COOPERATIVE AND INTRUSIVE INTERRUPTIONS IN INTER- AND INTRACULTURAL DYADIC DISCOURSE

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This study examined whether culture plays a role in the use of interruption in simulated doctor-patient conversations. Participants were 40 Canadians and 40 Chinese who formed 40 dyads in four experimental conditions: Canadian speaker-Canadian listener, Chinese speaker-Chinese listener, Chinese speaker-Canadian listener, and Canadian speaker-Chinese listener. All conversations were videotaped and microanalyzed. The data generated four findings: (a) In the Chinese speaker-Chinese listener interactions, cooperative interruptions occurred more frequently than intrusive interruptions; (b) when Canadians served as doctors, the doctors performed significantly more intrusive interruptions than cooperative ones; (c) the two intercultural groups engaged in more unsuccessful interruptions than the two intracultural groups; and (d) in the intercultural conditions, the occurrences of intrusive interruptions were greater than cooperative interruptions. This phenomenon provides unequivocal support for communication accommodation theory. The findings point to a hypothesis that conversational interruption may be a pancultural phenomenon, whereas interruption styles may be culture specific.

> "I am afraid I am interrupting you."
> "It does not follow that interruptions are unwelcome."
> —Jane Austen

E. T. Hall's (1959) saying that "culture is communication" and "communication is culture" (p. 169) crystallizes the intricate relationship between culture and communication. People communicate according to their cultures' dictation (Crago & Eriks-Brophy, 1992; Gumperz, 1982; Hymes, 1974). In some cultures, the self-other relationship is construed as more interdependent or collectivistic, whereas in other

cultures, the self-other relationship is perceived as more independent or individualistic (Hofstede, 1980; Markus & Kitayama, 1991; Triandis, Bontempo, Villareal, Asia, & Lucca, 1988). To mirror culture in communication, the interdependent selves would send to fellow interlocutors signals of "solidarity" (Tannen, 1994), and the independent selves would exhibit linguistic cues to clearly mark their individual boundaries (H. Z. Li, 1999a, 1999b). Interruption, a communicative act, has been employed by conversationalists to either connote "cooperation" or "intrusion" (Goldberg, 1990; Kennedy & Camden, 1983; Murata, 1994; Ng, Brook, & Dunne, 1995), depending on the cultural contexts.

The main goal of this study was to examine whether culture plays a role in the use of interruption in conversations. For example, do collectivistic Chinese use interruptions differently from individualistic Canadians? When people of different cultural backgrounds converse, does one group accommodate (Bourhis, 1979; Giles, Bourhis, & Taylor, 1977; Giles & Johnson, 1987; Giles, Mulac, Bradac, & Johnson, 1987; Giles & Smith, 1979; Larsen, Martin, & Giles, 1977) to the interruption styles of the other? The target groups were Anglo-Canadians and mainland Chinese. A Chinese is either paired with another Chinese or with a Canadian, and a Canadian is either paired with another Canadian or with a Chinese.

In the following sections, research on the nature of interruption as well as on culture and interruption will be reviewed, followed by Hypothesis 1. Literature on intercultural communication and interruption will then be reviewed, followed by Hypothesis 2.

THE NATURE OF CONVERSATIONAL INTERRUPTIONS

According to Sacks, Schegloff, and Jefferson (1974), an ideal conversation is organized so that no interruption occurs. The coordination between the speaker and listener is perfect in that the speaker sends the right signals—verbal and/or nonverbal—to the listener when a turn change is due. The listener understands and takes the signals for a turn change. Any violation of the orderliness of this turn-exchange principle is considered a deep intrusion of the rights of the current speaker, as well as a severe disruption of the flow of the ongoing conversation.

Following this view, interruption has been found to be a power device, imposed on the interruptee by the interrupter (Ferguson, 1977; Jacob, 1974; Mishler & Waxler, 1968). Consequently, all interruptions are, without exception, considered power displays (Zimmerman & West, 1975), and conversation is a constant battle for control over the floor between interlocutors (Hawkins, 1991; Rogers & Jones, 1975).

This contention of equating interruption to power, control, or dominance has been contested (Beattie, 1982; Goldberg, 1990; Meltzer, Morris, & Hayes, 1971; Murray, 1987). A number of researchers have proposed a more balanced view of interruption (Beattie, 1981; Coon & Schwanenflugel, 1996; Ng et al., 1995; Tannen, 1981, 1994). Two broad types of interruptions have been identified—intrusive and cooperative (Murata, 1994)—although they are termed variably. For example, Goldberg (1990) differentiated interruptions as power and nonpower, Kennedy and Camden (1983) distinguished them as disconfirming and confirming, whereas Bennett (1981) preferred the terms conflicting and less conflicting. Ng et al. (1995) detected disruptive and supportive types of interruptions.

Kennedy and Camden (1983) videotaped conversations of six multiple-member groups in an American university. Of the 225 interruptions observed, about half functioned to confirm the speaker, and the other half were either disconfirming or rejecting of the speaker. Goldberg (1990) analyzed excerpts from a variety of sources and found distinct types of interruptions. One type, power interruption, was clearly intended by the interrupter to seize control of the process and/or content of the conversation by taking the floor and/or the topic from the current speaker at midutterance. Another type, rapport interruptions, facilitated the process and/or the content of the conversation by encouraging the speaker's ongoing talk.

In line with Goldberg's (1990) rapport interruptions, Tannen (1981) observed that in some situations frequent interruptions created high involvement among the conversational partners, thus promoting feelings of mutual interest, enthusiasm, and solidarity.

Ng et al. (1995) studied interruption patterns among six 4-person group conversations, two male-male, two female-female, and two mixed groups. They found that interruptions could be disruptive of the speech of the current speaker but not necessarily domineering over the speaker or the flow of the conversation. On the contrary, some interruptions serve to rescue or promote the current speaker, or elaborate on the content of the speech. In form, all interruptions may be disruptive. In essence, some interruptions are supportive of the current speaker and/or the flow of the conversation.

In summary, interruption could be power related (intrusive) or non–power related (cooperative), depending on the function it assumes in the context (Dunne & Ng, 1994).

CULTURE AND INTERRUPTIONS: HYPOTHESIS 1

Although there are two discernible types of interruptions, intrusive and cooperative, different cultural groups appear to use one type more often than the other. Mizutani (1988) observed that more cooperative than intrusive interruptions were performed when Japanese

conversed with each other. When the speaker talks, the listener tries to help. This phenomenon is called *kyowa*, which literally means "coproduce" or "cooperate." Interruption is a means for the cospeakers to achieve a "conversational duet." Hayashi (1988) found that cooperative interruptions were more frequent in conversations among Japanese than among Americans. Moerman (1988) observed that Thai conversationalists tended to interrupt each other for the purpose of coordinating on the process and content of a story.

This cooperative nature of interruption may reflect deep-rooted cultural norms and values in interpersonal relations (Crago & Eriks-Brophy, 1992). In Asian or collectivistic cultures, members

> see themselves as part of an encompassing social relationship and recognize that their behavior is determined, contingent on, and to a large extent organized by what the actor [actress] perceives to be the thoughts, feelings, and actions of others in the relationship. (Markus & Kitayama, 1991, p. 227)

When engaged in a conversation with other members, collectivists tend to use cooperative interruptions to demonstrate loyalty and solidarity. Interruptions are other oriented (e.g., helping a partner along) more than self-oriented (e.g., seizing a chance to talk).

On the other hand, in individualistic cultures in which an individual constructs the self "primarily by reference to one's own internal repertoire of thoughts, feelings, and actions" (Markus & Kitayama, 1991, p. 226), one may be more inclined to use intrusive interruptions. By using intrusive interruptions, one may express feelings of being different and self-assertive, qualities highly valued in individualistic cultures (Markus & Kitayama, 1991).

In view of Markus and Kitayama's (1991) independent-interdependent self-construals, Hypothesis 1 predicted that intrusive interruptions would be seen more frequently than cooperative interruptions in Canadian speaker-Canadian listener conversations (Hypothesis 1a). Conversely, cooperative interruptions would be seen more frequently than intrusive interruptions in Chinese speaker-Chinese listener interactions (Hypothesis 1b). The assumption for Hypothesis 1 was that Canadians are more individualistic and less collectivistic than Chinese. This assumption was based on two lines of evidences. First, in numerous studies (Bond, Leung, & Wan, 1982; Cheng, Bond, & Chan, 1995; The Chinese Culture Connection, 1987; Hofstede, 1980; C. Li, Kwan, & Bond, 1998), Canadians have been found to be more individualistic and less collectivistic than Hong Kong Chinese in spite of the fact that Hong Kong has been a British colony for a century and Hong Kong Chinese have been greatly exposed to Western influence. The Hong Kong participants in these studies were university students speaking fluent Cantonese and English.

Second, mainland Chinese have been found to be more collectivistic and less individualistic than Anglo-Canadians (H. Z. Li, 1998). In a sample of 170 Anglo-Canadians from a university in Western Canada and 225 Chinese from a university in Wuhan, People's Republic of China, significant differences were found on a number of individualistic-collectivistic measures. Mainland Chinese and Anglo-Canadians displayed consistent patterns of collectivism and individualism, respectively. The background of the Chinese in H. Z. Li's study and the current study was identical except that in the latter the Chinese were studying in Canada as international students at the time of the experiment (see Method section for details).

INTERCULTURAL CONVERSATION AND INTERRUPTIONS: HYPOTHESIS 2

Intercultural communication differs from intracultural interactions in that one participant speaks a second language and functions in a foreign culture (Erickson, 1975; Gass & Varonis, 1991; Gumperz, 1978; H. Z. Li, 1999a, 1999b; Tannen, 1981). Researchers have identified several fundamental difficulties in intercultural interactions. First, intercultural interlocutors are less successful than intracultural interactants in transmitting information from the speaker to the listener even when the second-language speaker has sufficient language capacity to participate in the conversation (H. Z. Li, 1999a). Second, intercultural communicants are less involved in the conversation than intracultural participants in terms of topic initiation (Chen, 1995) and process coordination (H. Z. Li, 1999b). Third, intercultural interactants experience high levels of uncertainty and anxiety (Gao & Gudykunst, 1990; Gudykunst & Ting-Toomey, 1988). Fourth, intercultural interlocutors are often observed to encounter style clashes with each other (Erickson, 1975; Gumperz, 1978; Pierson & Bond, 1982; Scollon & Scollon, 1981, 1995; Tannen, 1981).

These difficulties have been attributed to a lack of shared common ground (Clark & Brennan, 1991), which includes conversational rules (e.g., Gudykunst, 1991). Because humans converse according to culturally shaped rules for discourse (Labov & Fanshel, 1977), intercultural interlocutors are bound to display different conversation styles. Interruption, an essential element of conversation style (Erickson, 1975; Gumperz, 1978; Tannen, 1981), would pose an interesting challenge for intercultural interlocutors. For example, if one partner comes from an individualistic cultural background, the other from a collectivistic culture, and if the former uses mostly intrusive interruptions and the latter, cooperative interruptions, what would be the pattern of their interruptions? Whose interruption habit, the individualist's intrusive or the collectivist's cooperative, would they follow?

Murata (1994) reported that in Japanese-American dialogues, the Japanese participants tended to switch their usual interruption style (cooperative) to the more intrusive North American style when they were engaged in conversations in English. She found that the number of intrusive interruptions was higher in Japanese-American conversations than in Japanese-Japanese conversations. Bond and Yang (1982) and Gallois and Callan (1991) also observed that in native-nonnative interactions, the second-language speaker frequently switched to the speech style of the first-language speaker.

Ross and Shortreed (1990) had Japanese university students listen to 16 recordings of Japanese-American conversations and then asked them to rate their impressions of the Japanese participants. The code switchers, or Japanese who converged to the speech style of the Americans, were perceived as sophisticated, which is symbolic of high educational attainments.

The code-switching phenomenon was also reported by Ervin-Tripp (1964), who found that Japanese bilinguals used different speech styles when conversing with another Japanese or with an American. Gallois and Markel (1975) observed a code-switching tendency among Cuban bilinguals, who exhibited different turn-taking behaviors when talking with another Cuban in Spanish than when talking with another Cuban in English.

Communication accommodation theory (CAT) has provided a powerful explanatory framework for the code-switching phenomenon in intercultural communication. CAT states that interlocutors have a tendency to converge or diverge their linguistic codes either for power and/or desire for social approval (Giles et al., 1977; Giles et al., 1987; Giles & Johnson, 1987; Giles & Smith, 1979). Bourhis (1979, 1984) pointed out that in intercultural interactions, the minority group usually had less social and economic power than the majority; thus, the minority group would often switch to the linguistic code of the majority group. Giles, Taylor, and Bourhis (1973) demonstrated that speech convergence promoted mutual liking between Anglo- and French Canadian students. Anglo-Canadians perceived French Canadians more favorably if the latter switched to English and vice versa. In two studies, Genesee and Bourhis (1982, 1988) also found that Anglo-Canadians rated French Canadians more favorably if they switched to English when conversing with an Anglo-Canadian.

Conversely, the French Canadians rated Anglo-Canadians more favorably if they switched to French when conversing with a French Canadian. Based on CAT and its contingent literature, it was argued that Chinese participants in the present study would converge their interruption style to that of their Canadian interlocutors due to their wish to be accepted and/or their perceived subordinate social status.

Hypothesis 2 predicted that in intercultural communications (Canadian speaker-Chinese listener and Chinese speaker-Canadian

listener), interruption patterns would be similar to that in Canadian speaker-Canadian listener interactions but different from that in Chinese speaker-Chinese listener conversations. That is, intrusive interruptions would be seen more frequently than cooperative interruptions in both Canadian speaker-Chinese listener (Hypothesis 2a) and Chinese speaker-Canadian listener conditions (Hypothesis 2b).

The rationale for Hypothesis 2 was that the Chinese participants would switch interruption styles for two possible reasons. First, as international students studying in Canada, they wanted acceptance by Canadian students. Second, the Chinese participants had lower social status. Although Chinese students who could make it to Canada were a social and academic elite in their home country, they lost their position in society once they stepped on foreign soil. In view of the discriminatory treatment the Chinese have received in Canada throughout the past century (Berry & Kalin, 1995; Dion & Kawakami, 1996; Lai & Yue, 1990; P. S. Li, 1988; Reitz, 1980; Reitz & Sklar, 1997), it is likely that they would perceive themselves as socially, economically, and linguistically disadvantaged. Although both Chinese and Canadian participants were university students at the time of the experiment, the social status of the two groups was not equal. As noted by Bourhis (1979), the majority group (in this case, the Canadian students) would perceive themselves as having more social status than the minority group (in this case, the Chinese students). Therefore, the Chinese participants would converge their interruption styles to that of their Canadian interlocutors due to their subordinate social status and/or desire for acceptance.

COMPARING DOCTOR-PATIENT INTERRUPTION PATTERNS

Besides testing the two hypotheses stated above, interruption patterns of doctors and patients were also examined. Although numerous researchers have studied doctor-patient face-to-face interactions, few have examined interruption patterns per se. Krysko (1998) analyzed 36 audiotaped conversations between physicians and patients in a group family practice setting. The data were coded for intrusive and cooperative interruptions using the same schema as the present study. Doctors and patients had similar frequencies of intrusive and cooperative interruptions. Doctors interrupted to regulate the flow of the conversation, whereas patients interrupted to elaborate on their symptoms. Irish and Hall (1995) examined 50 videotaped interviews between doctors and patients in an ambulatory care center of a hospital. Results showed that patients interrupted physicians significantly more than vice versa. Patients' interruptions were characterized with statements, whereas doctors' interruptions were mostly questions.

Given the inconclusive findings of doctor-patient interruption patterns in past research, as well as the nature of the design of the current

study (i.e., simulated rather than real doctor-patient interaction), doctor-patient interruption patterns were examined in an exploratory fashion rather than a directive hypothesis.

In addition, communication convergence was also examined. According to CAT, participants with lower social status converge to the interruption style of the more powerful interlocutors (Bourhis, 1979, 1984; Giles et al., 1977). When applied to the current study, participants in the patient role would be expected to converge to the interruption style of participants in the doctor role. In a study of conversation styles between physicians and hospitalized patients in Canada, Bourhis, Roth, and MacQueen (1989) reported that doctors mostly used medical talk and patients used everyday language when they interacted with each other. In view of the speech maintenance tendency found in doctors and patients in Bourhis et al. (1989) and the particular experimental design of the present study (simulated medical conversations between and within cultural groups), the direction of convergence was left open to exploration.

METHOD

PARTICIPANTS

Eighty-four participants volunteered to participate in this study, of which 44 were males and 40 were females. The participants formed 42 same-gender dyads, 2 of which were dropped from data analysis because they did not follow the instructions. Participants were 3rd-year, 4th-year, or graduate students from the University of Victoria, Canada. The majority of the participants were in their 20s or earlier 30s, with an average age of 29.11. The mean ages for the Chinese and the Canadian participants were 30.00 and 28.22, respectively, with no significant difference, $t(78) = -1.90, p < .05$. Participants were solicited in classrooms, university cafeterias, and graduate students' offices in various departments at the University of Victoria.

Of the 80 participants, 40 were Chinese (20 males and 20 females) whose first language was Mandarin Chinese, and 40 were Caucasian Canadians (20 males and 20 females) whose first language was English. All Chinese participants grew up in mainland China and were studying at the University of Victoria. At the time of the experiment, the Chinese participants had been in Canada for an average of 27 months, the range being 0.5 to 60 months. Care was taken to ensure that the Chinese participants had sufficient English-language ability, as measured by peer evaluation and self-evaluation and referenced by scores on the Test of English as a Foreign Language (TOEFL) to participate in the conversations. All Chinese participants had a TOEFL score of 575 or greater (for details, see H. Z. Li, 1999a).

EXPERIMENTAL DESIGN AND PROCEDURES

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

All dyads (10 in each of the four experimental conditions) engaged in the same communication task, which involved simulating a doctor-patient interview. The patients (speakers) were given a simple case history to memorize, and then during the experimental session, they presented the case history to the doctors (listeners). The case history was developed in Chinese, translated into English, and then translated back into Chinese to check for accuracy. The Chinese speaker-Chinese listener condition used the Chinese version, whereas the other three conditions used the English version.

On arrival at the lab and after the role of a patient (speaker) or a doctor (listener) was randomly assigned by a draw, the speakers were given sufficient time to study the case history. Then a multiple-choice test (as manipulation check) was given to the speakers to ensure that they had mastered the content. Meanwhile, the listeners were given a list of information that they should get from the speaker during the conversation (for more details, see H. Z. Li, 1999b). The list of information was relevant to the doctor-patient interview in general (e.g., what the exact problem was, whether the patient had a previous occurrence of the problem) but not specific to the content of the case history. The listener was also instructed to feel free to ask the speaker 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-play, 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 5 minutes and 29 seconds across conditions. The mean time was 4 minutes and 48 seconds for the Canadian speaker-Canadian listener condition (288.0 seconds), 5 minutes and 16 seconds for the Chinese

speaker-Chinese listener condition (316.0 seconds), 5 minutes and 22 seconds for the Chinese speaker-Canadian listener condition (322.0 seconds), and 6 minutes and 32 seconds for the Canadian speaker-Chinese listener condition (392.0 seconds). Univariate F tests showed that no two groups were significantly different from each other, $F(3, 36) = 0.85$, $p < .05$; $MSE = 23,049.95$ seconds.

DIMENSIONS OF INTERRUPTIONS

Interruptions were divided into successful and unsuccessful. Both can occur with or without overlapping. Successful interruptions were differentiated into intrusive, cooperative, and other categories. Unsuccessful interruptions were not classified. Examples for each category are available from the author on request. All examples are from the data set of the current study.

> *Successful interruptions*: An interruption is judged successful if the second speaker cuts off the first speaker before he or she finishes a complete utterance (more than the last word of the utterance), and the second speaker continues to talk until he or she finishes an utterance, whereas the first speaker stops talking abruptly (Beaumont & Cheyne, 1998; Jacob, 1974; Mishler & Waxler, 1968; Ng et al., 1995).
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> *Unsuccessful interruptions*: These were instances when the second speaker begins talking before the first speaker finishes an utterance, and either both speakers continue talking and complete their utterances (Beaumont & Cheyne, 1998; Jacob, 1974; Ng et al., 1995) or the second speaker stops before finishing the intruding speech, although the first speaker continues talking and holding the floor.
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> *Interruptions without overlapping*: This type of interruption is also termed silent interruption (Ferguson, 1977). These are instances when the second speaker starts talking while the first speaker's utterance is not completed. The utterances of the two speakers do not overlap. As pointed out by Bull and Mayer (1988), this situation poses special difficulties for scorers when deciding whether the first speaker intends to continue talking or use the silence as a turn-yielding signal (Duncan, 1972; Duncan & Fiske, 1977), for "conversations don't always follow rules of standard grammar" (Bull & Mayer, 1988, p. 37). Following Duncan (1972), the possibility of an interruption was excluded if one or more of the following turn-yielding signals occurred: a rise or fall in pitch at the end of a clause or a drawl on the final syllable. An interruption was determined when there is no change in the tone of speech in the final syllable, if the lips are still moving during the pause, or the lips start to move following a short pause.
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> *Complex interruptions*: Sometimes speakers interrupt each other, or one speaker interrupts the other, consecutively. Roger, Bull, and Smith (1988) (also see Bull & Mayer, 1988) coded these sequences as one special category, whereas others coded them as a series of independent events (Ferguson, 1977; Kennedy & Camden, 1983). The present study followed the latter because complex interruptions were infrequent and an independent category would not allow for meaningful analysis.

CATEGORIES OF INTERRUPTION: COOPERATIVE

According to Murata (1994), cooperative interruptions intended to help the speaker by coordinating on the process and/or content of the ongoing conversation. Murata's cooperative interruption had no subcategories. The cooperative category used in the present study contained three subcategories: assistance, agreement, and clarification. Agreement and clarification were borrowed from Kennedy and Camden (1983), whereas assistance was developed by the author based on the nature of the present data.

> *Agreement*: According to Kennedy and Camden (1983), an agreement interruption enables the interrupter to show concurrence, compliance, understanding, or support. Sometimes, the interruption also serves as an extension or elaboration of the idea being presented by the speaker.
> *Assistance*: The interrupter perceives that the speaker needs help. The interrupter provides the current speaker with a word, phrase, sentence, or idea.
> *Clarification*: This type of interruption is usually initiated by the listener, with the intention to understand the message being sent by the speaker (Kennedy & Camden, 1983). The ultimate goal of the interruption is to have the current speaker clarify or explain a previously elicited piece of information that the listener is unclear about.

CATEGORIES OF INTERRUPTION: INTRUSIVE

According to Murata (1994), intrusive interruptions pose threats to the current speaker's territory by disrupting the process and/or content of the ongoing conversation (Goldberg, 1990). Murata's intrusive category has three subcategories: disagreement, floor taking, and topic change. The intrusive category used in the present study contains four subcategories: disagreement, floor taking, topic change, and tangentialization. The last subcategory is borrowed from Kennedy and Camden (1983).

> *Disagreement*: When the interlocutor in the role of the listener disagrees with what the current speaker is saying and wants to voice his or her opinion immediately, disagreement interruption occurs.
> *Floor taking*: In the case of floor taking, the interrupter does not intend to change the topic of the current speaker. Instead, the interrupter usually develops the topic of the current speaker and does so by taking over the floor from the current speaker.
> *Topic change*: In this conversational act, the interrupter is somewhat more aggressive than in the floor-taking situation because he or she has to accomplish the task of changing the topic.
> *Tangentialization*: This is defined as a speech reflecting the listener's awareness, usually by way of summarization, of the information being sent by the current speaker (Kennedy & Camden, 1983). By summarizing a piece or pieces of previously elicited information, the interrupter

may make light of, or in some way minimize, the message being sent by the current speaker. Tangentialization prevents the interrupter from listening to an unwanted piece of information, either because the information has been presented previously or the information is already known to the listener through other channels.

OTHER INTERRUPTIONS

In addition to cooperative and intrusive interruptions, six accounts of interruptions in the data were not classifiable in any of the seven subcategories. Following Kennedy and Camden (1983), they were categorized as "other interruptions."

SCORING AND INTERSCORER RELIABILITY

Two trained research assistants, one English speaking and one bilingual, made verbatim transcripts of the videotaped conversations. Three trained research assistants and the researcher coded the data for frequencies of successful and unsuccessful interruptions using the coding scheme presented above.

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 for the first time by watching the tape and listening to the dialogue, and (d) score for the second time by listening to but not watching the tape so you can just concentrate on the conversations.

Following the training session, four persons independently scored the videotaped conversations. The interscorer reliability (Pearson correlation) was between 0.89 and 0.93. In scoring the data, scorers were required to write down all identifiable details of interruptions including the provider and the exact time (minute and second) they occurred. Although transcripts were available, scorers were required to score interruptions from the videotape, using transcripts as references.

RESULTS

TREATMENT OF THE DATA

The frequencies of cooperative, intrusive, other, and unsuccessful interruptions were summed across the four experimental conditions. The frequencies from three subcategories—agreement, assistance, and clarification—were summed to make the score for cooperative inter-

Table 1
Means for Rates of Cooperative, Intrusive, and Unsuccessful
Interruptions as a Function of Condition

Condition	Dyad	Cooperative		Intrusive		Unsuccessful	
Speaker/Listener	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Canadian/Canadian	10	4.04	5.61	6.93	7.89	1.34	2.42
Chinese/Chinese	10	13.41	9.38	3.68	2.89	0.00	0.00
Chinese/Canadian	10	5.85	5.82	7.15	7.62	2.74	2.51
Canadian/Chinese	10	4.04	6.14	7.49	8.26	4.09	4.19

Note. n represents the number of dyads. All dyads were same-gender; males and females were evenly distributed in all conditions.

ruption. The frequencies of disagreement, topic change, floor taking, and summarization were added to make the score for intrusive interruption. The total frequency was 132 for cooperative interruption, 109 for intrusive interruption, 6 for other interruption, and 35 for unsuccessful interruption. Total talking time for all 40 conversations was 13,180 seconds.

Due to the differences in talking time for each individual, frequencies of interruptions do not make meaningful comparisons. Following standard practices in treating this kind of data (e.g., Bull & Mayer, 1988; Roger & Schumacher, 1983; Rogers & Jones, 1975), all frequencies were converted into rates, which are derivations of frequencies divided by talking time. Because of the small numerators and large denominators (talking time was measured in seconds), the rates were very small. Following Beaumont and Cheyne (1998), the rates were multiplied by the grand mean of the talking time.

The data could also be treated using each partner's total number of words as the denominator when converting frequencies to rates (Hill, 1988; Kollock, Blumstein, & Schwartz, 1985). This approach takes each individual's speech speed into consideration. The present study could not adopt this method because two languages were used in the conversations. The Canadian speaker-Canadian listener, Chinese speaker-Canadian listener, and Canadian speaker-Chinese listener conditions used English in their conversations, whereas the Chinese speaker-Chinese listener condition conversed in Mandarin Chinese.

Means of rates for intrusive, cooperative, and unsuccessful interruptions were calculated across the four experimental conditions; they are presented in Table 1. The unit of analysis in each condition was a dyad rather than an individual speaker or listener because conversation is a joint activity between conversational partners (Bavelas & Segal, 1982; Clark & Brennan, 1991; Clark & Schaefer, 1989; Goffman, 1967; Goodwin, 1981; Grice, 1975; Roger & Nesshoever, 1987; Schegloff, 1982; Tannen, 1994).

The Canadian Speaker-Canadian Listener Condition: Testing Hypothesis 1a

Hypothesis 1a predicted that intrusive interruptions would be seen more frequently than cooperative interruptions in Canadian speaker-Canadian listener conversations. As shown in Table 1, the mean rate for intrusive interruption was higher than the mean rate for cooperative interruption, but no statistically significant difference was reached. Thus, Hypothesis 1a was not supported.

The Chinese Speaker-Chinese Listener Condition: Testing Hypothesis 1b

Hypothesis 1b predicted that cooperative interruptions would be seen more frequently than intrusive interruptions in Chinese speaker-Chinese listener interactions. As indicated in Table 1, the mean rate for cooperative interruption was higher than the mean rate for intrusive interruption. ANOVA revealed that the difference was statistically significant, $F(1, 9) = 12.41$, $p < .005$. Thus, Hypothesis 1b was highly supported by the data.

The Canadian Speaker-Chinese Listener Condition: Testing Hypothesis 2a

Hypothesis 2a predicted that intrusive interruptions would be seen more frequently than cooperative interruptions in the Canadian speaker-Chinese listener condition. The mean rate for intrusive interruption was higher than the mean rate for cooperative interruption. ANOVA indicated a significant difference, $F(1, 9) = 7.17$, $p < .05$. Thus, Hypothesis 2a was supported by the data.

The Chinese Speaker-Canadian Listener Condition: Testing Hypothesis 2b

Hypothesis 2b predicted that intrusive interruptions would be seen more frequently than cooperative interruptions in the Chinese speaker-Canadian listener condition. As shown in Table 1, the mean rates for intrusive interruption and cooperative interruption were similar for this condition. Thus, Hypothesis 2b was not supported.

COMPARING DOCTOR-PATIENT INTERRUPTION PATTERNS

The mean rates for cooperative and intrusive interruptions for doctors and patients are presented in Table 2. To test for role (doctor vs. patient) main effects, ethnicity main effects (4 experimental conditions), and role-by-ethnicity interactions, a 2×4 MANOVA was con-

Table 2

Means for Rates of Cooperative and Intrusive Interruptions as a Function of Role

Role	Condition	n	Cooperative		Intrusive	
			M	SD	M	SD
Canadian doctor	Intracultural	10	0.00	0.00	4.09	4.94
Canadian patient	Intracultural	10	4.04	5.61	2.84	4.26
Chinese doctor	Intracultural	10	6.08	5.03	1.90	2.05
Chinese patient	Intracultural	10	7.33	7.84	1.78	1.74
Chinese doctor	Intercultural	10	2.26	3.62	4.18	5.89
Canadian patient	Intercultural	10	1.78	2.72	3.31	3.68
Canadian doctor	Intercultural	10	3.15	4.09	5.41	6.12
Chinese patient	Intercultural	10	2.70	3.46	1.74	2.13

Note. All dyads were same-gender; males and females were evenly distributed in all conditions.

ducted. The analysis showed no role main effect, no role-by-ethnicity interaction, but a significant ethnicity main effect, $F(6, 142) = 3.25$, $p = .005$, Wilks's Lambda = .77. Exploratory post hoc multiple comparisons at an α level of .05, using LSD, were performed. Results indicated that the Chinese doctor-Chinese patient condition performed significantly more cooperative interruptions than the other three conditions. No other significant differences were found among other cultural conditions in terms of the amount of cooperative and intrusive interruptions performed.

Within-condition comparisons for cooperative interruptions indicated that the mean rates for those who played the roles of a doctor and a patient were similar in the Chinese doctor-Chinese patient, Chinese doctor-Canadian patient, and Canadian doctor-Chinese patient conditions. In the Canadian doctor-Canadian patient condition, the doctors made no cooperative interruptions in the entire conversation ($M = 0$). All the cooperative interruptions were made by the patients. ANOVA showed that the difference was statistically significant, $F(1, 9) = 5.20$, $p < .05$.

Within-condition comparisons for intrusive interruptions indicated that the mean rates for doctors and patients were similar in the Chinese doctor-Chinese patient, Canadian doctor-Canadian patient, and Chinese doctor-Canadian patient conditions. In the Canadian doctor-Chinese patient condition, the doctors made more intrusive interruptions than the patients. This difference was statistically significant, $F(1, 9) = 5.23$, $p < .05$.

Communication Accommodation

Because MANOVA showed no role main effect, it was an indication that doctors and patients did not systematically differ in their interruption styles. Thus, it is unknown whether speech convergence

occurred. In the two conditions that the doctor role was played by Canadians, significant differences were found. The doctors exhibited more intrusive interruptions than did patients, and the patients displayed more cooperative interruptions than did doctors.

Unsuccessful Interruptions

The mean rates for unsuccessful interruptions are presented in Table 1. As shown in Table 1, the mean rates for the two intercultural conditions (Canadian speaker-Chinese listener and Chinese speaker-Canadian listener) were higher than mean rates in the two intracultural conditions (Canadian speaker-Canadian listener and Chinese speaker-Chinese listener).

ANOVA indicated a significant difference among the means, $F(3, 36) = 4.78$, $p < .01$. Exploratory post hoc multiple comparisons at an α level of .05, using LSD, were performed. Results showed no difference between the two intracultural groups (the Canadian speaker-Canadian listener and Chinese speaker-Chinese listener conditions) or between the two intercultural groups (the Canadian speaker-Chinese listener and Chinese speaker-Canadian listener conditions). There were, however, significant differences between the Chinese speaker-Canadian listener and Chinese speaker-Chinese listener conditions. There were also significant differences between the Canadian speaker-Chinese listener and the two intracultural groups, the Canadian speaker-Canadian listener and Chinese speaker-Chinese listener conditions.

Questionnaire Data

To measure their perceived relationship, participants in the two intercultural conditions (Chinese speaker-Canadian listener and Canadian speaker-Chinese listener) filled out a questionnaire immediately after their conversations. Of the 40 intercultural participants, 38 completed the questionnaire; 2 did not because the experimenter forgot to distribute the questionnaire. The questionnaire was made up of 11 questions, of which 8 had a 7-point Likert-type scale, whereas the remainder had an open-ended format. Results of the 7 questions relevant to the perceived relationship of the partners are presented in Table 3.

Because English was the first language of the Canadian participants, their English-language fluency was not rated. The first question in Table 3 asked the Chinese participants to rate their own English-language fluency and the Canadians to rate the English-language fluency of their Chinese partners. As indicated in Table 3, there was no statistically significant difference between the mean ratings by the Chinese and Canadians in terms of the English fluency of the Chinese.

Table 3
Mean Scores of Questionnaire Data for Chinese and Canadians in the Intercultural Conditions

Question	Likert-Type Scale	Chinese (n = 19)		Canadians (n = 19)	
		M	*SD*	*M*	*SD*
How would you rate your (your partner's) English-language fluency?	*Not fluent* = 0; *very fluent* = 6	3.32	1.75	4.00	0.66
How knowledgeable is your partner about your culture?	*Not knowledgeable* = 0; *very knowledgeable* = 6	2.95	1.72	4.36	0.95
Did you have difficulties communicating with him or her?	*Not at all* = 0; *very difficult* = 6	1.42	1.50	1.32	1.29
Do you think your partner had difficulty communicating with you?	*Not at all* = 0; *very difficult* = 6	1.16	1.30	1.89	1.20
How different was this from a conversation with someone of your own culture?	*Not different* = 0; *very different* = 6	2.12	1.93	2.37	1.53
Overall, how much did you enjoy the conversation?	*Not at all* = 0; *very much* = 6	4.84	1.39	5.00	0.66
If you run into this person again in the future, would you be willing to talk with him or her?	*Not at all* = 0; *very much* = 6	5.53	0.77	5.26	1.44

Interestingly, the Chinese were rated more knowledgeable about the Canadian culture than the Canadians about the Chinese culture, $F(1, 36) = 9.96$, $p < .005$. No statistically significant difference was found between the means of the Chinese and the Canadians for the remaining five questions in Table 3.

DISCUSSION

The data generated four findings. Each is intriguing and important, be it a support or a negation of the hypotheses. Each will be discussed below.

COOPERATIVE INTERRUPTIONS IN THE CHINESE SPEAKER-CHINESE LISTENER CONDITION

The hypothesis that in Chinese-Chinese interactions, cooperative interruptions would occur more frequently than intrusive interruptions was strongly supported by the data. Participants engaged in

significantly more cooperative than intrusive interruptions regardless of their roles (doctor or patient). In performing cooperative interruptions, the second speaker intends to assist and/or agree with the current speaker and/or have the current speaker clarify or explain a previously elicited piece of information. Cooperative interruptions functioned to coordinate on the process and/or content of the ongoing conversation. By interrupting cooperatively, interlocutors showed solidarity (Tannen, 1989), connectedness (Geertz, 1975) or *GuanXi* (H. Z. Li, 1998), and interdependence (Markus & Kitayama, 1991). This finding has provided strong support for Markus and Kitayama's theory (1991) that collectivists construe the self-other relationship interdependently.

Similar interruption patterns were observed by Moerman (1988) in Thai conversations and by Hayashi (1988) in Japanese conversations. Mizutani (1988) reported that cooperative interruption is called *kyowa* in Japanese, which literally means coproduce or cooperate. The Japanese see a conversation as a duet, the success of which requires perfect coordination between the speaker and the listener.

ROLE AND INTERRUPTION PATTERNS: THE CANADIAN DOCTOR CASE

Role was not a factor in the type of interruptions displayed in conversations when Chinese played the role of a doctor (Chinese doctor-Chinese patient and Chinese doctor-Canadian patient conditions). In these two conditions, doctors and patients engaged in similar frequencies of intrusive and cooperative interruptions. There are two logical explanations for this puzzling but intriguing phenomenon. First, the Chinese culture does not encourage intrusive interruptions regardless of conversation partner. To maintain harmony is more important than to convey one's intentions or messages (H. Z. Li, 1999b). Second, the income discrepancy between doctors and the general population is small since China implemented a more egalitarian salary system in 1949. Furthermore, the Communist system encourages comradeship in the interactions of its citizens. These economic, social, and political factors may have been indoctrinated into the conversational behavior of the Chinese.

In the two conditions in which the Canadians played the role of a doctor (Canadian doctor-Canadian patient and Canadian doctor-Chinese patient conditions), there were significant differences between the doctors and patients in the frequencies of intrusive and cooperative interruptions. In the Canadian doctor-Canadian patient condition, the doctors performed no cooperative interruptions. All interruptions were intrusive. This seems to indicate that Canadian doctors, as simulated in this study, assumed intrusive rather than

cooperative interruption styles. A possible explanation for this phenomenon is that the Canadians assumed the role they were playing and the preference for intrusive interruption style is attributable to the high-status doctor role.

In the Canadian doctor-Chinese patient condition, the Canadian doctors contributed significantly more intrusive interruptions than the Chinese patients. The difference between doctors and patients in the Canadian doctor-Chinese patient condition in the use of intrusive interruptions was significantly larger than in the Canadian doctor-Canadian patient condition. This phenomenon may be attributable to the existence of a double status asymmetry. When Canadian doctors interacted with Chinese patients, there were doctor-patient roles as well as majority-minority status differences. Armed with double power, the Canadian doctors intrusively interrupted the Chinese patients to a larger extent than with Canadian patients.

These findings could bear important implications for health communication between doctors and patients in general and between mainstream doctors and minority patients in particular. Being constantly interrupted in an intrusive manner by their doctors not only makes patients feel disrespected but also prevents them from explaining their symptoms clearly, resulting in misdiagnosis, unnecessary hospitalization, and ineffective utilization of the health care system (Diaz-Duque, 1989; DiMatteo & DiNicola, 1982; Makoul, Arntson, & Schofield, 1995; Sharf, 1990). The following example by a Filipino immigrant in Northern British Columbia illustrates the consequence of intrusive interruptions by his doctor (H. Z. Li & Browne, 2000).

> Once I went to the doctor when I had a severe stomach pain. After a brief checkup, he presumed I had mental health problems. Though this was not the case, I had to stay in the hospital for five days. The tests done on me were okay. The doctor didn't listen to me when I told him I did not have such a problem. He kept interrupting me so I did not explain myself clearly. I was given medicines to no effect and told to do exercises. The pain subsided after a long time. (p. 153)

Speech maintenance was another phenomenon observed in the two conditions when Canadians played the role of a doctor. It seemed that the doctors and patients maintained their respective interruption styles: the doctors, intrusive, and the patients, cooperative. This is consistent with the pattern found by Bourhis, Giles, Leyens, and Tajfel (1979) and Bourhis et al. (1989); the latter reported that doctors and patients used their respective speech styles—the doctors' medical talk and the patients' everyday language. The finding of the current study, together with reports by Bourhis et al. (1989), seemed to document a speech maintenance pattern in doctor-patient interaction.

CULTURE AND UNSUCCESSFUL INTERRUPTIONS

The finding that the two intercultural groups (Canadian speaker-Chinese listener and Chinese speaker-Canadian listener) engaged in more unsuccessful interruptions than the two intracultural groups (Canadian doctor-Canadian patient and Chinese speaker-Chinese listener) is very revealing. It clearly indicates that intracultural conversations are more coordinated than intercultural interactions. This finding is consistent with observations made by Gumperz (1978), who reflected that intracultural discourse is more synchronized than intercultural interactions. Tannen (1981) asserted that intracultural conversations are more congruent than intercultural conversations. The numerous unsuccessful interruptions in intercultural interactions undoubtedly indicate a lack of congruity to the extent that interlocutors cannot successfully insert an interruption.

This finding also sheds light on the phenomenon of the miscommunication and noncommunication in intercultural interactions (Erickson, 1975; Gumperz, 1978; Scollon & Scollon, 1981, 1995; Taylor & Simard, 1975). H. Z. Li (1999a) reported that listener recall scores were significantly lower in intercultural situations than in intracultural interactions even when the second-language speaker had sufficient language capacity to participate in the conversation. In a follow-up study, H. Z. Li (1999b) observed that dyads who achieved higher listener recall scores also performed more grounding (Clark & Brennan, 1991; Clark & Schaefer, 1989; Goffman, 1967; Goodwin, 1981; Grice, 1975), which is defined as a verbal activity by the listener or the speaker causing a previously elicited unit of information to be repeated, partially repeated, paraphrased, explained, confirmed, or clarified by reformulating or repairing. It is therefore argued that successful interruptions, like grounding activities, may be a means to effective communication. Contrary to previous belief that all interruptions are disruptive (Ferguson, 1977; Jacob, 1974; Mishler & Waxler, 1968; Roger & Nesshoever, 1987; Roger & Schumacher, 1983; Zimmerman & West, 1975), it is reasoned that some types of interruptions, when performed successfully, may facilitate content transmission.

COMMUNICATION ACCOMMODATION: CONVERGENCE

In the two intercultural conditions (Chinese speaker-Canadian listener and Canadian speaker-Chinese listener), the occurrences of intrusive interruptions were greater than cooperative interruptions. The Canadian participants maintained their intrusive interruption style, whereas the Chinese participants switched from their usual cooperative style to the more intrusive style of their Canadian partners. This finding has provided strong support for CAT (Bourhis, 1979;

Giles et al., 1977, 1987; Giles & Johnson, 1987; Giles & Smith, 1979; Larsen et al., 1977). CAT states that in conversations, one party may converge to the other's conversation style for power and/or social acceptance (Bourhis, 1979, 1984; Giles et al., 1977, 1987).

Although perceived power was not measured, one variable in the questionnaire—which was filled out by intercultural dyads immediately after the conversations—provided an indirect measure. When asked, "How knowledgeable is your partner about your culture," the Chinese were rated more knowledgeable about the Canadian culture than the Canadians about the Chinese culture. It can be inferred that the more powerful majority group tends to ignore the culture of the less powerful minority group, whereas the minority group must know the culture of the majority group. It is argued that answers to this question reflect power differences between the Chinese and the Canadian participants. Previous research has documented that in intercultural interactions, the majority group (usually speaking its native language) holds more social, economic, and linguistic power than the minority group that speaks the language of the majority group (Bourhis, 1979, 1984, 1994; Giles et al., 1977). Given the subordinate social status that Chinese students hold in Canada and the discriminatory treatment that Chinese have received in Canada throughout the past century (Berry & Kalin, 1995; Dion & Kawakami, 1996; Lai & Yue, 1990; P. S. Li, 1988; Reitz, 1980; Reitz & Sklar, 1997), it can be reasoned that the Chinese participants converged to the interruption style of the Canadians due to the higher social status of the latter. For a more definitive explanation of interruption convergence in intercultural settings, future research needs to directly measure perceived social status.

Results from the questionnaire filled out by both Canadian and Chinese participants immediately after the interactions seem to indicate that the Chinese participants were well accepted by the Canadians. In spite of the differences and difficulties they experienced in their conversations, both Chinese and Canadian participants claimed that they enjoyed the conversations immensely and were decidedly willing to talk with their partners again should they meet in the future. Taken together, the results showed that the Chinese participants converged their interruption style to that of their Canadian partners, and they were well accepted by their Canadian partners.

The interruptions-style convergence of the Chinese participants in this study is consistent with previous observations in native-nonnative conversations (Bond & Yang, 1982; Ervin-Tripp, 1964; Gallois & Callan, 1991; Gallois & Markel, 1975; Murata, 1994), although these researchers termed this phenomenon code switching. Based on the results of the current study, it is argued that speech convergence as a discourse phenomenon is unquestionably existent in intercultural conversations. More studies of a similar nature (i.e., face-to-face inter-

action) but in other cultural groups are needed to expand the scope of this theory.

This research considerably advances our understanding of conversational interruptions in several dimensions. By applying CAT to the intercultural data, it was documented that convergence in interruption style occurred in intercultural interactions. It was also found that Canadians in the doctor role preferred intrusive interruptions to cooperative interruptions. In employing Markus and Kitayama's (1991) independent-interdependent self-construals in intercultural and intracultural data, it was demonstrated that this theory may be extremely useful in explaining the relationship dimension (Watzlawick, Bavelas, & Jackson, 1967) of human communication. This study supports and extends Murata's (1994) theory of categorizing interruptions into intrusive and cooperative types. The scoring method used in this study has substantiated and systematized Murata's categories by adding several subcategories. Finally, findings of the current study point to a hypothesis that conversational interruption may be a pancultural phenomenon, whereas interruption styles may be culture specific.

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