Grounding and Information Communication in Intercultural and Intracultural Dyadic Discourse

Han Z. Li
Department of Psychology
University of Northern British Columbia
Prince George, Canada

Past research on the theory of grounding indicates that grounding facilitates human communication in intracultural conversations. This study extends previous research by examining whether grounding functions in the same way in both intracultural and intercultural conditions. Participants were 40 Canadians and 40 Chinese who formed 40 dyads in 4 experimental conditions: Canadian/Canadian, Chinese/Chinese, Chinese speaker/Canadian listener, and Canadian speaker/Chinese listener. All conversations were videotaped and microanalyzed. It was found that the more dyads engaged in grounding activities, the better they communicated the information from the speaker to the listener in all experimental conditions combined. It was also found that grounding and listener recall scores were highly correlated when the Canadians served as listeners, but not when the Chinese served as listeners. This finding seems to indicate a cultural difference between Chinese and Canadians regarding the meaning of their grounding activities. Chinese listeners interact for the sake of interacting (e.g., building rapport), whereas Canadian listeners interact for the sake of transmitting content.

> Discourse is an interactional achievement.
> —*Schegloff, 1982, 1997*

Human communication is intrinsically fallible, whether we are aware of it or not. Miscommunication occurs between conversationalists who share the same language and cultural backgrounds, and particularly in intercultural interactions in which one participant speaks a second language and functions in a foreign culture (Erickson, 1975; Gass & Varonis, 1991; Gumperz, 1978; Li, 1999; Tannen, 1981). One particular phenomenon, conversational grounding (Clark & Brennan, 1991; Clark & Schaefer, 1989a, 1989b; Clark & Wilkes-Gibbs, 1986; Isaacs & Clark, 1987) has

been found to facilitate human communication in intracultural settings (Clark & Brennan, 1991; Schegloff, 1982, 1992; Schober & Clark, 1989). By extending previous research from intracultural conversations to intracultural and intercultural comparisons, the goal of this study is to explore whether conversational grounding functions in the same way across cultural conditions.

THE THEORY OF GROUNDING

The core idea of the theory of grounding is that face-to-face interaction is a collaborative process (Clark & Brennan, 1991; Clark & Schaefer, 1989a, 1989b; Clark & Wilkes-Gibbs, 1986; Goffman, 1967; Grice, 1975; Isaacs & Clark, 1987; Schegloff, Jefferson, & Sacks, 1977), the success of which depends on how participants coordinate on *process* and *content* (Clark & Brennan, 1991; Schegloff, 1982, 1992; Schober & Clark, 1989). In the following anecdote, Clark and Brennan (1991) elaborated on the relationship between process and content:

> When Alan speaks to Barbara, he must do more than merely plan and issue utterances, and she must do more than just listen and understand. They have to coordinate on content (Grice, 1975, 1978). When Alan refers to "my dogs," the two of them must reach the mutual belief that he is referring to his feet. They must also coordinate on process. Speech is evanescent, and so Alan must try to speak only when he thinks Barbara is attending to, hearing, and trying to understand what he is saying, and she must guide him by giving him evidence that she is doing just this. (p. 128)

In this instance, the two interlocutors may or may not have "a vast amount of shared information or common ground" (Clark & Brennan, 1991, p. 127) prior to interaction. As long as they both continuously update their common understanding of what is being exchanged in the ongoing conversation (termed *grounding*), they are communicating effectively.

There are many means by which speakers and listeners collaborate on process and content in conversations. When the speaker produces an utterance, the listener can respond in two ways. First, the listener may confirm the utterance by repeating or partially repeating the statement (Schegloff, Jefferson, & Sacks, 1977; Tannen, 1987a, 1987b, 1989b), or by issuing a "yeah," or "ok," or a headnod (Goodwin, 1981; Schegloff, 1997; Schegloff et al., 1977). In this case, the speaker may decide to issue a new utterance or ask a question to further confirm understanding, depending on whether the listener's response is taken as understanding or nonunderstanding. Second, the listener may use question words such as *what, who, where, when,* and *I beg your pardon* (Sacks, Schegloff, & Jefferson, 1978; Schegloff et al., 1977) to request the speaker to elaborate, paraphrase, reformulate, clarify, repeat, or partially repeat what was just said. Schegloff et al. (1977) described the purpose of these requests as "repairing the repairable" (p. 363). Depending on how satisfied the listener is with the response by the speaker follow-

ing a clarification request, the listener may let the speaker get on to the next utterance by indicating understanding, or he or she may ask for further explanations (Clark & Schaefer, 1989a).

In some cases, the speaker may request further evidence of understanding from the listener even after the latter has said "Okay." Each time both the speaker and listener reach a mutual acceptance phase regarding understanding of a piece of information, it is said that they have made a contribution to their total pool of information communication (Clark & Schaefer, 1989a). According to Clark and Schaefer, each contribution contains at least three steps:

(a) A presents *u* for B to consider.
(b) B accepts *u*.
(c) A accepts that B accepts *u*.
During the presentation phase, A places her utterance *u* into consideration. During the acceptance phase, B needs to accept *u* in a unilateral acceptance. For mutual acceptance, however, A must accept that B has actually understood. The acceptance phase includes both part *b* and part *c*.
To accept *u,* B must believe he understands what A meant by *u* (to a criterion sufficient for current purposes). He faces many potential obstacles to his belief. He may not have noticed A had uttered anything. Even if he had noticed it, he may not have heard all or part of it. And even he had heard it, he may not have understood all or part of it. (p. 127)

The mutual acceptance phase may take two or more turns depending on whether negotiations are needed. The mutual acceptance phase is where grounding takes place. Depending on whether grounding is successful, a contribution may or may not be made even though the speaker may have made the presentation and the listener may have initiated the grounding. Consider the following exchange between speaker (A) and listener (B):

A: I had chest pain yesterday.
B: Okay.
A: I was swimming, no . . . I was in the hot tub. I can't swim.
B: So you said the onset was when you were swimming or in the hot tub?
A: (ignores and changes subject)
      (several turns later, the listener initiated the unfinished grounding again, but the
      speaker ignored the question again).
B: Um, you say this time it occurred when you got back from the . . . pool or hot tub?
A: (ignores and changes the subject).

For information to be transmitted successfully, both presentation and grounding need to be successful. As indicated in the preceding exchange, the listener was never sure if the speaker meant the swimming pool or the hot tub. Thus, the communication was not successful even though the presentation was. For grounding

to be successful, the speaker and listener must strive to reach a mutual criterion. *Grounding criterion* (Clark & Schaefer, 1989a) is defined as "the speaker and addressees mutually believe that the addressees have understood what the speaker meant to a criterion sufficient for current purposes" (p. 125). The following exchange contains a successful grounding:

A: Oh, after swimming yesterday, my chest was in pain.
B: Uh.
A: Three years ago I got the chest pain.
B: Three years ago?
A: Yeah, three years ago.
B: I thought you said it started yesterday?
A: In the last three years I haven't suffered any chest pains . . .
B: . . . oh, until yesterday?
A: Yeah.

In this exchange, both presentation and grounding were successful, although it took several turns and a near misunderstanding.

Conversational grounding has been found to be a central process in various forms of discourse such as in exchanges between a caller and a telephone operator (Clark & Brennan, 1991; Clark & Schaefer, 1987, 1989), between two persons who have a common task at hand (Clark & Wilkes-Gibbs, 1986; Isaacs & Clark, 1987; Schober & Clark, 1989; Wilkes-Gibbs & Clark, 1992), and in everyday conversations (Clark & Brennan, 1991; Clark & Schaefer, 1989a). Furthermore, conversational grounding has been found to facilitate listener understanding (Schober & Clark, 1989). In two experiments, Schober and Clark demonstrated that listeners (referred to as *addressees*) who participated in the conversations understood the content of the conversations better than those (referred to as *overhearers*) who did not participate in the interactions. One important reason, proposed by these researchers, was that addressees can coordinate actively with speakers in reaching an understanding of the content, whereas overhearers were not provided with such an opportunity. Moreover, participants' high level of involvement in conversations have been reported to be associated with more active information processing (Cegala, 1981, 1984) and message production (Chen, 1995).

In summary, findings of past research strongly indicate that interlocutors who coordinate more in process (more grounding) were also more successful in communicating the content. To extend this theme, this study predicted that there would be a positive association between the amount of grounding and information correctly recalled by the listener in both intracultural and intercultural conversations, both collectively and respectively (Hypothesis 1). Conversely, dyads who failed to collaborate in their conversational process would experience more misunderstandings or nonunderstandings (Gass & Varonis, 1991; Hirst, McRoy, Heeman, Edmonds, & Horton, 1994; Milroy, 1984; Sarangi, 1994; Thomas, 1983).

Participants chosen for this study were 40 Canadians whose first language was English and 40 Chinese whose first language was Mandarin Chinese and who grew up in China. The study was conducted in a laboratory setting with an assigned topic. All conversations were videotaped. Immediately after the interaction, all listeners were requested to write down the major points of the conversation (see Appendix A). Using the same scoring standards (see Method section for details), the contents recalled by the listener and the contents presented by the speaker (which were videotaped) were scored. The amount of information correctly recalled by the listener was established by comparing the amount of information presented by the speaker. Grounding scores of each dyad were determined by following scoring standards for grounding (see Method section for more detail), which were mainly based on Clark and Schaefer's (1989a) grounding criterion as described previously. One point in grounding score equals a complete contribution that contains at least the following three phases as summarized by Roberts and Bavelas (1996, p. 142): Utterance, Reaction, and Confirmation.

The nature of the conversations in this study resembled physician–patient face-to-face interactions. The rationale for studying medical interviews rather than other types of communication was that among other difficulties immigrants faced, the inability to communicate with health professionals seemed prominent (Lai & Yue, 1990; Li, 1992; Stephenson, 1991; Woon, 1986). According to findings of a recent health survey in a randomly selected sample of 224 Chinese immigrants in the province of British Columbia, Canada, miscommunication with health professionals of the mainstream culture was identified as a major health problem that had an impact on every other aspect of their life in Canada (Li, 1992). This was true even for the 77% who rated their English as "fluent" or "fair" (Li, 1992). Similar findings, that most of their problems were related to their inability to communicate accurately and meaningfully with Canadians of the mainstream culture, were reported among Vietnamese immigrants in Victoria, British Columbia, Canada (Stephenson, 1991).

The rationale for choosing simulated physician–patient conversation instead of real physician–patient interaction was that in the latter, it would be impossible to use exactly the same conversation topic for all dyads. It would therefore be very difficult to measure and compare the amount of information communicated among dyads.

COMPARING THE AMOUNT OF GROUNDING IN INTERCULTURAL AND INTRACULTURAL GROUPS

Hypothesis 2 predicted that in their conversations, intercultural dyads (Chinese speaker/Canadian listener and Canadian speaker/Chinese listener) would engage in less grounding than intracultural dyads (Canadian/Canadian and Chinese/Chinese). Past research has found that effective communication is more difficult to achieve in intercultural conversations than in intracultural settings. Experiments have demonstrated that even when the second-language speaker has sufficient language capac-

ity to participate in a conversation, intercultural communication is not as successful as intracultural communication in terms of the amount of information transmitted from the speaker to the listener (Li, 1994, 1995). Data gathered from natural conversations by Tannen (1981), Gumperz (1978, 1992), Erickson (1975), and Gass and Varonis (1985) offer ample evidence of miscommunication among native–nonnative speakers in situations in which language is not the main barrier. To explain this phenomenon, Chen (1996) pointed out that intercultural interactants lack the shared background knowledge that is essential for effective interactions. Although intracultural interlocutors may differ in background knowledge, the magnitude of knowledge gaps between intercultural interactants is usually much larger.

Gudykunst (1994) asserted that miscommunication in intercultural interactions occurs often due to ignorance of conversational rules, not a lack of linguistic knowledge per se. Similar observations have been made by Taylor and Simard (1975), who studied French–English Canadian interaction, and by Gumperz (1978), who studied Indian and Pakistani immigrants interacting with native British. Tannen (1981) observed that in Greek–American conversations, miscommunication was a result of conversation style differences. Scollon and Scollon (1995) researched Asian–North American interactions and concluded that most miscommunication stemmed from differences in patterns of discourse.

Due to the differences in their culturally shared knowledge, beliefs, assumptions (Argyle, Henderson, Bond, Lizuka, & Contarelo, 1986; Bond, 1991; Kim, 1989; Triandis, Bontempo, Villareal, Asia, & Lucca, 1988) and communicative norms, rules, and styles (Gumperz, 1992; E. T. Hall, 1976; Pierson & Bond, 1982; Tannen, 1981; Ting-Toomey, 1988), intercultural interactants typically experience a high level of uncertainty and anxiety (Gao & Gudykunst, 1990; Gudykunst & Kim, 1997; Gudykunst & Ting-Toomey, 1988). If nonunderstanding or misunderstanding is questioned or admitted, this high level of anxiety is often developed to a fear of losing face (Brown & Levinson, 1978; Norrick, 1991; Scollon & Scollon, 1981, 1995; Ting-Toomey, 1988). As a result, culturally different individuals are often less successful in managing interaction than interlocutors who share similar cultural backgrounds (Gumperz & Roberts, 1991). Instead of doing more grounding than intracultural communicants, they tend to do less, and this is the essence of Hypothesis 2. Although conversational grounding facilitates information communication (Hypothesis 1), and intercultural dyads need to engage in more grounding to communicate more effectively, they, nevertheless, would do the opposite due to cultural barriers.

METHOD

Participants

Eighty students from a Western Canadian university participated in the experiment in 1993. Among the 80 participants, 40 were mainland Chinese and 40 were English-speaking Canadians. Of the 80 participants, 40 were men and 40 were

women. Care was taken to ensure that the Chinese participants had sufficient English-language ability (Li, 1994), as measured by peer evaluation and self-evaluation, and referenced by scores on the Test of English as a Foreign Language, to participate in the conversations.

Experimental Design and Procedures

A between-subjects design was used for the four experimental conditions: Canadian/Canadian, Chinese/Chinese, Canadian speaker/Chinese listener, and Chinese speaker/Canadian listener. Depending on the time of their availability, participants were paired with either a partner from their own culture (Canadian/Canadian or Chinese/Chinese) or somebody from a different culture (Canadian/Chinese or Chinese/Canadian). All dyads were same gender; that is, men were paired with men, and women were paired with women.

All dyads (10 in each of the four experimental conditions) engaged in the same communication task, which involved simulating a doctor–patient interview. The speaker (patient role) was given a simple case history (see Appendix B) to memorize. During the experimental session, the speaker presented the case history to the listener (doctor role). The case history was developed in Chinese, translated into English, and then translated back into Chinese to check for accuracy (Li, 1994). The Chinese/Chinese condition used the Chinese version, and the other three conditions used the English version.

Upon arrival to the laboratory, and after the role of a speaker or a listener was randomly assigned by a draw, the speaker was given sufficient time to study the case history. Then a multiple-choice test (as a manipulation check) was given to the speaker to ensure that he or she had mastered the content. Meanwhile, the listener was given a list of information that he or she should get from the speaker during the conversation (see Appendix C). The list of information was relevant to a doctor–patient interview in general (e.g., what the exact problem was, whether the patient had a previous occurrence of the problem), not specific to the content of the case history. The listener was also instructed to ask the speaker any questions during the conversation. The dyads were then instructed to engage in the conversation in a "talking manner." To prevent pure memory errors, the speaker was allowed to refer to the information sheet while engaging in the conversation, but was not permitted to read from it word for word. After this role playing, the listener completed an open-ended test designed to examine how much information was successfully communicated from the speaker to the listener. All conversations were videotaped with the informed consent of the participants. The average time for participants to finish the conversation was 329 s across conditions. The mean times were 288, 316, 322, and 392 s in the Canadian/Canadian, Chinese/Chinese, Chinese speaker/Canadian listener, and Canadian speaker/Chinese listener conditions, respectively. An analysis of variance (ANOVA) revealed that these times of conversations were not significantly different, $F(3, 36) = .85$, $p > .05$; $MSE = 23,050$ s.

Scoring of Grounding

The operational definition of *grounding* for this study was any verbal activity by the listener or the speaker that would cause a previously elicited unit of information to be repeated, partially repeated, paraphrased, explained, confirmed, or clarified by reformulating or repairing. These activities must be completed in at least three phases: utterance, reaction, and confirmation (Roberts & Bavelas, 1996, p. 142). The first two phases had to be verbal (utterances), but the last phase could be either verbal or nonverbal (e.g., a headnod).

Based on the operational definition of grounding, the following scoring guidelines were developed for scorers to follow. Scorers were instructed to assign 1 point of grounding for each turn sequence that includes the three phases of utterance, reaction, and confirmation (Roberts & Bavelas, 1996, p. 142), and which also meets the following criterion: (a) must be content related, that is, the information in question must correspond to content in the open-ended tests (see Appendix A); (b) must involve participation by both speaker and listener; (c) must be a verbal activity that causes a *previously elicited* unit of information to be repeated, partially repeated, paraphrased, explained, confirmed, or clarified by reformulating or repairing; (d) the first two phases, utterance and reaction, must be verbal, but the third phase, confirmation, can be either verbal or nonverbal (e.g., a headnod); (e) can take place within one speech turn or several turns; and (f) only successful grounding was to be scored. Unsuccessful grounding (i.e., initiated, but not completed or abandoned; Schegloff, 1997) should be excluded.

Smiles, gazes, and hand gestures.   Due to their high frequency and doubtful role in the conversation, smiles were not scored. Gazes were not scored because camera angles did not permit a clear picture to indicate the direction of gazes. For example, it was difficult to distinguish between a gaze at the partner or a gaze at nothing but in the direction of the partner. Hand gestures were noted in all dyads but not scored.

Headnods and back-channel responses.   Headnods and back-channel responses such as *uhs* were included only when they synchronized with a specific verbal utterance, and they appeared in the third phase, confirmation, as opposed to the utterance and reaction phases. In other words, headnods were not scored if they were judged to appear randomly in the exchanges.

Table 1 contains samples of the types of grounding obtained from the videotaped conversations. In all examples, A refers to the speaker and B is the listener.

Inter-scorer reliability.   Before scoring the data, scorers received a training session with the following instructions: (a) "read the criteria at least twice"; (b) "watch the tape while reflecting on scoring criteria"; (c) "score the first time by watching the tape and listening to the dialogue"; and (d) "score the second time by listening to, but not watching, the tape so you can just concentrate on the conversations."

TABLE 1
Types of Grounding

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1. Listener seeks clarification
   B: That's the night before you went swimming? . . . um . . . right, you slept very well, the night before?
   A: The night after.
   B: Oh, the night after.
   A: Okay.
   B: So you slept well the night after you went swimming or before?
   A: No, the night after.
   B: Oh, the night after, Okay.
2. Self- or other-repair
   B: You did not go in the water?
   A: No.
   B: So you weren't really swimming?
   A: I can't swim.
   B: Oh, Ok.
   (Another subject and several turns later, the listener returns to the same subject)
   B: You were swimming yesterday?
   A: No, I didn't go in the water.
   B: So you weren't swimming?
   A: Yeah (the Chinese "Yeah" meant "no" here).
   B: So you were just on the beach and . . .
   A: Yeah. (This time "Yeah" meant "yes").
3. Listener recapitulates what the speaker just said
   B: About three years ago . . . uh . . . is that correct?
   A: Uh . . . (still processing B's question)
   B: So that was about three years ago? Is that what you said?
   A: (Headnods).
4. Listener confirms by questioning
   B: You said that you had chest pains three years ago, and you took some codeine?
   A: Yes. I took some codeine and it worked.
   B: Oh. I see.

Note.   A = speaker; B = listener.

Following the training session, three people independently scored the video-taped conversations. The interscorer reliability (Pearson correlation) was between .91 and .93. In scoring the data, scorers were asked to write down all identifying details of the grounding information including the provider and the exact time (minute and second) it occurred.

Scoring of Listener Recall and Speaker Presentation

An answer key was developed for the test of the listener recall (Li, 1994). This key consisted of 10 open-ended questions for a total of 56 points. Questions 1 through 5, 7, and 8 were each assigned 4 points; Question 6 was assigned 12 points, and Questions 9 and 10 were each assigned 8 points. The points for each

question were allocated on the basis of the number of information units (Li, 1994, 1999). The smallest meaningful string of words was the unit of analysis (Bales, 1950; J. A. Hall, Irish, Roter, Ehrlich, & Miller, 1994; Roter, 1977; Roter & Hall, 1992). Each unit of information was worth 4 points. Some questions required answers containing one unit of information, whereas others contained several units of information. Thus some questions were valued 4 points, and others were as high as 12 points. For example, the answer to Question 1, "Why did the patient come to see you?," only contained one unit of information: chest pains. In contrast, answers to Question 2, "What other diseases does the patient have, and how does it affect the patient's daily life?," contained three units of information: "arthritis, can't walk very far, can't walk up the stairs in my house."

For each question, one or several correct answers were provided in the answer key (Li, 1994). If the answer was essentially identical to the key, it was scored as 4. If the answer was very close to the correct answer, it was scored as 3. If the answer was related to the correct answer (e.g., describing but not naming), it was scored as 2. If the answer was remotely related to the correct answer in that the meaning could be inferred, it was scored as 1. Blank or wrong answers were scored as 0. A scale of 0 to 4 allowed the scorer to assign appropriate scores to the range of answers given. For example, Question 7 in the test was "What was the main reason the patient went swimming?" If the answer was "the reason the patient went swimming was to exercise his or her legs" or "to exercise his or her legs," it was scored as 4. If the answer was "swimming is good for his or her legs," it was scored as 3. If the answer was "to do exercise because the patient has difficulties walking," it was scored as 2. If the answer was "for exercise or to stay fit," it was scored as 1.

The same scoring standards were applied to score the speaker presentation from the videotaped conversations. Identical training sessions were repeated each time scorers started a new task. Interscorer reliability was between .98 and .99 for the listener recall test and between .94 and .98 for speaker presentation.

RESULTS

Scores for grounding, listener recall, and speaker presentation were prepared in the four conditions (Canadian speaker/Canadian listener, Chinese speaker/Chinese listener, Chinese speaker/Canadian listener, and Canadian speaker/Chinese listener). The unit of analysis in each group was the dyad rather than individual speakers or listeners because conversation is a joint activity between conversational partners.

Grounding and Listener Recall: Testing Hypothesis 1

Hypothesis 1 predicted that the amount of grounding would be positively correlated with listener recall scores in all experimental conditions (Canadian/Canadian, Chinese/Chinese, Chinese speaker/Canadian listener, Canadian speaker/Chinese listener), first collectively, then respectively. To test this hypothesis, two levels of

analyses were performed. The relationship between grounding and listener recall was first analyzed for all dyads and then analyzed for each group.

Grounding and listener recall for all dyads.   To analyze the relationship between grounding and listener recall for all dyads, a scatter plot of the two sets of scores was performed and a noticeable positive trend was observed. Pearson correlation showed a significant correlation between recall and grounding scores, $r(40) = .46, p < .005$. Hypothesis 1 was strongly supported in that grounding and listener recall were positively correlated for all dyads combined.

Grounding and listener recall for each group.   To analyze the relationship between grounding and listener recall for each group individually, two steps were taken. First, scatter plots of grounding and listener recall scores were performed for each of the four groups. The patterns of the scatter plots for Canadian/Canadian and Chinese speaker/Canadian listener conditions showed noticeable linear relationships. The scatter plots for the Chinese/Chinese and Canadian speaker/Chinese listener conditions showed no discernible patterns.

Second, Pearson correlations were calculated for all four groups. Grounding and listener recall scores were highly correlated in the Chinese speaker/Canadian listener condition, $r(10) = .77, p < .01$. The correlation between grounding scores and listener recall scores was statistically significant for the Canadian/Canadian condition, $r(10) = .47, p < .05$. However, no correlation was found in the Canadian speaker/Chinese listener condition, $r(10) = .01, p > .05$, and the Chinese/Chinese condition, $r(10) = .21, p > .05$.

Thus, Level 2 of the analyses for Hypothesis 1 that grounding would be positively correlated with listener recall in all four groups respectively was strongly supported in the Chinese speaker/Canadian listener condition and moderately supported in the Canadian/Canadian but not in the Chinese/Chinese and Canadian speaker/Chinese listener conditions. Figure 1 presents more detailed patterns of listener recall scores in relation to grounding scores for each of the four conditions.

Comparing Grounding Scores in Intercultural and Intracultural Conditions: Testing Hypothesis 2

Table 2 shows the mean scores for grounding, listener recall, and speaker presentation in the four conditions. Hypothesis 2 predicted that in their conversations, dyads in the two intercultural conditions would engage in less grounding than dyads in the two intracultural conditions. To test this hypothesis, we first assume that there would be no significant difference between the two intracultural conditions regarding their grounding scores (Assumption 1), and there would be no significant difference between the two intercultural conditions regarding their grounding scores (Assumption 2).

To test Assumption 1, planned comparisons were made, at $\alpha = .05$, to contrast the mean scores. The results showed no statistically significant difference between the two intracultural conditions in terms of their grounding scores, $F(1, 36) = 1.1, p >$
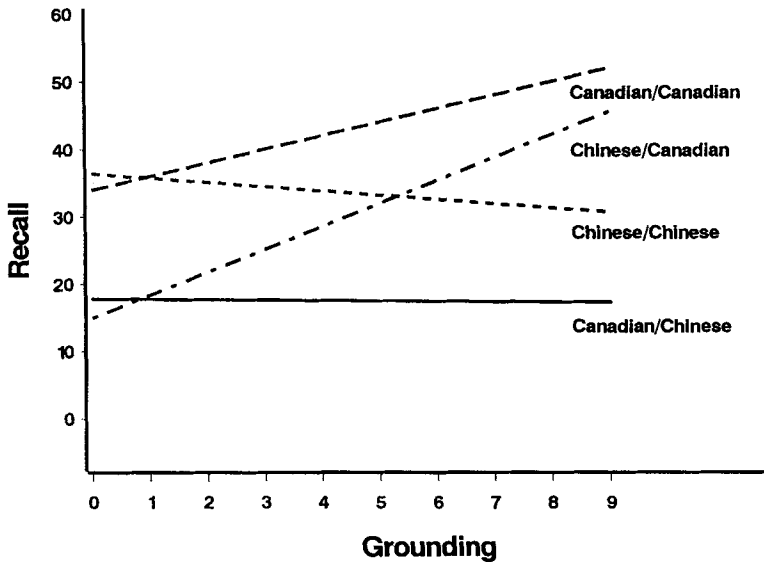
FIGURE 1   Listener recall as a function of grounding in each of the four groups.

TABLE 2
Mean Scores of Grounding and Listener Recall by Condition

Condition (Speaker/Listener)	n	Grounding		Listener Recall		Speaker Presentation	
		M	SD	M	SD	M	SD
Canadian/Canadian	10	2.9	1.9	39.8	8.2	50.4	4.8
Chinese/Chinese	10	3.8	1.8	34.0	5.6	45.2	10.1
Chinese/Canadian	10	3.6	2.6	27.2	11.8	43.6	10.7
Canadian/Chinese	10	1.8	1.0	17.7	7.2	43.6	10.7

Note.   n represents the number of dyads. All dyads were same gender; men and women were even-ly distributed in all conditions.

.05, $MSE = 3.8$; $\eta^2 = .06$. A η^2 of .06 showed that the distance between the two sample means was only .06 standard deviations, which is considered small (Cohen, 1977, 1992), thus providing further confidence in supporting Assumption 1.

An ANOVA was used to test Assumption 2, that there was no statistical significant difference between the two intercultural conditions in terms of their grounding scores. However, there was a significant difference between the two intercultural conditions regarding their grounding scores, $F(1, 36) = 4.3$, $p < .05$, $MSE = 3.8$. Thus, Assumption 2 was not supported. The Canadian speaker/Chinese listener condition engaged in significantly less grounding than the Chinese speaker/Canadian listener condition.

To test Hypothesis 2, that dyads in the two intercultural conditions would engage in less grounding than dyads in the two intracultural conditions, planned comparisons were performed. Results of the planned comparisons showed that the difference between the two intercultural conditions (Chinese speaker/Canadian listener and Canadian speaker/Chinese listener) and the two intracultural conditions (Canadian/Canadian and Chinese/Chinese) was not statistically significant, $F(1, 36) = 1.1, p > .05, MSE = 3.8$. The means of grounding scores for the two intercultural and intracultural conditions were 2.7 and 3.4, respectively. Hypothesis 2 was not supported by the data.

A check of the grounding data indicated that of the total grounding scores of the 40 dyads, only 4.5% (5 out of 111) were initiated by the speaker and completed by the listener. The vast majority (95.5%) were initiated by the listener and completed by the speaker.

Listener Recall and Speaker Presentation Scores

The group mean scores for listener recall and speaker presentation are shown in Table 2, columns 2 and 3. Both sets of scores were obtained based on the same scoring standards. Although the speaker presentation scores were relative to the script (see Appendix B), the listener recall scores were relative to the amount of information presented by the speaker. All listeners were asked the same questions (see Appendix A) in the written test immediately after the conversation. Only information presented by the partner was scored for a specific listener.

The means of listener recall scores for the two intercultural and intracultural conditions were 22.4 and 36.9, respectively—a difference that was statistically significant, $F(1, 38) = 24.7, p < .0001; MSE = 84.7$. The means of speaker presentation scores for the two intercultural and intracultural conditions were 43.6 and 47.8—a difference that was not statistically significant, $F(1, 38) = 2.02, p > .05; MSE = 87.8$. These results indicate that the speakers in the intercultural and intracultural conditions presented similar amounts of information, whereas listeners in the intercultural conditions recalled significantly less information than listeners in the intracultural conditions (for more detail, see Li, 1999).

DISCUSSION

The data provided strong support for Hypothesis 1 at Level 1, that the amount of grounding would be positively correlated with listener recall scores in all experimental conditions *combined*. The data also provided partial support for Hypothesis 1 at Level 2, that the amount of grounding would be positively correlated with listener recall scores in all experimental conditions respectively. It was found that grounding and listener recall scores were highly correlated in two of the four experimental conditions: Canadian/Canadian and Chinese speaker/Canadian listener interactions.

These significant positive correlations between grounding and listener recall scores indicate that the more dyads engaged in grounding activities, the better they communicated the information from the speaker to the listener. These findings strongly support Schegloff's (1982, 1997) assertion that discourse is an interactional achievement. The more interlocutors interact in the conversation processes, the better they convey the content. Effective communication does not solely depend on the amount of prior common ground among interlocutors; rather, it relies on how much common ground interactants establish in the communication process. Dyads who engaged in more grounding communicated more effectively regardless of the amount of prior common ground, thus documenting that grounding facilitates human communication in both intracultural and intercultural conversations.

These results are also consistent with Clark and Schaefer's (1987) finding that listeners (addressees) who actively participated in the conversation understood better than those (overhearers) who did not, and with Shea's (1994) observation that how participants engage themselves in the conversation process critically influences the success in native–nonnative interactions. By asking questions, the listener demands the speaker to attend to (Clark & Brennan, 1991), accommodate more (Bell, 1984; Giles & Franklyn-Stokes, 1989), and engage more in the conversation (Norrick, 1991), rather than just presenting the information. By responding to the responses of the listener, the speaker is taking extra steps to ensure that the listener understands the meaning of the information as intended. Together, the speaker and listener monitor and update their common background as the conversation proceeds (Clark & Brennan, 1991). By doing this, the speaker and the listener, regardless of the amount of shared prior common ground, build up a common ground as the conversation progresses, thus making their communication more effective.

On the other hand, a discourse in which interlocutors have little collaboration leaves the listener to interpret the information unilaterally (Roberts & Bavelas, 1996). As meaning in discourse is negotiated between the speaker and listener (Roberts & Bavelas, 1996), when collaboration does not occur, misinterpretation and miscommunication follow. Thus, the amount of information correctly recalled by the listener is significantly less between the less cooperative dyads than the more cooperative dyads. To reduce miscommunication in content, these findings suggest that interlocutors should make a conscious effort to increase the amount of collaboration in the process of interaction. This principle applies to both intercultural and intracultural discourse.

The Chinese/Chinese Condition

The Chinese/Chinese dyads achieved high scores on both listener recall and grounding, but the two sets of scores are not correlated. There are two logical explanations for this puzzling but intriguing phenomenon. First, the grounding activities are rhetoric. They are not a means to content transmission; rather, they serve to lubricate the wheels of conversations (Tannen, 1989a). Second, there is a relationship between

the amount of grounding and listener recall but through intermediate variables that were not measured in this study. For example, when viewing the videotapes, the researcher observed high frequencies of smiling, nodding, and back-channelling in all four experimental conditions. She noted one nonverbal behavior that marked the Chinese/Chinese conversations different from other experimental conditions, especially from the Canadian/Canadian condition. The Chinese/Chinese interactions were more process oriented, whereas the Canadian/Canadian conversations were more task oriented. Somehow, through the tone of voice, the Chinese were able to convey the message that they care about and value a good rapport with their partner. Yamada (1990), Murata (1994), and Mizutani (1988) observed similar conversational behaviors among native Japanese. They found that the Japanese consider the relationship with their conversational partners to take precedence over information transmission. By maintaining a good rapport with each other, the Japanese were usually successful in communicating the information. If this phenomenon holds true with the Chinese/Chinese conversations, one would argue that grounding may be associated with listener recall through an intermediate variable: perceived relationship with the conversation partner. An important implication for future research is to move beyond the study of a direct relationship between verbal grounding and information transmission to examining a more complex picture of human communication, which includes nonverbal grounding and cognitive processes.

Hypothesis 2 and the Canadian Speaker/ Chinese Listener Condition

Although the data provided no support for Hypothesis 2, that intercultural dyads would engage in less grounding than intracultural dyads, it leads to new insight into intercultural communication. One intercultural group (Chinese speaker/Canadian listener) engaged in significantly more grounding activities than the other intercultural group (Canadian speaker/Chinese listener). Contrary to previous beliefs that all intercultural groups are equally problematic in managing interaction, this finding indicates that some experience more difficulties than others, depending on who the listener is. When the first-language user serves as the listener and the second-language user serves as the speaker (e.g., Chinese speaker/Canadian listener), they seem to manage interaction better than when the second-language user serves as the listener and the first-language speaker serves as the speaker (e.g., Canadian speaker/ Chinese listener). This finding indicates that problems occur when the second-language user serves as listener and the first-language user the speaker because it is the listener, not the speaker, who decides whether to ground. This argument is supported by another finding—that the majority of the grounding activities (95%) is initiated by the listener. Day, Chenoweth, Chun, and Luppescu (1984) and Norrick (1991) reported similar findings. They observed that in native–nonnative interactions, the native usually takes the role of repairing or correcting errors, not the nonnative. When the nonnative is the listener, interaction becomes scarce.

There are two possible explanations for this phenomenon. First, the nonnative person may not be aware of the problem and therefore does not initiate grounding. Second, the nonnative person may not initiate grounding due to cultural barriers (e.g., fear of losing face) when experiencing nonunderstanding or misunderstanding. These discussions bear two practical implications for intercultural communication, especially when the nonnative plays the role of the listener. First, the nonnative listener may require more awareness that miscommunication is more likely to occur in intercultural communications than in intracultural communication (Erickson, 1975; Gass & Varonis, 1991; Gumperz, 1978; Li, 1999; Tannen, 1981). Second, the nonnative listener may require training to interact more (e.g., learning to ask more clarifying questions) in the conversation process to communicate more effectively.

Despite the fact that intercultural interlocutors start with little prior common ground, it may still be possible for them to understand each other in a conversation. In other words, effective communication in intercultural interaction may be attainable through extra effort—asking each other clarifying questions and repeating the information in various ways when understanding is in question.

Additional Observations

In addition to the previously mentioned findings, I have also noticed two interesting phenomena in the data: (a) when Chinese persons serve as listeners (in the Chinese/Chinese and Canadian speaker/Chinese listener conditions), grounding activities were not correlated with listener recall scores; and (b) when Canadian persons serve as listeners (in the Canadian/Canadian and Chinese speaker/Canadian listener conditions), grounding and listener recall scores are highly correlated. This observation seems to indicate a cultural difference between Chinese and Canadians regarding the meaning of their grounding activities. Chinese listeners interact for the sake of interacting (e.g., building rapport), whereas Canadian listeners interact for the sake of transmitting content.

CONCLUSION

To conclude, this article contributes to the field in that it examines the function of grounding in relation to information communication using quantitative means. By doing so, this study illustrated, specified, and expanded the theory of conversational grounding by identifying the role of grounding as a facilitator of listener information recall in all experimental conditions collectively, as well as in one intracultural and one intercultural condition individually. These results lead to an optimistic assertion that effective communication among human beings, including those who do not share the same language and cultural backgrounds, may be attainable through extra effort—"establishing a mutual understanding of what is being said moment by moment" (Clark & Brennan, 1991, p. 128).

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APPENDIX A
Questions on the Recall Test

When answering the following questions, please provide as many details as you can. That is, write down anything relevant to the questions.

1. Why did the patient come to see you?
2. When did the patient's symptoms start?
3. How did the patient sleep last night?
4. What other disease does the patient have, and how does it affect the patient's daily life?
5. What was the main reason the patient went swimming?
6. When (how many years ago) did the patient have similar symptoms before?
7. When the patient had similar symptoms before, what was done?
8. According to the patient, what did his/her mother die of?

—Please write down anything else you want to add.

APPENDIX B
Speaker's Script: A Case History

Reason for Visiting the Physician: chest pains.

Starting Time: yesterday afternoon.

Description: Last week I went swimming and I felt fine. Actually I can't swim very well. I just go there and sit in the hot tub most of the time. When I got back from swimming yesterday I felt strong chest pains. Last night, I slept OK. I woke up a few times from my chest pain. I usually sleep very well, even a thunderstorm can't wake me up. Yesterday evening, I didn't feel like eating very much. I only had a bowl of soup. I am scared to death. I remember that a friend of mine had a daughter who died of chest pains after swimming. The cause of her death was unknown.

Other Disease: Besides chest pains, I have arthritis. I can't walk very far. Last time I took a walk to the park, which is close to my house, I had to sit down to take a rest before I could walk back. I was very tired when I got back. I can't walk

up the stairs in my house either. In fact, the reason I went swimming was to exercise my legs.

Previous Complaints: Three years ago, I had chest pains. I took some codeine and it worked. After a while, I was fine. I did not go to see a doctor; I didn't have the time. I was working from 7:30 in the morning till 4:30 in the evening in a Chinese food store.

Family History: My mother also suffered from chest pains. She died in 1982. But I don't think she died of chest pain. She died of old age.

APPENDIX C
Instruction Sheet for Listener

So now you will play the role of a physician. In the following dialogue, your patient will tell you his or her case history. Make sure that the information you get from your patient covers the following aspects:

1. What the exact problem is;
2. When the problem started, and in what circumstances the problem occurred;
3. What the general health condition of the patient is (e.g., appetite, sleep, and exercise);
4. What other diseases the patient has and details of the diseases;
5. Whether the patient had a previous occurrence of the problem, and when it occurred and what was done about it;
6. What the family history is (e.g., whether any family members have similar complaints, and what was the outcome).

Please read the above outline a few times and try to remember it (I suggest that you read it at least three times). You may ask your patient any questions you wish and you may phrase your questions anyway you like. You could start the conversation by saying "So, what seems to be the problem?"

I'll let you keep the Guideline. In case you get stuck, you may refer to it, but you can't read from it word-for-word.