The Impact of Cultural Differences on Instant Messaging Communication in China and Germany

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Abstract. Instant messaging (IM) is a popular real-time communication tool to facilitate cooperation. This study attempts to provide a better understanding of instant messaging communication in China and Germany. The study aims to investigate the effects of individualistic versus collectivistic culture and low- versus high-context communication on the preference of multi-party chat and the level of responsiveness in instant messaging communication. 72 Chinese and 60 Germans participated in the survey. The results revealed that Chinese users significantly preferred multi-party chat, seldom sent messages to offline contacts, and used emoticons more frequently to increase the respond speed than German users. Further implications on designing effective cross-cultural communication tools were discussed.

Keywords: Culture, Instant Messaging, Survey study.

1   Introduction

We are living in the information world, where information technology and internet-based communication tools provide convenient communication across long distances and can help multinational cooperation. However, the cultural barriers greatly impact effective communication and cooperation. Cultural differences may cause misunderstandings, conflicts and consequently affect the cooperation process.

Cultural differences in how information technology is used may provide some insights on designing effective collaborative tools in the workplace and to facilitate multinational cooperation. In this paper, we explore how cultural differences influence the use of one popular information technology – Instant Messaging (IM).

IM as a convenient internet-based communication tool has rapidly being adopted in the workplace. Due to its simplicity, ease of use and relatively high level of synchronicity, IM is now widely used all over the world. Studies have shown that IM can support a variety of informal communication tasks between workgroup members, and it is an important part of many workplace tasks (e.g., [1,2,3]). It is predicted that by the end of 2011, IM will be the communication tool with 95 percent of workers in leading global organizations using it as their primary real-time communications [4].

In the past two decades, IM researches have been primarily studied from a western perspective. Until recently, several studies examining cultural issues in computer-mediated communication (CMC) provided valuable results to explore how people from other cultures using this information technology and whether western patterns of use behavior can be generalized to other cultures (e.g., [5,6,7,8,9]). Their studies mainly focused on comparing CMC use behaviors between Asians and North Americans. The results supported the contention that CMC use behaviors differ across these cultures. Under increasing globalization of markets and multinational cooperation, it is also important to know the differences between Asians and European people, for instance, comparing instant messaging communication between Chinese and Germans, in order to provide an integrated view on this topic. Although in general, Europeans and North Americans are all called western people, cultural differences still cannot be ignored. Take Americans and Germans for example, cultural differences exist in communication (e.g., [10,11]) and decision making (e.g., [12,13]).

In this paper, we investigated the effects of culture on instant messaging communication in China and Germany. The purpose of this study was to extend the cross-cultural instant messaging studies to a broader area by adding the results from China and Germany. The findings of this study will make contributions on cross-cultural instant messaging researches. The findings will also help practitioners design effective cross-cultural communication tools.

In the remainder of this paper, we first reviewed literatures on culture and its impact on instant messaging communication. We then presented the results of a preliminary study. Based on literatures and the results of the preliminary study, two hypotheses were developed to examine the preference of multi-party chat and the level of responsiveness for Chinese and German IM users. A questionnaire was designed to test the hypotheses, and the results were analyzed. We ended by discussing and providing recommendations for the design of internet-based cross-cultural communication tools.

2   Literature Review

2.1   Culture and Communication

The term culture is used broadly and inclusively to refer to the collective life patterns shared by people in social groups such as national, racial, ethnic, socioeconomic, regional and gender groups. The most prevalent used definition of culture is given by Hofstede [14], who defines culture as "the collective programming of the mind that distinguishes the members of one category of people from those of another". Through systematically collection of data, Hofstede constructed a commonly acceptable, well-defined, and empirically based terminology to describe culture. Five independent dimensions were concluded [14,15]: (a) power distance; (b) uncertainty avoidance; (c) individualism versus collectivism; (d) masculinity versus femininity; and (e) Confucian dynamism. An evaluation index was also developed, which provided a systematic measurement for different national cultures and allowed comparison between cultures. In this study, we focused on the "individualism versus collectivism"

cultural dimension, trying to investigate how individualistic and collectivistic cultures impact the instant messaging communication.

According to Hofstede [15], individualism is defined as "a situation in which people are supposed to look after themselves and their immediate family only", whereas its opposite pole, collectivism is defined as "a situation in which people belong to in-groups or collectivities which are supposed to look after them in exchange for loyalty". The measurement provided by Hofstede indicated that the value for "individualism versus collectivism" dimension is 20 for China, and is 67 for Germany. The large difference between China and Germany indicates that these two nations lie in the different pole of the individualism-collectivism dimension. China is a typical collectivistic society, and Germany is considered to be stronger as an individualistic society.

Culture and Communication are closely correlated. Communication provides the development of culture, and cultural science could relay to following generations by communication [16]. Hall and Hall [17] classified cultures on different dimensions in terms of communication. One dimension is low- versus high-context communication. Context is defined as the information that surrounds an event. The Chinese, Japanese, the Arabs, and the people from the Mediterranean region are high context cultures, whereas Americans, Germans, Swiss, Scandinavians, and other northern Europeans are low-context cultures [15,18,19].

The high-context communication style is one in which most of the information is already in the person, while very little is in the coded, explicit, transmitted part of the message [17]. In other words, meaning is found in the nature of the situation and relationship in high-context cultures. One of the representatives of high-context culture is China [19]. Chinese people always have closely relationships to the others in their society and tend to have deeply information network around them. The low-context communication style is just the opposite. The information is provided in the explicit code. Low-context people seal their personal relationships and influences from outside off. In comparison to the high-context people, the individuals who belong to low-context culture always need detailed background information each time they communicate with each other. In other words, meaning is found by words in low-context cultures. Germany is a representative of the low-context communication style, as Germans always need to be introduced in detail and require all the background information available.

2.2   Cross-Cultural Studies on Instant Messaging Communication

In recent years, several studies have examined cultural differences on instant messaging communication. They have compared the instant messaging communication behaviors between Asian and North American cultures.

Setlock, Fussel and Neuwirth [8] compared different cultural groups, either as homogeneous American pairs, homogeneous Chinese pairs, or heterogeneous American-Chinese pairs, on face-to-face setting and via instant messaging communication. They found that cultural differences were reduced but not eliminated in instant messaging communication. In addition, the synchronicity of the IM is more important for supporting remote work among members of high-context cultures. Kayan, Fussell, and Setlock [7] examined cultural difference in the use of IM in Asia

and North America. Their results showed that multi-party chat and emoticons were much more popular in Asia than in North America. In a more recent study, Setlock and Fussell [9] conducted in-depth interviews of North American and Asian participants to examine how culture shapes perceptions of the affordances of media and usage of these media in different communicative contexts. They found that the ability for media to support social in addition to task processes was more important for participants from China, Korea and India than for participants from United States.

3   Methodology

In this study, cultural differences between China and Germany in instant messaging communication were investigated. As discussed in the literature review, China is a collectivistic and high-context society, and Germany is an individualistic and low-context society. The cultural differences between these two nations are expected to provide two poles helping gauge the impact on instant messaging communication. In this study, Chinese and German students were selected because younger internet users employ IM in greater number and more ardently than older generations [20].

3.1   Preliminary Study

In-depth interviews with Chinese and German IM users were carried out in order to investigate how they use the IM client software. The participants were students from Tsinghua University in Beijing, P. R. China. The German students were exchange students studying at Tsinghua University. The participants recruited in the interview were experienced users of computer and IM. The interviews were conducted at students' dormitory in order to observe their IM use behaviors. Thus, during the interview, participants were allowed to use IM as usual. The interview lasted about one hour. The questions were mainly about their experience using IM. Sample questions were "what do you use IM for" and "why do you choose to use IM". Three main findings were concluded.

Firstly, it was observed that participants often received incoming instant messages while the interview was conducted. Besides, participants accomplished considerable work using IM during the interview. For instance, they arranged a meeting for their group discussion, made an appointment for lunch, discussed the homework, and even talked about the atmosphere in their dormitories.

Secondly, it was found that the general tenor of IM was casual, informal and friendly with relaxed grammar and spelling. Punctuation characters, such as exclamation and question marks were used multiple sequenced in the IM. The informality of communication in IM imparts the system a kind of intimacy that is missing in other type of computer-mediated communication tools.

Thirdly, participants mentioned that a key reason for them to use IM was its synchronicity to support quick responses. Especially when arranging a meeting, it is important to know the details of other person's schedule. In addition, it was noticeable that Chinese participants tended to respond to incoming messages immediately.

3.2   Development of Hypotheses

Based on the literatures and the interview findings, two hypotheses were developed to investigate the relationship between cultural background and the instant messaging communication.

During the interview, we found that participants frequently used IM to arrange social activities, for example arranging group discussions, making appointments, etc. Most of the IM clients today can provide users to talk with more than one people in the same window at the same time, which is called several-to-several communication. Individualism-collectivism is a key dimension in understanding interpersonal interactions and group communication processes. In an individualist culture, individuals are loosely integrated with others. On the contrary, the individuals from collectivistic culture relate themselves in larger groups. People in collectivistic cultures prefer group discussions and habitually make decisions in group settings rather than individually. Therefore, we assume that people in collectivistic culture, like Chinese, will have stronger preference on using several-to-several communication than people in individualistic culture, like Germans. This leads to the first hypothesis.

Hypothesis 1: the preference of multi-party chat is stronger in collectivistic culture than in individualistic culture.

Generally, the communication in IM can be considered as near-synchronously. However, the level of synchronicity can be adjusted by user's response. IM can be synchronously, near-synchronously, or even asynchronously depending on the responsiveness of the receivers. According to Hall and Hall [17], in high-context culture, the meaning of communication is embedded in the situation. Therefore, they pay more attention to the contextual information and use more contextual-nonverbal cues in communication. On the contrary, situational factors play a minimal role in low-context culture. This leads to the second hypothesis that people in high-context culture, like Chinese, response in instant messaging communication quicker than people in low-context culture, like Germans.

Hypothesis 2: the responsiveness of instant messaging communication is quicker in high-context culture than in low-context culture.

3.3   Questionnaire Design

A questionnaire was designed to test the hypotheses. The questionnaire contained four parts: (a) introductory questions; (b) preference of multi-part chat; (c) responsiveness in instant messaging communication; and (d) demographic profile.

The introductory questions served the purpose of obtaining basic instant messaging communication information of participants, for example, years of experience using IM, duration of connecting time per session, and choice of IM client. Part 2 tested the preference of multi-party chat. This part contained 11 questions using a 5-poing Likert-type scale from 1 (agree) to 5 (disagree). Sample statements were "I often chat with more than one buddy in the same window"; "I like to find the solution of a task on my own before I start a multi-party chat to get some ideas"; "I prefer meetings in a

multi-party chat than to find solutions in a dialogue". Part 3 tested the level of responsiveness in instant messaging communication. This part contained 15 questions using a 5-point Likert-type scale from 1 (very often true) to 5 (seldom true). Sample statements were "I immediate reply to incoming messages"; "Usually I finish what I am doing before I give response"; "If I have to wait for response, I fell immediately angry". The last part dealt with the demographic information, for example participant's gender, nationality, education level, major, etc.

The questionnaire was implemented online. The Chinese data were collected from students studying at Tsinghua University in P. R. China, and the German data were collected from students studying at RWTH Aachen University in Germany. The surveyed students had abundant experience of using at least one of the most popular IM systems: MSN, ICQ, QQ, Skype, etc. They were undergraduate or graduate students majoring at Engineering or Economics. The language used in the questionnaire was English. Pre-tests were conducted to ensure no misunderstandings of the meaning for both Chinese and Germans.

4   Results

4.1   Basic Instant Messaging Use Behavior

Altogether 132 valid samples were obtained, including 72 Chinese samples and 60 German samples. The average age of Chinese students was 23.4, and the average age of the German students was 24.6. The majority of both Chinese and German students had used IM for over 5 years. Nearly half of them connected IM more than 3 hours per session. In addition, about half of the respondents logged in IM client daily.

Chinese and Germans had different preferences on the choice of IM client. Results showed that the most popular client in China was QQ (83.3%), followed by MSN (73.6%) and Skype (38.4%). The most popular client in Germany was ICQ (78.3%), followed by Skype (76.8%) and MSN (36.7%).

4.2   Testing of Hypothesis One

Hypothesis one intended to investigate if the preference of multi-party chat was stronger in collectivistic culture than in individualistic culture. The second part of the questionnaire examined preference of multi-party chat. The internal consistency was 0.66 for the Chinese sample, and was 0.60 for the German sample.

The results showed significant difference ($F[1,130]=21.858$, $p<0.001$) between Chinese users (mean=33.42, SD=5.42) and German users (mean=29.17, SD=4.92) in preference of multi-party chat in instant messaging communication. Hypothesis one was supported. Cultural differences indeed have impact on preference of multi-party chat. People in collectivistic culture have higher preference on multi-party chat than people in the individualistic culture.

4.3   Testing of Hypothesis Two

Hypothesis two intended to investigate if the responsiveness of instant messaging communication was quicker for people in high-context culture than in low-context

culture. The third part of the questionnaire examined the responsiveness in instant messaging communication. The internal consistency was 0.66 for the Chinese sample, and was 0.60 for the German sample.

The results showed no significant difference ($F[1, 130]=2.334$, $p=0.129$) between Chinese users (mean=46.24, SD=7.65) and German users (mean=44.28, SD=6.89) in responsiveness of instant messaging communication. However, further analyses of the questionnaire revealed that Chinese users and German users did differ in two aspects of the responsiveness. Firstly, there was significant difference in how often they leave messages to currently offline contacts ($F[1,130]=4.336$, $p=0.039$). German users were more often to "leave messages to currently offline contacts" than Chinese users. Secondly, significant difference was found in their use of emoticons to increase the speed of response ($F[1,130]=12.401$, $p=0.001$). Chinese users used emoticons more frequently to increase the response speed during instant messaging communication than German users.

5   Discussion

5.1   Theoretical Implications

Overall, the results can be explained well by cultural differences on individualistic versus collectivistic culture and low- versus high-context communication style. People in collectivistic culture had higher preference on multi-party chat than people in individualistic culture. In addition, people in high-context culture seldom sent messages to offline contacts, and more frequently to use emoticons to increase the respond speed during instant messaging communication than people in low-context culture.

Firstly, the preference to communicate by several-to-several IM session is affiliated closely to the collectivistic culture. People living in societies that are characterized by collectivism are from the birth onwards integrated into strong, cohesive in-groups, which throughout people's lifetime. Living in accord with each other is more important and therefore they tend to go along with the decisions of the group. Secondly, the finding that Chinese seldom send messages to currently offline contacts can be explained by the coherent of the high-context culture: meaning is found in the nature of the context. Quicker responsiveness ensures the conveyance of the context information during communication. Thirdly, high-context culture relies more on social cues, facial expressions, vocal tones and situational awareness to communicate effectively. Therefore, people in high-context culture use emoticons more frequently to increase respond speed in instant messaging.

5.2   Practical Implications

Based on the findings of this study, we provide the recommendations on designing internet-based cross-cultural communication tools for practitioners. In recent years, mobile instant messaging (MIM) has become more popular besides personal computer-based IM. The ability to access IM client at any time in any place makes the MIM important for business and cooperation. However, MIM has several characteristics different from personal computer-based IM. In a mobile environment,

the user is constrained by the bandwidth and the user interface (UI). MIM designers must face with the smaller UI to provide sufficient presentations of information on the interface. Thus, in this study, we provide design recommendations for computer-based as well as for mobile based cross-cultural communication tools. Four design recommendations were provided.

Provide group settings for collectivistic culture users. Provide functions of sending and replying messages to the entire group members. Users in collectivistic cultures have higher preference on multi-party chat than users in individualistic cultures. Thus, group function is much more important for them. Besides, the interaction with other group members, for instance, sending and replying to all group members are important for them as well.

For users in high-context cultures, provide online contacts and hide offline contacts by default and support as much as context information for the conversation. For users in low-context cultures, rank the contacts according to the communication frequency. The results of this study showed that users in high-context cultures seldom sent messages to currently offline contacts. Considering the limitation of the user interface for mobile devices, only provide the currently online contacts may be the best way to present useful information in limited mobile user interface. Besides, try to support context information for users in high-context cultures, for instance, providing the easy access to the whole log of previous conversations and showing the detailed time of the offline messages send by senders at the receiver's part.

A rich emoticon set is important for users in high-context cultures. Provide shortcut keys for most used emoticons. Users in high context cultures are more likely to use emoticons during instant messaging communication, thus a rich emoticon set is quite important for them to fully express their opinions and emotions during communication. For mobile device, providing shortcut keys to facilitate fast input of the emoticons can greatly help increase the speed of response which is important for users in high-context cultures.

Pay attention to the consistency of emoticons in different cultures. Provide translations of emoticons to users in low-context cultures when they communicate with users in high-context cultures. Emoticons may have different meanings in different cultures. Even the same meaning may be expressed by different ways. For instance, in China, people usually use emoticons "😄" or a simple combination of symbols ":-D" to express laughing out loud; but in western, it usually be expressed by using abbreviations "LOL". Thus, the design of emoticons should pay attention to ensure clear understandings of the meanings in different cultures. Moreover, when users in high-context culture and low-context culture communicate with each other, it is better to provide the translations of corresponding emoticons to users in low-context culture, for instance the translated words or the abbreviations.

5   Conclusions

This study focused on instant messaging, aimed to investigate the impact of cultural difference on instant messaging communication in China and Germany. The study showed significant difference in preference of multi-party chat, sending messages to currently offline contacts, and using of emoticons to increase the respond speed in

instant messaging communication between Chinese and Germans. The differences can be well explained by individualistic versus collectivistic culture and low- versus high-context communication style. The results further supported the contention to consider cultural differences in examining internet-based communication behavior for future research. Suggestions on designing effective cross-cultural communication tool were provided for practitioners. With the proliferation of instant messaging and other emerging communication technologies both in the personal computer setting and mobile device setting, more investigations especially for the mobile setting should be considered in the future.

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