What's Your Point?

How Chinese and Americans Achieve Their Conversational Aims in Cross-Cultural and Gender Interactions in CMC

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Abstract. In this study of computer-mediated communication (CMC), Chinese and American students were paired cross-culturally and within same- and mixed-gender dyads. IM transcripts were analyzed for linguistic indicators of conversational management and interactional style. Our results revealed interesting interaction effect of culture and gender pairings. Females used more indicators of interaction style and males used a conversational management strategy for achieving their conversational aims. However, both Chinese males and females were more linguistically active when paired with an American of the opposite gender, while American females displayed more cultural acceptance when paired with a Chinese female than a Chinese male. American males talked more when paired with a Chinese male than when paired with a Chinese female. These findings have implications for working in global virtual teams and system design for cross-cultural collaborations.

Keywords: IM, gender, culture, computer-mediated communication, linguistics.

1 Introduction

Technology extends human capacity, allowing people to interact and exchange ideas across multiple boundaries – boundaries of time and space, as well as boundaries imposed by various stereotypes of social or cultural differences. In communications, dissimilar cultural and social orientations can introduce ill-timed interruptions, misunderstood silence, or ambiguous phraseology that adds confusion. Particularly for internationally diverse members communicating in a lean media channel like instant messaging (IM), misunderstandings and miscommunications may be avoided by understanding how cross-cultural and mixed gender interactions in IM are conducted.

Prior work in the effects of cultural differences in communication report the ways culture and media-type influence behavior. In an earlier study, Chinese and American intra-cultural behaviors were compared [1]. Zhang and Marksbury report that Chinese participants spent more time in discussions than did the Americans, and performed the

task more efficiently. If prior relational interaction promotes task effectiveness, an analysis of the structure and content of task-related discussions are important to observe. Our objective is to investigate how cultural differences manifest in CMC. To aid cooperation among individuals involved in remote collaborations, and to add to what is understood about the interaction of gender and culture in CMC, the aim of this paper is to report the results of conversational interactions of cross-culturally, diverse gender pairings.

2   Related Work

2.1   Gendered Talk

Gender-related styles of communicating have long been studied. In studies of face-to-face and written language, results are framed in theoretical viewpoints that certain drivers influence linguistic behavior. One explanation stems from the theory of gendered social roles assigning women as nurturing caretakers and men as action-oriented agents [2]. Social role theory predicts that females are socialized to be more collaborative and males more instrumental. This theory has been used to explain gender-related conversational differences, exemplified by females' cooperative and accommodating language and males using more assertive and active language [3].

Partner Influence. McMillan, et al [4] advocate that to understand the interactional elements between males and females, it is necessary to distinguish with whom the speaker is paired. Female friendships with other females are characterized with intimacy and emotional expressiveness, while the emphasis of males' friendships with other males is placed on shared activity [5]. Females tend to use more grammatically correct language and make requests using more words than males, while males in mixed gender conversations respond to these supportive interactions by talking more [6]. When paired with a female, males talked longer than when paired with another male, or than when females were paired [7]. Males also interrupted more when in face-to-face conversations with females than when speaking with other males [8].

Gender in IM. IM conversations are found to exhibit gendered conversation similar to patterns in spoken language. Previous studies of CMC have found that women in conversations with other women are more likely to talk longer [9], use more emoticons and more extensive openings and closings in their discussions [10]. Females in conversation with other males used more emoticons [9] and more words [11]. Ellipses, emoticons and acronyms become IM's nonverbal cues [9, 12] that provide emphases for meaning interpretation. The act of encouraging interaction is also seen in using multiturn sets (MTS). Particular for chatting channels, multiturn sets or "utterance chunks" [13] are the sequentially related messages a speaker uses to communicate several messages across several turns.

2.2   Cultural Influences

Another driver of linguistic behaviors is explained by an effect of culture. Stylistic differences between American and Chinese cultures align with the individualist-collectivist dimension [14, 15], a framework to account for nationalistic differences. Cross-cultural CMC research frequently employs models of cultural dimensions to interpret aggregate measures of culturally based behaviors. While second-language communicators using English complicates interpretation, English remains a language common to many global industries, academics, and the "*lingua franca* of professional communication" [16, 339]. Cultural orientation, even when analyzed by linguistic indicators in a common language, should not be overlooked.

Culture in IM. Cultural influences in CMC include channel preferences, feature utilization, as well as communicative behaviors. Asians report preferences for lean media, stemming from concerns of language fluency [17], time in interpreting and responding [18], as well as higher ratings of emoticon importance [19]. North Americans are more likely to prefer direct communication, punctuated by debate and confrontation, while Asians may use time delays and other ambiguities that provide more time to digest message content and compose responses. Language-based indicators among Asian participants include more politeness and greater message production when compared to US participants, suggesting a more involved interactional style [20]. Despite this important work, the sociolinguistic analysis of IM remains relatively under-explored.

Cross-cultural Partner Influences. Other sociolinguistic analyses attempt to isolate media richness and task-type. In text-dominant media, collectivist cultural tendencies features conversational measures made richer by prolonged discussions with deeper interactions [21]. Conversational context is an important consideration, and nationalistic differences may be reduced or amplified in cross-cultural interactions.

2.3   Conversational Aims

In this study, conversational aims describe the goals each participant wishes to achieve in their communications. Reviewing related studies suggests that females will naturally seek out interaction by encouraging others' involvement, and males will be task-oriented and more directive in their communications. Culturally, members of a collectivist culture will strive for relational knowledge by encouraging interaction. Members of an individualistic culture, like the US, are likely to also be more efficient, task-focused and less effusive.

In order to help us think about the kinds of verbal indicators associated with the conversational aims, we divide the frequencies of indicators into two broad categories: conversational management and interaction style.

Conversational Management. Adapted from an extensive analysis of verbal behavior [22], conversational management is defined by the elements used to achieve participants' communication goal. These elements include the number of turns, the number of multiturn sets (MTS), and the length of turns, measured in words. Conversational management represents the characteristics of posting and is used in this

analysis to quantify how individuals negotiate turn-taking and message conveyance to ensure the conversational aim is achieved. From a structural viewpoint, taking the floor and directing the conversation are ways to control communicational flow. These indicators are measured by turn and word production.

Interactional Style. Interactional style describes modifiers of language used in IM to encourage communication and are measured by indicators that suggest a collaborative intent. This conversational aim is achieved by imbuing one's conversation with additional cues to provide explicit meaning and personality. Three measures were used in this study to reflect interactional style: emoticons, unusual punctuation, and words in establishing presence. Emoticons are the ASCII text usually displayed sideways to indicate an emotional state, as in ":)". Unusual punctuation includes added punctuation (!!!) and abbreviations (LOL, IDK). Using humor, emoticons and unusual punctuation are ways to add emphasis for meaning interpretation, help clarify one's meaning and signal communicative encouragement. Word frequency in the introductory phase communication is an indicator of interactional style for establishing presence. By indicating interest in a person's name, their day or mood, the message sender uses more words and more turns at the initial stage of the conversation to establish a relationship.

2.4   Research Hypotheses

We are interested in how computer-mediated communication channels influence people from China and the US. While the body of previous work includes many studies examining CMC and culture, the present study investigates the interaction of gender pairing and culture by analyzing linguistic indicators in CMC. We explore how women and men interact cross-culturally in a negotiation task. Linguistically, males tend to be more active and assertive [3, 8] and talk longer in conversations with females [7]. Females paired with males will use more emoticons [9], will talk more [11], and produce more talk when establishing presence. Therefore, we predict:

> H1a: Males will evidence more conversational management indicators.
> H1b: Females will demonstrate more indictors of an emphatic interactional style.

Cross-culturally, conversation management especially measured by multi-turn (MTS) may indicate two possible linguistic aims. On the one hand, frequent usage of MTS by non-native speakers may slow down the conversation slow of the native speakers. On the other hand, a frequent usage of MTS can also be considered as a politeness by sending out frequent short messages rather than requesting the partner to wait for a long message. Given this, we predict that:

> H2: Chinese will use more MTS than Americans in their communication.

3   Method

Participants: Eighty-one students at a US university participated in this study: 41 Chinese (born and raised in mainland China or Taiwan, and residing the in the US for no more than 4 years) and 40 American students (born and raised in the US). All

participants were paired cross-culturally with 4 confederates (Chinese male, Chinese female, US male and US female). Gender pairing (female-female, female-male, male-female, and male-male) was counter balanced. All participants conversed in English.

Task: An investment game, *Daytrader* [23] based on a prisoner's dilemma was used in the study. Participants were instructed to make as many points as possible, and after every 7 rounds entered an IM discussion through GChat (Google Chat). The game lasted a total of 21 rounds, allowing for 3 discussions. Participants were advised to discuss their investment performance of previous rounds or possible strategies for investing in future rounds.

Procedure: Upon arrival, participants responded to items on a background survey. Game instructions were explained and practice rounds were played in the presence of the researcher. After the task, participants were debriefed with the experimenter to share their experiences and comments.

4   Results

Linguistic indicators of conversational management and interactional style were analyzed from the transcripts of GChat conversations. Analyses of Variance (ANOVA) were performed to regress frequencies of linguistic categories by culture (China or US) and by gender pairings (female-female, female-male, male-female, and male-male).

4.1   Conversational Management Indicators

Turns. Analyzing frequencies of turns used overall, by culture and gender pairing revealed approaching significance of a main effect of culture, with Chinese using more turns (F (1,78) = 3.04, $p < .09$), and an interaction effect of culture and gender pairing (F (3,78) = 2.27, $p < .09$). A post hoc *t*-test of the interaction effect revealed two significant comparisons: First, cross-culturally, Chinese males (CM) used more turns than American males (AM) in a mixed gender pairing (t (18) = 2.07, $p < .05$). Second, CM used more turns in a mixed gender pairing than in an all-male pairing (t (18) = 2.09, $p < .05$). The peak of Chinese males' turns overall is seen in figure 1.
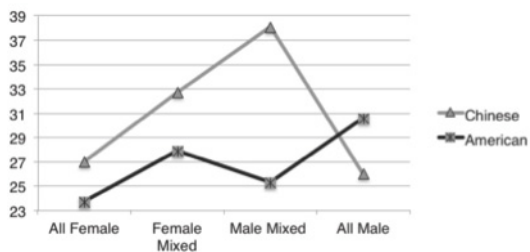

Fig. 1. Turns Overall

Multiturn Sets. Analyzing frequencies of MTS' used overall, by culture and gender pairing reveal a main effect of culture with Chinese using more MTS' than Americans (F (1,78) = 5.52, p < .02). Additional ANOVA for turns used within MTS' were also significant for a cultural effect. Across all discussions, Chinese used more turns within MTS' (t (77) = 2.38, p < .02). There was no difference between cultures for the frequency of words within MTS' (F (1,78) = 32.95, p = .93).

Word Total. Analyzing total of words by culture and gender pairing revealed a significant main effect of culture with Americans using more words than Chinese (F (1,78) = 4.34, p < .05), and a significant interaction effect of culture and gender pairing (F (3,78) = 3.15, p < .03. The post hoc analyses of the interaction effect showed two significant comparisons: American males used significantly more words than Chinese males in all-male pairings (t (17) = 3.64, p < .005); American males also used significantly more words when paired with a Chinese male (all-male) than when paired with a Chinese female (male-mixed) (t (17) = 2.90; p < .01). The peak of American males' word total is seen in figure 2.
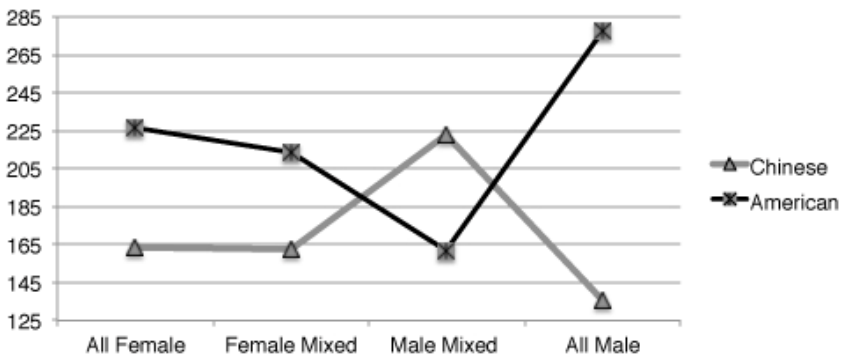

Fig. 2. Words Overall

4.2 Interaction Style Indicators

Emoticons. Analyzing frequencies of emoticons used overall, by culture and gender pairing was significant for culture with Chinese using more emoticons than Americans (F (1,78) = 5.62, p < .02), gender pairings (F (3,78) = 4.59, p < .01), and for an interaction of culture and gender pairing (F (3,78) = 5.49, p < .01). For Chinese comparisons, CF in both all-female and female mixed pairings used more emoticons than CM in both male mixed (t (19) = 2.41, p < .03) and all-male pairings (t (16) = 2.73, p < .02). For American comparisons, AF when paired with CF (all-female) used more emoticons than with CM (female mixed) (t (17) = 3.35, p < .01), and more than AM with CM (all-male) (t (17) = 2.63, p < .02). Cross-culturally, CF used more emoticons than AF in female mixed pairings. The peak of emoticon usage by Chinese female and American female (in all-female) is shown in figure 3.
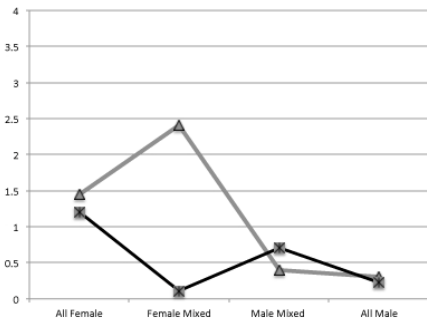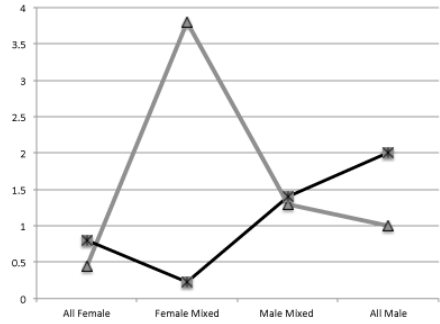
Fig. 3. Emoticons

Fig. 4. Unusual Punctuation

Unusual Punctuation. Analyzing frequencies of unusual punctuation used overall, by culture and gender pairing showed an interaction effect of culture and gender pairing (F (7,78) = 2.14, $p < .05$). For gender pairing comparisons, Chinese female (CF) when paired with AM (female mixed) used more unusual punctuation than when paired with AF (all female) (t (19) = 2.54, $p < .02$), and more than when CM paired with AM (all male) (t (18) = 1.94, $p < .07$). For cross-cultural comparisons, CF used significantly more unusual punctuation than AF in female mixed pairing (t (17) = 2.45, $p < .03$). The peak of unusual punctuation indicators by Chinese female is demonstrated in figure 4.

Words in Establishing Presence. The first discussion is used to establish common ground in learning how the game works. Total word count in this period is used as a measure of establishing presence. Analyzing frequencies of words used in establishing presence, by culture and gender pairing showed an interaction effect approaching significance of culture and gender pairs (F (3,78) = 2.28, $p < .09$). The gender pairing comparison revealed two areas of significance: AF used significantly more words in establishing presence in all female (paired with CF) than in female mixed (paired with CM) (t (17) = 2.52, $p < .02$); CM in male mixed (paired with AF) used more words in establishing presence than in all male (paired with AM) (t (11) = 2.18, $p < .05$). Cross-culturally, CM used more words in establishing presence than AM in male mixed pairings (t (18) = 2.25, $p < .04$). Chinese males' show no difference from American females' peak for word frequency in establishing presence, as in figure 5.
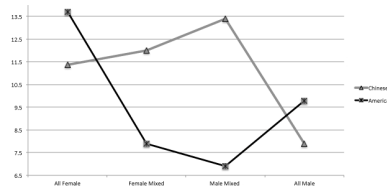

Fig. 5. Word Total in Establishing Presence

5   Discussion

The objective of this study was to investigate how gender and culture interacted in computer-mediated communication, especially in instant messaging (IM). Linguistic indicators were analyzed to explore the conversation management and interactional styles in cross-cultural Chinese and American communications.

H1a predicted males would demonstrate more conversational management indicators than females. Our results support it. In order to gain the floor, Chinese males favored more turns (Fig. 1), while American males favored more words (Fig. 2). However opposite to previously-cited work that males talked longer in conversations with females [7], American males in our study actually used more words when paired with a Chinese male than with a Chinese female. It is likely that when interacting cross-culturally, American males used more words with a male from a minority culture to assert their dominance than they did with a female from a minority culture.

H1b predicted that females would evidence more interaction. Our results support it. Chinese females used more emoticons than Chinese males in all gender pairings. Chinese females also dominated in their use of unusual punctuation. American females used the highest frequency of words in the introductory period of establishing presence, but only when paired with a Chinese female. American females used more emoticons and more introductory words when paired with a Chinese female but not when paired with a Chinese male. This suggested that American females displayed more cultural acceptance when paired with a Chinese female than a Chinese male.

H2 predicted that Chinese would use more multi-turn sets (MTS) than Americans as a conversation management strategy to achieve their conversation aim. Our results confirmed it. Furthermore, there were no cultural differences in word count within MTS, but Chinese still used more turns within MTS than Americans. In other words, both cultures demonstrated similar word production within MTS, but Chinese used more turns in gaining the floor. Chinese turn frequency within MTS may be used to slow down the conversation, and show their politeness by communicating in short, easy-to-read messages.

While males and females in this study provided evidence of high frequencies aligning with predicted conversational aims, distinct gender pairing differences in cultural interactions are noted. Chinese integration with members of the American university cultures exemplifies their attempt to acculturate and yet both genders appear to prefer interaction with members of the opposite gender. Chinese males used the most turns, particularly when paired with an American female, and perhaps as a way to control the fast flow of English. Chinese females used the highest frequency of emoticons and unusual punctuation, particularly when paired with an American male, and perhaps to provide additional cues absent from IM for meaning interpretation. Americans demonstrated an opposite response. US females displayed more additional cues in their discussions, but more so when paired with a Chinese female, while US males used words as a way to dominate their discussions, particularly when paired with a Chinese male.

6   Conclusion

Results from this study suggest that cross-cultural and diverse gender pairing impacts communicational behavior in online discussions. Explanations might be found by considering challenges inherent to a culturally immersive environment.

Considering conversational aims in CMC helps us understand the goals others seek, and might provide insight to individuals for communicating more effectively. Implications of these findings are valuable for analyzing preliminary conversations in global virtual teams. Particularly when assigned to work with people who are strangers, individuals must manage their pre-conceived notions about another's culture and gender. Limitations to generalizing these findings to other situations are noted in both the size and context of this subject pool. Students may not be fully representational of professionals employed in multinational enterprises. Students in this study may in fact be overly sensitive to mixed gender pairings, given the contextual impact of attending college in one's early adulthood. Future work should explore these dynamics in naturalistic professional environments. The ways in which we communicate with one another and the points we make, impact the success of information exchange, knowledge transfer and meaning interpretation. Conversational behavior in work groups is important for increasing efficiency and productivity of teams united in a task, both distant and co-located.

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