

# Retrospective Analysis of Cross-culture Communication

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## ABSTRACT

We report a study using retrospective analysis to understand American and Chinese participants' feelings and reactions on a moment-by-moment basis during an interaction. Participants talked about a fictional crime story together and then individually watched and reflected on an audio-video recording of the interaction. A grounded theory analysis of participants' reflections suggested five key themes: fluency, nonverbal behavioral cues, time pressure, conversational dominance, and attributions for team performance.

## Author Keywords

Cross-culture communication, CMC, retrospective analysis

## ACM Classification Keywords

H5.3 Group and Organization Interfaces: Computer-supported cooperative work

## General Terms

Experimentation, Languages, Theory

## INTRODUCTION

Culturally diverse global teams have many benefits, including the potential to bring together a broad array of expertise and resources to bear on a problem, to find the best person for a job regardless of his or her location, and to optimize efforts by working around the clock [e.g., 4, 12]. At the same time, however, global teams often face difficulties that arise from cultural differences in communication styles, varying interpretations of the communication tasks, different objectives and expectations of group communication [e.g., 3, 6, 10].

Some of the communication problems in global teams may stem from cultural differences in communication styles. Hall [9] distinguished two general communicative patterns: *low context*, typically Western, communication that is verbally explicit, to the point, with relatively little attempt to mask one's feelings and *high context*, typically Eastern communication that is indirect, often ambiguous, and sensitive to the context in which it occurs (e.g., the relationship between speaker and addressee, nuances of facial expressions or tone of voice). Difficulties can arise when, for instance, one member of a team uses a high-context strategy, silence, to indicate disagreement whereas

a teammate from a low context culture expects that all disagreements will be explicitly stated.

Other communication problems may arise from cultural differences in emphasis on task work vs. relationship development [20]. Task-oriented cultures typically focus on getting work done as efficiently as possible, whereas relationship-oriented cultures focus on establishing rapport with one's partners in addition to task completion. This difference in emphasis has been linked to differences in negotiation strategies [e.g., 18], strategies for making requests [1], methods of interruption [15], and other team behaviors.

Problems of intercultural collaboration may be reduced through feedback displays and other interventions that might improve intercultural teamwork by either making cultural differences more apparent to team members [e.g., 5] or by intervening automatically in problematic conversations [e.g., 21]. For example, machine learning techniques might be used to identify when a partner was using silence to indicate disagreement, and make this disagreement more apparent to colleagues from low context cultures. However, in order to develop such interventions, we need a far more detailed understanding of the problems that arise in intercultural communication. Broad dimensions of cultural variation such as high vs. low context or task vs. relationship focus can play out in many different ways within actual conversational interactions.

The picture is further complicated by the fact that prior studies of intercultural communication show quite different patterns of results depending upon the medium of communication [e.g., 5, 16, 17], the type of task, and the cultural composition of the group [20]. For example, Wang et al. found that Chinese participants talked less than Americans in a brainstorming task [20] whereas Setlock et al. [16] found that Chinese participants talked substantially more than Americans when engaged in a problem solving task, but only when the conversation was face-to-face rather than computer-mediated.

In order to develop a fine-grained understanding of how cultural differences in communication styles affect intercultural interaction, we used a retrospective analysis technique developed in psychology [8]. In this technique, people first talk for a period of time and their interaction is audio and video recorded. Afterwards, they individually review the recordings. At preset intervals of a minute or less, the tape is stopped and participants provide their feedback on the segment. This technique, in conjunction with transcripts of the conversation, can help us identify

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precisely what conversational behaviors lead to divergent interpretations, negative affect, or other problems in the interaction.

## **METHOD**

### **Participants**

Participants were Chinese and American students studying at an American university. The Chinese participants were native Chinese speakers who had been born in Mainland China, Hong Kong or Taiwan, and had spent less than 5 years in the United States or Canada. All Chinese participants spoke fluent or near-fluent English. The American participants had all lived for more than 10 years in the United States or Canada and spoke English as their mother language.

By the end of the study, we expect to have data from 30 pairs (60 participants), equally divided into three combinations: 10 American-American (AA) pairs, 10 Chinese-Chinese (CC) pairs and 10 American-Chinese (AC) pairs. In this work in progress paper we present the results from the first 11 pairs (4 CC pairs, 6 AA pairs and 1 AC pair).

### **Task**

Pairs of participants discussed a crime story and tried to point out the culprit of the crime with their reasoning. The crime story was written in two different versions. These versions shared some common information and had details complementing or contradicting each other from different witnesses. Each pair discussed the story face-to-face for 10 minutes and tried to identify culprit.

### **Procedure**

Each Chinese or American participant was paired up randomly with a partner from the same culture or from a different culture, resulting in three combinations (Chinese-Chinese, American-American, American-Chinese). The experiment consisted of two phases. In phase one, each pair was brought into a room and received task instructions. Each participant received a different version of the crime story. They were given 10 minutes to read the story, after which the hard copies were taken away and participants received a memory test on the important details from the version they read. The pair then spent 10 minutes discussing the story. At the end of their interaction, each pair submitted their conclusion about the culprit and the reasoning behind their decision.

In phase two of the experiment, the two participants in each pair were separated into two computer workstations, where they viewed the video recording of their conversation in phase one. This video recording was divided into 10 smaller clips of 1 minute each and played one by one to both participants in the same manner. The facilitator stopped playing after each clip to allow both participants to fill out a retrospective analysis survey on the feelings they had during the conversation about themselves and their partners, at the point of time indicated in the smaller clip. Each participant was also asked to indicate what problems, if any, he or she encountered in each clip and what they

could have done to avoid such problems. The same retrospective survey was repeated for all 10 clips. After the last clip, the participants were debriefed and dismissed.

## **RESULTS**

For the analyses reported here, we used a grounded theory approach [7] to identify five themes that arose during the retrospective analyses: language fluency, nonverbal behavior, time pressure, conversational dominance, and attributions for pair performance.

### **Language Fluency**

Only one Chinese participant in a CC pair reported language fluency problem. She commented on this in the retrospective analysis, but not in her conversation with her partners.

*Just the language, sometimes I can't follow (1st minute)*

*Maybe I can't say the details very well or my memory, she has to guess. It interrupts our conversation (2nd minute)*

*It seems language issue is big challenge for non English speakers. (10th minute)*

Unlike Setlock et al. [15], we did not find extensive concerns about fluency among non-native speakers. The majority of the Chinese participants appeared to have a good command of English and were active in the conversation. However, it is also possible that non-native speakers were reluctant to express fluency concerns in the presence of the experimenter.

### **Nonverbal Behavior**

Both Chinese and American participants reported problems regarding nonverbal behaviors such as head turns, facial expressions and eye contact at some point during the conversation. Although it has been argued that Americans are low context communicators who focus primarily on verbal information exchange [e.g. 9], several of our American participants explicitly mentioned that they used eye contact and body movements to convey interest and involvement in the conversation, and thus that a lack of such body language might have indicated a lack of interest.

*I was not giving good eye contact and showing that I was interested. (Participant ID 82, American, 1st minute)*

*I could have been more receptive (in body language) to her responses. (Participant ID 142, American, 2nd minute)*

*While neither of us had great eye contact with each other, I was especially guilty of focusing my attention/eyes on the computer screen and not communicating (body-language) with her that I was interested in what she was saying. (Participant ID 142, 4th minute)*

Another American participant noticed that these cues also conveyed his/her emotional status

*I also noticed some physical cues of distress (such as I held my head for a moment) (Participant ID 112, American, 1st minute)*

Interestingly, all participants only reported effects on themselves and on the conversation, but not on their

partners. Perhaps watching themselves on video may have made the participants more conscious of their own nonverbal communicative behaviors.

### **Time Pressure**

While both American and Chinese participants reported time pressure on their conversation, especially during the last two minutes, more Chinese participants were sensitive to having limited time.

*I didn't think thoroughly when my partner gave out the conclusion, so I just agreed because the time is running out. If more time is given, I would think thoroughly and then decide whether to agree or not. (Participant ID 22, Chinese, 9th minute).*

*We definitely felt the time pressure in this clip. If we had more time to discuss, I think that we may have come to a more solid explanation. (Participant ID 111, American, 9th minute)*

One Chinese participant expressed nervousness because of the time pressure right at the beginning of the conversation:

*I was a little nervous because time is limited and I wanted to explain things more quickly, but it seems to go the wrong way. (Participant ID 31, Chinese, 2nd minute)*

### **Dominating the Conversation**

Chinese participants were very mindful about dominating the conversation by talking too much and suppressing their partners, while no American reported the same issue. This may stem from Chinese participants' desire to maintain good relationships with their partners.

*I think she might have been a little annoyed with me because I seem to have been talking a lot more than her. She might have felt that I was dominating the discussion, which I wasn't trying to do. (Participant ID 21, Chinese, 5th minute).*

However time pressure created a tension between avoiding dominance (and thus annoyance to partners) and having to talk to make use of the limited time.

*I felt that we should use the time to squeeze all the information and reasoning out as possible because as I started to feel time pressure, I wanted to get to the bottom of the case. So when she wasn't contributing reasons, I like to talk and fill up the silence, which might've annoyed her and made her stop talking. (Participant ID 21, Chinese 8th minute).*

Another participant expressed the tension between independent and cooperative thinking when she felt that she was talking more than her partner.

*I am a bit dominating? I look too strict? I am building up tension? and I kind of "think by myself", asking the partner only to provide information for my knowledge instead of sharing information on a fair base? (Participant ID 41, Chinese, 3rd minute)*

She associated her dominance in the conversation to the greater focus she might have put on finishing the task

versus building a friendly and relaxed atmosphere for the discussion. She was trying to strike a balance between task and relationship focus during the interaction.

*Talking about interaction, maybe i can be more relaxed? Less in a working or "get things done" mode? Esp. if anyway I know we can't get to know the answer ? Also I should share more information? and make better notes instead of keep thinking by myself? (Participant ID 41, Chinese, 4th minute)*

### **Attribution for Performance Problems**

Chinese participants tend to attribute most of the issue with their performance on the task to the manner in which their interaction with their partner was carried out. This is consistent with our previous remark that Chinese were much more concerned about conversational dominance than Americans.

*I felt that I was supplying all the information, and she wasn't as involved and just typed the things I was saying. Also, I showed a little disapproval (jokingly) when I said "way to not tell me" regarding the appearance of Carl being fat and short. She might have taken that as an insult. (Participant ID 21, Chinese, 10th minute)*

*What we did (to focus on one piece of paper of our combined information) is good, but we might need to layout the information in a more organized way to include all info. (Participant ID 22, Chinese, 7th minute)*

The Americans however tend to attribute these performance problems to their way of making sense and reasoning based on the information, rather than how they interact with their partner.

*One problem was that we found a suspect that made sense, but we didn't carefully evaluable all possible suspects. We should have talked more about it before jumping to any conclusions. (Participant ID 112, 10th minute)*

*We supposed automatically that the witness we got is the person, but we didn't go on the discussion to figure out why the same witness was saying things (the time of the murder) that contradict themselves. (Participant ID 141, 5th minute)*

### **DISCUSSION**

Our preliminary analysis of themes that arose during the retrospective analyses suggests some interesting trends in intercultural interactions. Language is a challenge for non-native speakers, but only for those with lower fluency. We also found, contrary to our expectations, that Americans were more likely than Chinese participants to be concerned about nonverbal behaviors. This contradicted previous studies proposing that high-context Chinese should rely more on these kinds of cues to support communication than low-context Americans (e.g [9]). We found that Chinese participants were particularly concerned about equal contributions in collaboration. Problems of unequal participation were aggravated by time pressure, which introduced a tension between the need to contribute to make full use of the limited time, and a desire to avoid

dominating and annoying their partners. Lastly, we noticed that Chinese participants emphasized the role of good communication on team performance, while Americans focused on the content of the task.

The preliminary results pointed out design implications for interventions supporting cross-culture collaboration, such as supporting different kinds of awareness, highlighting communication problems, or encouraging more constant and equal contribution to team work. Future directions include collecting more data and performing quantitative analysis of the conversation logs and the retrospective feedback of participants. We intend to analyze the conversation logs with coding schemes to discover more patterns of communication. Linking analysis of communication logs and retrospective feedbacks, we hope to identify when and how problems occur and the impact of these problems on collaboration. With these results, we hope to inform future design of interventions for intercultural collaboration, as well as contribute to theory building in cross-cultural CMC.

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