.

Process Variables

The EDMT model focuses on two communication processes at the individual level: turn-taking and conflict behaviors. However, my current study examines the extent to which cultural dimensions and group composition influence small group communication behaviors, i.e., turn-taking and speaking time distribution. In the following, the construct of turn-taking behaviors is reviewed.

Turn-taking is the ordering of moves that involve any organized interplay of speech acts. A turn consists of all the speech interactant’s utterances up to when another individual takes over the speaking role (Du-Babcock, 1999, pp.553-554). Many conversational
researchers focus on turn-taking signals to identify turns (e.g., Ducan & Fiske, 1977). Consistent with this perspective, many small group researchers equate turns to speech acts. A speech act is defined as “an uninterrupted utterance of a single group member which is perceived to perform a specific function (or action) within the group interaction process” (Hirokawa, 1980, p. 63). Thus, to measure turn-taking, my current study focuses on the number of turns an individual takes and the distribution of the turns among group members.

The number of turns an individual takes during a business group meeting or in family conversations (see for example, Ng, Loong, He, Liu & Weatherall, 2000) appears to be influenced by cultural I-C across all groups. Yamada (1990) investigated the turn distribution strategies in business conversational topics between American and Japanese associates and found that American participants distribute their turns unequally, whereas the Japanese take short turns and distribute their turns evenly. Gudykunst and Nishida (1994) explain that this pattern of distribution can be linked to cultural differences. That is, members of individualistic cultures distribute turns unevenly, whereas members of collectivistic cultures distribute turns relatively equally because individuals from collectivistic cultures stress group sharing and harmony rather than individual gains.

Although cultural I-C is likely to be a factor that affects the distribution of the turn-taking and speaking time in intercultural groups, the use of language and the second-language proficiency of the interlocutors are also likely to be relevant factors that influence the number of turns taken and speaking time in group meetings. Du-Babcock’s (1999) study investigated whether the number of turns an individual takes varies among Hong Kong bilinguals when using their native language (Cantonese) or English (second language) to make decisions. Results indicated that (a) the average number of turn-takings in Cantonese meetings was more than those in English meetings (t = 2.04; p < .05), and that (2) there was a moderate relationship between high L2 proficiency and the amount of English used during meetings (r=.37, P<.5). However, the respective speaking times were not significantly different between English and Cantonese meetings (t = .90, p > .05). The results of the original findings only provide partial explanations as to how individuals from collectivistic cultures interact differently when using their first and second languages to make decisions in homogeneous groups.

Based on Du-Babcock’s (1999) findings, the current study attempted to re-examine (a) whether group members from collectivistic cultures distribute turns and speaking time more evenly than group members from individualistic cultures, and (b) whether group members from collectivistic cultures distribute their turns and speaking time more evenly than those from individualistic cultures, who tend to distribute their turns and speaking time less evenly in homogeneous groups than in heterogeneous groups. The even or uneven turn-taking distribution was measured by the standard deviations (S.D.) of both collectivistic and individualistic cultures in terms of individuals’ turn-taking and speaking time distribution. Smaller S.D. indicates that the turns are shared more evenly and that speaking time is more evenly distributed.
Based on the related literature review, three research questions were identified. Research Question 1 addresses the issue of cultural I-C on turn-taking and speaking time distribution. Research Question 2 addresses the issue of the group composition (homogeneity and heterogeneity) effect on the distribution of turn taking and speaking time in group decision-making meetings. As for Research Question 3, it first examines the impact of cultures on the distribution of turn-takings and speaking time. Second, it examines whether individuals from individualistic and collectivistic cultures exhibit similar or different communication behaviors when participating in homogeneous group meetings as compared to heterogeneous group meetings. The three major research questions are listed as follows:

Research Question 1: Do individuals from collectivistic cultures and those from individualistic cultures exhibit different turn-taking behaviors and have different length of speaking time in small-group meetings?

Research Question 2A: Do individuals from collectivistic cultures exhibit different turn-taking behaviors and have different length of speaking time when they participate in homogeneous as compared to heterogeneous small-group meetings?

Research Question 2B: Do individuals from individualistic cultures exhibit different turn-taking behaviors and have different length of speaking time when they participate in homogeneous as compared to heterogeneous small-group meetings?

Research Question 3A: Do individuals from collectivistic cultures and those from individualistic cultures distribute their turns and speaking time differently in small-group meetings?

Research Question 3B: Do individuals from collectivistic cultures distribute their turns and speaking time differently when they participate in homogeneous as compared to heterogeneous small-group meetings?

Research Question 3C: Do individuals from individualistic cultures distribute their turns and speaking time differently when they participate in homogeneous as compared to heterogeneous small-group meetings?

Research Method

Research Participants
Two hundred and seventy-six individuals (N = 276) participated in this study. Ninety-nine of them came from an individualistic culture (e.g. the United States) while 177 were from collectivistic cultures (e.g. Taiwan, Thailand, Hong Kong, etc.). The 177 individuals from collectivistic cultures consisted of three groups: mid-level Chinese managers, Hong Kong students, and U.S. students from various collective cultures (e.g. Hong Kong,
Taiwan, China, Japan, Indonesia and Singapore, etc). Of these, 82 were mid-level managers who enrolled in two sessions of an Organizational Behavior course from a long-distance MBA program; 40 were Hong Kong students studying in English for Professional Communication Program; and 55 were U.S. students who came from collectivistic cultures. Aside from small number of Hong Kong students who graduated from overseas (e.g. the United States, Canada and Hong Kong), the majority of this collectivistic cultural group were educated in Hong Kong.

The work experience of the Chinese participants varied from students without formal organizational work experience to mid-level professional managers working in medium-to large-sized Hong Kong and Chinese private and public sector firms. As for the participants from the individualistic culture, they were native Americans or European Americans, ranging from undergraduates with limited work experience to MBA students with low-level managerial positions.

Although random assignments were not possible, all the participants possessed adequate second-language proficiency. For example, international students from the U.S. obtained at least 550 points in the TOEFL exam (minimal requirement for U.S. admission). As for Hong Kong students, all participants obtained C or above for the English subject in their A-Level Exam (a type of Hong Kong public exam which is equivalent to SAT in the U.S.). The C grade is equivalent to 550 to 600 points for the TOFEL exam.

For the group formation, each of the participants was randomly assigned to homogeneous or heterogeneous groups. For instance, Hong Kong students were either paired with participants in the U.S. to form heterogeneous groups or paired with their own peers to form homogeneous groups; while all the Chinese executives were formed in homogeneous groups. In total, 41 groups were formed.

Procedure
The participants took part in an experiential exercise (Mainiero & Tromley, 1989, pp. 202-209) where groups had to make decisions based on a 45-minute discussion. The experiential exercise in this study provided the setting for the development of realistic business decision-making dialogs. The simulation was constructed around a medical product considered by experts to be injurious to the health of consumers - even to the point of possibly causing death. These consequences had to be evaluated against the potential economic losses to the company, which would be substantial if sales of the drug were to be discontinued. The decision - not an easy one - brings to the surface the issue of dual responsibility in that participants must consider both corporate motivation to operate profitably and the overall interests of society.

The communication task represented in this study required all of the participants to engage in decision-making discussions. The interlocutors needed to share and present information from their respective viewpoints in order to reach optimal decisions. The group members
had to interactively integrate inputs and make decisions that not only contributed to the profitability of the entire firm, but also took into consideration the well-being of society as a whole, rather than just make decisions that would improve results in their respective interests. In this connection, the focus of the discussions was on corporate strategy development in five topical areas that the company should adopt in its US domestic and foreign markets.

The video- and audio-taped discussions of the 41 group meetings were subjected to interaction analysis. English language decision-making meetings were transcribed verbatim and the Chinese language meetings were transcribed in Chinese. To conduct comparative analysis of 41 group meetings, similarities and differences were defined by (a) the length of speaking time by each group member and (b) the number of turns taken by individuals.

To assess turn-taking communication behavior, the turn-taking framework developed by Sacks, Schegloff, and Jefferson (1974) was used and the specific technique used in an earlier study (Du-Babcock, 1999). In other words, a turn was taken as consisting of all the speech interactant’s utterances up to the point another individual takes over the speaking role. The number of turns taken by each participant was codified, counted, and compared. Speaking time was calculated by using a stopwatch to measure the exact length of each conversational turn. The length of speaking time for each turn was also coded according to the designated interlocutors and served as a cross check of meeting interaction.

Data Analysis
This current study seeks to examine the influence of a cultural dimension (individualism-collectivism) and group composition (culturally homogeneous-heterogeneous) on turn-taking, and speaking time distribution. The considerable variations in the meeting duration (ranging from 449 to 3540 seconds) and the number of meeting participants (ranging from 5 to 10) could have adversely affected the accuracy of the statistical test results on the variables being examined. In order to prevent these intervening factors from confusing or influencing the statistical tests and to obtain more accurate results, the researcher attempted to control and adjust the factors (that is, to treat them as covariates and keep them constant) by using analysis of covariance (ANCOVA) tests.

Mean scores and standard deviations for all the variables were calculated and compared. ANCOVA tests were performed to investigate (a) whether there were significant differences in the communication behaviors between collectivistic and individualistic cultures, and (b) whether individuals from collectivistic and individualistic cultures exhibit similar or different communication behaviors when participating in a homogeneous and a heterogeneous group with regard to the examined variables. These tests enabled me to address the research questions the study was set up to explore. Research Questions 1 and 2 focused on the influence of a culture’s individualist or
collectivist orientation and group composition on the number of turn-takings and amount of speaking time. Research Question 3 examined whether individuals from collectivistic cultures or individualistic cultures share turns and distribute speaking time more evenly when participating in homogeneous groups as compared to heterogeneous groups. Based on the three research questions, the related hypotheses are listed as follows:

Hypothesis 1: Individuals from collectivistic cultures are likely to take fewer turns than those from individualistic cultures in small-group decision-making meetings.

Hypothesis 2: Individuals from collectivistic cultures are likely to speak less than those from individualistic cultures in small-group decision-making meetings.

Hypothesis 3: Individuals from collectivistic cultures are likely to take more turns in homogeneous group meetings than in heterogeneous group meetings.

Hypothesis 4: Individuals from collectivistic cultures are likely to speak more in homogeneous group meetings than in heterogeneous group meetings.

Hypothesis 5: Individuals from individualistic cultures are likely to take less turns in homogeneous group meetings than in heterogeneous group meetings.

Hypothesis 6: Individuals from individualistic cultures are likely to speak less in homogeneous group meetings than in heterogeneous group meetings.

Hypothesis 7: Individuals from collectivistic cultures are likely to distribute their turns more evenly than those from individualistic cultures in small-group meetings.

Hypothesis 8: Individuals from collectivistic cultures are likely to distribute their speaking time more evenly than those from individualistic cultures in small-group meetings.

Hypothesis 9: Individuals from collectivistic cultures are likely to distribute their turns more evenly in homogeneous group meetings than in heterogeneous group meetings.

Hypothesis 10: Individuals from collectivistic cultures are likely to distribute their speaking time more evenly in homogeneous group meetings than in heterogeneous group meetings.

Hypothesis 11: Individuals from individualistic cultures are likely to distribute their turns less evenly in homogeneous group meetings than heterogeneous group meetings.
Hypothesis 12: Individuals from individualistic cultures are likely to distribute their speaking time less evenly in homogeneous group meetings than in heterogeneous group meetings.

Findings

Research Question 1 asked whether individuals from individualistic and collectivistic cultures exhibit similar or different turn-taking and speech duration communication behaviors. To answer this question, analyses were performed to investigate whether there were significant differences between the two cultures with regard to two identified variables: (a) number of turns taken and (b) amount of speaking time.

An ANCOVA test was performed to discover whether there were any differences between individuals from individualistic and collectivistic cultures in their turn-taking behavior (see Table 1). With the meeting duration and the number of participants controlled as covariates, a significant result was obtained (F = 13.790; p < .001). Hypothesis 1 is supported. The results show that the I-C construct of culture is a significant contributing factor in influencing the number of turns taken by participants in small group decision-making (F = 4.044; p < .05) meetings, although individuals from collectivistic cultures (37.998) tend to take fewer turns than those from individualistic cultures (48.639).

Table 1
Mean scores of the Identified variables between Collectivistic and Individualistic Cultures

<table>
<thead>
<tr>
<th>Variables</th>
<th>All</th>
<th>Collectivistic Cultures</th>
<th>Individualistic Cultures</th>
<th>Mean Difference</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn taking (number)</td>
<td>43.319</td>
<td>37.998</td>
<td>48.639</td>
<td>-10.641</td>
<td>4.044*</td>
</tr>
<tr>
<td>Amount of speaking time (seconds)</td>
<td>351.404</td>
<td>300.782</td>
<td>402.027</td>
<td>-101.245</td>
<td>9.245**</td>
</tr>
</tbody>
</table>

* p < .05  
** p < .01

The same statistical test was also used to examine whether individuals from collectivistic cultures are likely to speak less than those individuals from individualistic cultures. Again, the meeting duration and the number of participants were kept constant and the test result derived was statistically significant (F = 31.289; p < .001). The result indicates that the amount of speaking time for individuals from collectivistic cultures (300.782 seconds) was significantly less than that for individuals from individualistic cultures (402.027 seconds) at .05 significant level (F = 9.245). The finding reveals that the I-C
cultural dimension is a determining factor that significantly affects the speaking time of the meeting participants. Hypothesis 2 is also supported.

In sum, the results of hypotheses 1 and 2 confirmed that individuals from different cultures adopt different communication behaviors in small-group decision-making meetings. Individuals from collectivistic cultures tend to take fewer turns and speak less than those from individualistic cultures.

Research Question 2 measures the influence of group composition on the number of turn-takings and the amount of speaking time among participants in group decision-making meetings. To answer Research Question 2, ANCOVA with two independent categorical variables were performed to investigate whether there are significant differences in turn-taking behavior and the distribution of speaking time (a) among the participants from collectivistic cultures and (b) among those from individualistic cultures. It was hypothesized that individuals from collectivist cultures are likely to take more turns (Hypothesis 3) and speak more (Hypothesis 4) in homogeneous group decision-making meetings than in heterogeneous group decision-making meetings while the reverse is held for individualistic cultures (Hypotheses 5 & 6).

The result of the ANCOVA test (see Table 2) shows that group composition exhibits significant effect on the amount of speaking time of individuals from collectivistic cultures ($F = 7.470; p < .01$) (Hypothesis 4). Collectivistic individuals spoke more in homogeneous group decision-making meetings (382.096) than in heterogeneous group decision-making meetings (268.714). For the turn-taking behaviors, collectivistic individuals still took more turns in homogeneous group meeting (45.328) than in heterogeneous group meetings (37.673) though the test did not derive a significant result.

Table 2
Mean Scores of Turn-takings and Speaking Time for Collectivistic Cultures in Homogeneous and Heterogeneous Group Meetings

<table>
<thead>
<tr>
<th>Variables</th>
<th>All</th>
<th>Homogeneous</th>
<th>Heterogeneous</th>
<th>Mean Difference</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn taking (number)</td>
<td>41.500</td>
<td>45.328</td>
<td>37.673</td>
<td>7.655</td>
<td>1.082</td>
</tr>
<tr>
<td>Amount of speaking time</td>
<td>325.405</td>
<td>382.096</td>
<td>268.714</td>
<td>113.383</td>
<td>7.470*</td>
</tr>
<tr>
<td>(seconds)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < .01$

For Hypotheses 5 and 6, which address the communication behaviors of individuals from individualistic cultures participating in homogeneous and heterogeneous small-group meetings, the ANCOVA test results are not significant (See Table 3). Despite this, there
was still a difference in the communication behaviors among individuals from individuals in meetings of different group compositions. They took more turns (41.574 vs. 36.521) and speak more (345.341 vs. 272.634) in heterogeneous group meetings than in homogeneous group meetings.

Table 3
Mean Scores of Turn-takings and Speaking Time for Individualistic Cultures in Homogeneous and Heterogeneous Group Meetings

<table>
<thead>
<tr>
<th>Variables</th>
<th>All</th>
<th>Homogeneous</th>
<th>Heterogeneous</th>
<th>Mean Difference</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn taking (number)</td>
<td>39.048</td>
<td>36.521</td>
<td>41.574</td>
<td>-5.053</td>
<td>.458</td>
</tr>
<tr>
<td>Amount of speaking time (seconds)</td>
<td>308.987</td>
<td>272.634</td>
<td>345.341</td>
<td>-72.707</td>
<td>1.648</td>
</tr>
</tbody>
</table>

The result that group composition exerts an influence on the turn-taking behaviors of individuals is consistent with the previous research findings of Oetzel (1998) where Japanese members took fewer turns in heterogeneous groups than in homogeneous groups, and where European Americans took more turns in heterogeneous than in homogeneous groups.

The reason for such a contrasting difference existing among collectivists participating in homogeneous and heterogeneous groups is likely to be attributed to their confidence in using a second language. Individuals from collectivistic cultures feel less confident and possibly exhibit communication apprehension, thereby taking fewer turns and speaking less when communicating in a heterogeneous group where their counterparts are native-English speakers.

Research Question 3 first examines whether individuals from collectivistic cultures distribute turns and speaking time more evenly than those from individualistic cultures (Research Question 3A). Second, this research question further examines whether individuals from collectivistic cultures distribute turns and speaking time more evenly (Research Question 3B), and whether those from individualistic cultures distribute turns and speaking time less evenly in homogeneous groups than in heterogeneous groups (Research Question 3C).

To answer Research Question 3, I attempted to make some interpretations from the distribution of turns and speaking time difference between two cultural groups by means of standard deviation (S.D.) (see Table 4). The S.D. measures the degree of dispersion and thus can reflect the distribution of turns and speaking time among the participants in group decision-making meetings. A larger S.D. indicates a larger degree of dispersion and thus a wider distribution of turns or speaking time. It follows that in a meeting with a
wide distribution, some of the participants are likely to take a very large number of turns or more speaking time, while some take very few turns or little speaking time.

To answer Research Question 3A, an ANCOVA test was performed and the results (see Table 4) show that individuals from collectivistic cultures, with a smaller S.D. (S.D. = 40.030) and a resultant narrower distribution, are seen to distribute their turns more evenly in a group decision meeting than those from individualistic cultures (S.D. = 43.076). Likewise, a smaller S.D. or a narrower distribution of speaking time for collectivistic individuals (S.D. = 255.277), as compared to a larger S.D. for individualistic participants (S.D. = 318.750), shows that these collectivistic individuals tend to distribute their speaking time more evenly than participants from individualistic cultures.

Consistent with the studies by Yamada (1990) and Gudykunst and Nishida (1994), the results of the current study show that individuals from collectivistic cultures, who stress group sharing rather than individual gains, shared turns and distributed speaking time more evenly than those from individualistic cultures in group meetings.

Table 4
Distributions (Standard Deviations) of Turn-takings and Speak Time between Two Cultural Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Standard Deviation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of turn-taking</td>
<td>Amount of speaking time</td>
</tr>
<tr>
<td>Collectivistic</td>
<td>40.030</td>
<td>255.277</td>
</tr>
<tr>
<td>Homogeneous</td>
<td>36.723</td>
<td>250.717</td>
</tr>
<tr>
<td>Heterogeneous</td>
<td>45.444</td>
<td>202.135</td>
</tr>
<tr>
<td>Individualistic</td>
<td>43.076</td>
<td>318.750</td>
</tr>
<tr>
<td>Homogeneous</td>
<td>42.095</td>
<td>318.642</td>
</tr>
<tr>
<td>Heterogeneous</td>
<td>43.774</td>
<td>317.722</td>
</tr>
</tbody>
</table>

When taking group composition into account, the results show that members of collectivistic cultures share their turns more evenly in homogeneous groups (S.D. = 36.723) than in heterogeneous groups (S.D. = 45.444) (see Table 4). However, the reverse pattern was found in the distribution of speaking time. Individuals from collectivistic cultures distribute their speaking time more evenly in heterogeneous groups (S.D. = 202.135) than in homogeneous groups (S.D. = 250.717). Such an inconsistency between the distribution of turn-takings and speaking time could be due to the fact that second-language speakers may find it easier to communicate with individuals who are also non-native-English speakers. Some of them may feel freer to speak, thus widening the distribution of speaking time in homogeneous group meetings.
The same distribution patterns as observed within collectivistic cultures were also found among individuals from individualistic cultures, though the differences in the standard deviations are very slight. Individuals from individualistic cultures also share their turns more evenly in homogeneous group meetings (S.D. = 42.095) than in heterogeneous group meetings (S.D. = 43.774) but distribute their speaking time more evenly in heterogeneous group meetings (S.D. = 317.722) than in homogeneous group meetings (S.D. = 318.642). With such slight differences in the standard deviations, participants from the individualistic cultures in fact exhibit very consistent communication behaviors in the distribution of turn-taking and speaking time no matter whether they take part in homogeneous or heterogeneous group meetings.

In sum, the overall findings for Research Question 3 show that individuals from collectivistic cultures, which stress group sharing, tend to distribute their turns and speaking time more evenly than those from individualistic cultures. Also, individuals from collectivistic cultures are likely to share their turns more evenly in homogeneous group meetings but distribute their speaking time more evenly in heterogeneous group meetings. As for individualistic cultures, participants exhibit very consistent communication behaviors in the distribution of turn-taking and speaking time regardless the group composition of the meetings.

**Conclusion**

The objective of this study was to examine whether cultural I-C and group composition influence turn-taking, and speaking time distribution. The results of this study indicate that: (a) the cultural dimension of I-C is a predictor of the number of turn-takings and the speaking time duration, (b) group composition has a significant effect on the amount of speaking time among individuals from collectivistic cultures; that is, group members of collectivistic cultures have longer speaking time in homogeneous than in heterogeneous group meetings, (c) individuals from collectivistic cultures distribute their turns and speaking time more evenly than those from individualistic cultures, and (d) individuals from collectivistic cultures tend to share their turns more evenly in homogeneous groups but distribute their speaking time more evenly in heterogeneous groups. However, the results show very slight differences in the turn-takings behaviors or speaking time duration among individuals from individualistic cultures, whether they participated in homogeneous group meetings or heterogeneous group meetings.

**Implications**

The findings of the current study have important and pragmatic implications for intra- and cross-cultural communication. The results of the study illustrate the usefulness of cultural I-C and group composition to explain whether individuals exhibit similar or different communication behaviors (i.e., turn-taking and speaking time duration) in small-group decision-making meetings. The findings of the current study add value to a very extensive literature on cross-cultural communication in examining whether and how individuals communicate differently or similarly in intra- and cross-cultural situations.
The results also confirm the previous findings that cultural I-C and group composition have an important effect on communication behaviors in small-group decision-making meetings. These findings suggest that it is important for native-English speakers to accommodate their counterparts who possess varying second-language proficiencies and diverse cultural backgrounds. It is suggested that additional research in this area should focus on examining how to improve the interaction among people with diverse backgrounds and varying second-language proficiency when they communicate in a cross-cultural environment.

References


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