What's it Worth to You?

The Costs and Affordances of CMC Tools to Asian and American Users

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ABSTRACT

In recent years, a growing number of studies examining how culture shapes computer-mediated communication (CMC) have appeared in the CHI and CSCW literature. Findings from these studies reveal that cultural differences exist, but no clear underlying explanation can account for results across studies. We describe several limitations of the theoretical frameworks used to motivate many of the prior studies over the past decade, most notably the assumption that tasks and media used in these studies are perceived similarly by participants from different cultural backgrounds. We then describe an interview study in which we asked 22 participants from America, Korea, India and China about their perceptions of media and motivations for media choices in different hypothetical settings. The results suggest cultural differences in how media are perceived, specifically, that the ability for media to support social in addition to task processes is more important for participants from China, Korea and India than for participants from the U.S. We conclude with some recommendations for enhancing CMC theories to account for cultural differences.

Author Keywords
Computer-mediated communication, CMC, collaborative work, intercultural collaboration, cultural differences

General Terms
Experimentation, Human Factors, Theory

ACM Classification Keywords
K.4.3 Computers and Society: Organizational Impacts: Computer-supported collaborative work.

INTRODUCTION
Over the past decade, the number of papers examining

cultural issues in computer-mediated communication (CMC) has risen dramatically at CSCW, CHI, and related venues. Investigators have conducted controlled laboratory studies comparing intracultural and intercultural CMC [e.g., 10, 25, 32, 33], field studies of communication in real organizations [e.g., 7], surveys of media use in different countries [e.g., 16] and careful ethnographic analyses [e.g., 19]. These studies consistently reveal important differences between cultures, or between intracultural and intercultural CMC.

Despite this plethora of intriguing findings, it has been hard to identify themes or explanatory frameworks that extend beyond each individual study, frameworks that might guide the development of novel collaborative tools for intercultural communication. In part, this is because there are still relatively few studies looking at any particular aspect of culture and CMC (e.g., particular tasks, cultures), so a coherent body of work does not yet exist.

More problematic, however, is the fact that studies have generated seemingly contrary results. For example, Setlock et al. [25] found that Chinese pairs talked more face-to-face than American pairs, and attributed this difference to the emphasis in Chinese society on relationship-building. The differences between American and Chinese pairs were minimal when they conversed via instant messaging (IM), presumably because the absence of social presence cues in IM disrupts the relationship-building process. Wang et al. [33], in contrast, found that Chinese participants talked *less* than Americans in a brainstorming task conducted via video and text chat, although they increased their responsiveness when paired with an American partner. Similarly, Kayan et al. [16] found that residents of Singapore and India reported greater use of the audio and video options in IM, and attributed this finding to a cultural preference for high-context communication. However, a lab study comparing different cultures' communication over audio and video conferencing found no differences between Asians and Americans interacting via these modalities [27].

Theory in Cross-Cultural CMC Research

At least two factors have hindered theory development in this area. First, many of the cultural theories relied upon for generating hypotheses and interpreting results are under specified. For instance, Hall [13] argues that Western cultures, particularly that of the U.S., are "low context," relying predominantly on words to express meaning. In contrast, Asian cultures, particularly those of China and Japan, are claimed to be "high context," relying on the situational context to make meaning apparent. However, so many factors are included under "situational context" (e.g., relationship between partners, the setting, the task, how long people have known each other, relative status, etc.) that it is difficult to predict how, in any given communicative setting, using any given task, low context and high context cultures will differ in their communication.

Second, virtually all the CMC theories relied upon for predicting how cultural styles of communication will be affected by the medium of communication were developed in Western cultures, using Western participants, and have rarely been validated cross-culturally. For example, Clark & Wilkes-Gibbs' [6] theory of conversational grounding and Clark and Brennan's [5] description of media affordances have played pivotal roles in studies of how technology shapes communication [e.g., 3, 12, 35, 36]. One of the key tenets of this theory is that people aim for least collaborative effort—the most efficient interaction—given the constraints of a given medium. One implication of this tenet is that word or utterance counts are indicative of the "success" of the interaction.

The universality of the goal of least collaborative effort was called into question by Setlock et al.'s [25, 26] studies showing that Chinese participants talked three times as much face to face as they did in IM, regardless of whether they were speaking in English or Chinese. The additional words in the face-to-face condition did not (unlike in CMC studies using American participants) indicate that they had difficulty interacting but rather, that they were pursuing a second agenda—relationship building and maintenance—in addition to the goal of completing the task.

Similar arguments can be made for other key CMC theories. For example, Daft, Lengel & Trevino's [8, 9] theory of media richness differentiates tasks along the dimension of "equivocality," or ambiguity. Exchanging facts from a database would be nonequivocal, whereas negotiating a settlement would be highly equivocal. Speakers are posited to choose richer modes of communication such as face-to-face or video conferencing for more equivocal tasks, because these tasks require conveying and reacting to subtle cues such as facial expressions or body position in addition to the verbal message. This theory becomes problematic when applied cross culturally, because for members of high-context cultures, virtually *all* tasks will be equivocal by Daft et al.'s definition, i.e., they will "… require hunches, discussion,

and social support" [9] as a basic element of high context communication.

Applying CMC Theories in Laboratory Studies of Cultural Effects

We conjecture that the confusing pattern of results from studies of culture and CMC, particularly laboratory studies, stems from several inherent limitations of this research. The general laboratory paradigm involves asking pairs or groups of participants to perform a specified task, in a specified medium. It is assumed that the task itself, as well as the affordances of the medium, is the same for all participants, but that cultural norms, values and communication styles influence how the medium is used to achieve the task. There are reasons to question both of these assumptions.

First, it is not clear that a task assigned in a laboratory study is conceived of as the *same* task by participants from different cultures. As we have discussed, even when an experimenter has defined a task as fairly unequivocal, it may not be perceived as such by participants from high context cultures. Furthermore, when investigators assign goals for tasks such as solving a problem, giving directions, or reaching a decision about a marketing campaign, it is assumed that participants will strive to achieve these goals, and only these goals. However, as Setlock et al.'s [25] studies showed, for individuals from high context, relationship-oriented cultures, participants may place greater importance on goals such as relationship creation/management and face management [e.g., 15, 30] than their fellow participants from low context, task-oriented cultures. Because goals differ across cultural groups, it is difficult to compare conventional measures such as word or utterance counts. At the least, these considerations call into question any direct mapping of word counts to "effort" in conversational grounding among speakers from high context cultures.

Second, it is implicitly assumed that the perceived affordances [22] of a medium for a given task will be the same for all participants (though this was never claimed in the original grounding theory, which claims that assessments of affordances and costs are shaped by individual participants' purposes [5, p. 147]). Video, for instance, affords visual and auditory co-presence, whereas IM affords opportunities for reviewing and revising messages before sending them. Depending on whether the task is heavy on information exchange vs. social interaction, communicators may prefer video or IM. This preference may be based on how a task is externally defined, but it may also be based, according to cultural theories, on people's subjective perception of the task.

Previous work on social influence within organizations has shown that perceptions of CMC tools are socially constructed, with members of groups sharing patterns of usage and attitudes regarding specific technologies [11]. This poses a potential difficulty in the analysis of the few existing such studies, which often confound national and organization culture. In Richardson [23], the universities

studied differed in both national and organizational culture, making the resulting media preferences difficult to interpret. It is reasonable to suggest that such influence would extend to cultural group membership, leading to cultural patterns of beliefs about the acceptability of various tools in a given situation. At the same time, it is important to remember that there are many aspects of "culture" at play in each comparison.

Issues pertaining to cultural and linguistic fluency can create different weightings of affordances for a medium than those of native speakers. For example, producing a spoken, face-to-face utterance, though perhaps physiologically easier than typing an email, may incur the costs of negotiating differing turn-taking practices [18]. Speaking in a foreign language may be higher in language apprehension and therefore less desirable for the non-native than writing in it, with the aid of dictionaries, privacy and time. Language inhibition may also impact an individual's willingness to engage in more in-depth conversation [20]. Typing is effortful, but the reviewability and revisability may be of great enough value to outweigh that effort.

Cultural norms and values may also lead to greater emphasis on other kinds of affordances, such as those that promote relationship building and smooth handling of delicate social interactions [e.g., 2, 14]. For example, Hancock et al. [14] describe how IM affords "Butler lies," or misstatements about one's actual whereabouts or activities in order to avoid or end social interactions while saving a partner's face. More generally, the management of face—retaining ones' own dignity and autonomy without detracting from someone else's [4]—can be supported more or less well by different media [e.g., 17], and be deemed more or less important by members of different cultures [15, 30]. Therefore, high culture may lead to a requirement of more cues in situations, and fewer in other situations, depending on the face needs in the interaction.

The Current Study
The goal of the current study is to understand, through in-depth interviews of participants from the U.S. and Asia, how culture shapes perceptions of the affordances of media and usage of these media in different communicative contexts. Our aim is to start developing an explanatory framework that will help reconcile the seemingly inconsistent results of prior studies, particularly laboratory studies, of intercultural CMC. One critical component of this framework is to identify the kinds of affordances media have for socially-oriented vs. task-oriented goals. We expect these socially-oriented goals to vary by the cultural background of interviewees, and that these goals will shape people's perceptions of the appropriateness of technology for both functional and social needs.

METHOD

Overview
We interviewed 22 people (6 from the U.S., 4 from India, 4 from Korea, 7 from China) about their media preferences, and the reasons for those preferences, in a variety of situations. The differences between numbers representing each culture are due to availability, despite best efforts to recruit from the general population and international and culture-specific campus groups. Participants were asked a series of questions related to their own experience and habits with the telephone (including Skype and other audio tools), Instant Messaging, email and social networks. The interviews were transcribed and coded according to the self-identified motivation for their preferences or usage patterns. The goal of this study is to identify how people are thinking about their options, and what paradigms they use to determine the affordances of various media.

Participants
Interviewees were recruited from two American universities. All were students studying within the US, fluent in English, who interacted regularly with friends and family in their native countries. Although this implies greater exposure to American culture, this requirement was established to ensure they were able to convey their preferences clearly in English, as opposed to individuals who may have more recently arrived in America—and therefore less acculturated—but struggling to communicate in English. Interviews took place in English because this is the language in which many intercultural collaborations take place. All foreign participants still have, and communicate regularly with, friends and family in their native countries. This particular population—foreign students in America with limited previous experience in America—was chosen to replicate the population used in the laboratory studies we hope to clarify.

Protocol
We devised an interview protocol which first systematically asked questions about the most common media: cell phone, land line, email and IM. We also asked about other communication tools such as Skype or Facebook. Interviewees were asked whether they used the media for talking to family, friends, professional or academic communication, customer service or other business purposes, etc. They provided information on where they used the media (e.g., a laptop or campus computer cluster, landline at home or cell phone on the road). They were then asked in an open-ended question what they liked, and what they disliked, about each medium.

After discussing each medium, interviewees were given a set of hypothetical scenarios (see Table 1). The specific scenarios were chosen to represent a variety of situation factors, such as threat to face, emotional intensity, and status and other relationship issues. They were asked what media they would use in each scenario, and why. They were also asked whether their choices of media would change depending upon how often they saw the other person.

Following the interview, participants completed a brief demographic survey. In addition to the usual demographic information (age, gender), the survey also asked for the students' nationality, self-identifying cultural group (if

How would you choose to communicate…

Needing to call off work?

An accident, death or illness to friends?

(To your boss) leaving your job?

Needing help with a task or assignment?

A mistake a colleague has made on a collaboration?

Running late to a meeting with a peer? A professor or boss?

A product complaint to a customer service representative?

Catching up with a friend who lives nearby? Abroad?

Table 1. Hypothetical scenarios used in our interviews.

any), native language and self-perceived English fluency. The goal of these questions was to establish a profile of how the individual identifies him or herself, culturally.

Analysis

Following each session, the recording was professionally transcribed. The transcripts were not identified by participant culture in order to avoid coder bias. All demographic information relating to the participants was retained in a separate file.

Transcripts were coded using NVivo content coding software [34] according to the following dimensions: cultural context, cultural or linguistic fluency, affordances for social interaction, or general preferences. These codes were developed via a bottom-up, open-coding process [29], where transcripts were carefully read, and important or frequently repeated ideas and explanations were noted for further analysis (see Table 2).

Code	Definition
Cultural Context	technology specific to a country or culture either in availability or usage
Fluency	communicating in a non-native language, or navigating non-native communication customs
Affordances for Social Int.	ability to manage social interactions, emotional context, or social presence.
Preference	comfort (not otherwise specified) with a tool for a particular group, situation, etc.

Table 2: Coding Scheme

Cultural Context

An answer or utterance was coded as "cultural context" if the interviewee specified that his media preference in that instance was due to cultural norms or expectations (e.g., *I*

mean, so back in China we actually use the cell phone a lot to communicate back and forth with each other, even some of the academic things. And here, things-- people like to use the email to communicate more than back in China), culture-specific communication tools (e.g., Korean "NateOn" instance messaging client), or cultural factors related to usability (e.g., ability to type in Chinese in one IM client versus another.)

Fluency

A comment was coded as "fluency" if the interviewee specified actual difficulties with second language use (e.g., *Being English as a second language person, sometimes people do not feel that they can understand completely what I'm saying, so it sometimes is better for me to type in an IM and they would understand it much better*.), knowing foreign customs and norms (e.g., *in China, ...I could easily go to their office… [b]ecause they only have one or two students at a time. But here, we have very large group [and] you don't know if professor is available or not at this time*.) In order to capture the element of linguistic and cultural anxiety as well as true fluency, this code was also used when participants identified fears of these misunderstandings occurring as the reason for their preferences.

Affordances for Social Interaction

The classification of Affordances for Social Interaction was used when interviewees noted how the technology impacted their ability to manage a social situation, or how that situation was altered due to the use of a technology. Affordance coding could be based on the mention of availabilities of cues (rich vs. lean), tendency for misunderstandings or ambiguity, awareness of others' environment or context or feelings of connectedness (e.g., social presence, feeling like partners are "right there.")

Preferences

The code of "preference" was used when interviewees mentioned either how they prefer to use a technology (e.g., prefer to use the telephone with individuals they know better) or what media they prefer to use to handle a situation (e.g., prefer to contact people they know less well using email.)

RESULTS

The results of our analysis shows several trends, which we believe to be valuable in understanding how people from different cultures view mediated interactions. The preferences expressed here show that while the participants do align with the basic tenants of which media are richer or leaner, they do not necessarily agree that richer media are preferable for ambiguous tasks. In contrast, leaner media afford better control over emotional and social content than richer media. Control over such information may be a more important media affordance for members of some cultures than for others.

Cultural Context

Preferences that were based on cultural context tended to fall into a few basic categories. First was a difference, or at least a perceived difference, about the appropriate use of a technology:

Email is the first one that I feel some kind of culture differences. It is really informal compared to the Korean one. The Korean one is a little bit formal than the Americans. Even though we know each other, it is for a formal. In America it is-- yeah, so I thought at first, the email conversation is really formal. Then I just write papers in the way I used email. Everyone said it is very informal, so I realized that email conversation is really informal. (Interviewee 1, Korean)

This issue also included differences in which technologies were appropriate to particular situations based on issues of politeness or social norms. For example, in response to a question about how to quit a job, one Korean interviewee stated:

I'm going to use email. I'm not sure. In Korea, I might use face to face communication, but here I might use email. Using the email only is kind of impolite in Korea. I'll just communicate in person. Here, email doesn't seem very impolite, so I think it's going to be okay in America. (Interviewee 1, Korean)

Similarly, an Indian respondent describing how he would deal with missing work, answered:

How would I tell my boss? I guess, in India, I used to text the person, because I was in that situation a couple of times. So I just texted the person saying that I can't come in today. But here, maybe, I'll just send an email. (Interviewee 5, Indian)

Another group of responses pertained to differences in patterns which were largely establish by habit, such as having an established group of speaking partners who usually use one media and another who usually use a different media. The usage patterns then developed based on the affordances of the habituated media. For example, one Chinese interviewee elaborated as follows regarding how she chooses between different IM clients:

By using MSN I'm supposed to talk like more about-- because they are my friends in china, different place from where I am right now. So I will talk to them like what my life in America. But when I'm using G-Talk I will talk more like because they're my friends here. So I just talk about like, "Hey, do you know the speaker's name or the speaker in today's seminar?" "Oh, I think he's pretty cool." Like, "Johnny Lee's topic's pretty cool," and like, "<inaudible> defense is really good," and something like that. Different way. (Interviewee 3, Chinese)

Similarly, a Korean interviewee provided the following response regarding when she typically uses the telephone:

I mainly use it to call my parents, and in fact I don't call any other friends outside the country. I talk with people in my class, and sometimes some friends who I know from high school, like a couple of friends that came to US. I call them, just to catch up with them, or to plan something, or find out where people are, things like that. With my parents, I call them about every week, usually every week, and they call me more, about two or three times a week, because they miss me. Sometimes, if there is something hard going on, they realize and call me more often. If they are busy, they don't call me enough. (Interviewee 1, Korean)

Another group of preferences based on cultural context relates to differences in infrastructure, cost, or other logistics about given media. For example, a Chinese interviewee had the following comment about why her use of text messaging decreased while studying in America:

Texting is another thing that I communicate people with. When I was in Hong Kong, I used a lot of texting. It was not as expensive as it is here, and also, everyone uses it. Maybe because I didn't get to see the bill first of all. When I'm coordinating stuff like going out, like whatever, when I was in Hong Kong, I would text multiple people at once and ask people what's going on. When I'm on my way to somewhere and getting late, then I would text people, "Hey, I'm coming slightly late," or, "Hey, where are you right now?" I would actually do it by text. However, when I'm here, it's more expensive to use, so I don't use as much. I still use once in a while, but yeah, also some people do not like getting texts, because it charges them. Some people actually block all the text incoming, so I don't use it as much any more. (Interviewee 2, Chinese)

Fluency

Issues related to fluency can be further divided into three basic types: language fluency, cultural fluency and fluency-based uncertainty. In the first case, the interviewee identified certain media as being more prone to misunderstandings and therefore incurring higher production costs given issues of accent or limited vocabulary. Several interviewees noted that they disliked the telephone based both on actual and perceived risk of misunderstandings. A Chinese interviewee had the following comment regarding concerns about communicating on-the-spot in English on the telephone versus using text-based technologies:

Being English as a second language person, sometimes people do not feel that they can understand completely what I'm saying, so it sometimes is better for me to type in an IM and they would understand it much better. So there are some communication issues. Other thing is, let's say if-- one of my friends really likes arguing something, like something philosophical and stuff. I'm better at organizing my thoughts when I'm writing, rather than talking, so that's another issue. I get better when it's not by phone call, but that guy really likes calling. (Interviewee 2, Chinese)

Similarly, a Korean interviewee provided the following response regarding why she uses the telephone with Korean friends but rarely American friends:

*I didn't use the phone call often with my American friends. It might be because of my lack of fluency of English. So I use phone call with my Korean friends a lot. (**Interviewee 1, Korean**)*

In the following example, a Chinese interviewee commented on one drawback to using email. In this case, the issue is more related to cultural fluency rather than linguistic fluency, since the individual is uncertain how to address the recipient. Practices vary widely for beginning emails even among native speakers, but such ambiguity may be especially unsettling for non-native speakers.

*Hmm. When it's recruiting and stuff, and people like that, that I'm not very sure about, I just say, "Hi." I cannot write-- I don't like writing people's name in the email when I don't know the person. This is a kind of cultural thing. You don't refer to somebody by their name when you don't know the person. It feels uncomfortable, so I just do, "Hi. This is blah, blah, blah." If it is my friends, I don't even start with hi or anything. Maybe I just go, "Hey!" But many of the times, I just start right away. (**Interviewee 2, Chinese**)*

Other interviewees identified that there are emotional costs, as well as practical ones, that play into fluency based preferences. Interviewee 2, from China, elaborated that her concerns extend beyond whether or not the communication problems can be overcome, but also how she feels about the interaction:

*More like-- also, there is some kind of shame factor. I feel-- I don't want them to not understand me. (**Interviewee 2, Chinese**)*

Affordances for Social Interaction
Unlike the cultural context and fluency issues, preferences related to affordances could apply to interviewees from any culture. Typically, the responses contained within this code dealt with the ability to use the attributes of a media to promote or control emotional or relational information. In the following example, the Indian interviewee is responding to a follow-up question for clarification on why he does not like to use the telephone for people he doesn't know well. The answer suggests concerns about the status of the relationship at the end of the conversation. This supports our contention that multiple goals are important in media perception, including task (in this case, a job interview) and relationship/face management.

*Yeah, face to face. Because you can never know, like, if they're listening to you or, like, what's happening with them. If they're, like, satisfied with your answer or nothing. You don't get any feedback from them on the phone. At least, it's not a helpful feedback. If I'm talking to you and, if, like, I say something and you don't seem interested, I might say something else different. But if it's on the phone, then, I don't know, like, what's happening with you. (**Interviewee 5, Indian**)*

This view was shared by one American participant, who expressed concern that using an email as a first contact does not provide enough feedback to know where you stand with subsequent interactions.

*I guess the- when I check my e-mail really often and other people sometimes don't so if I'm sitting there I don't- I'm not really good at estimating how long I should wait to follow up on the e-mail. Maybe they didn't check it or maybe they just- it didn't go through. I always have these concerns like the e-mail didn't go through and it's this big, important e-mail I have to send but yeah, basically that, and then also you don't really get a sense of the person when you read an e-mail so you don't really know. If you're going-- If you send an e-mail and then you go in for a meeting with them, you really don't know exactly what to expect just based on the e-mail. (**Interviewee 10, American**)*

A number of the answers related to the ability of a media to support emotional information, such as sadness, embarrassment, offense, etc. Certain media were noted as being particularly supportive of emotional information, as conveyed via voice tone, pitch, etc. In the following example, an Indian interviewee commented on the use of telephone for meeting the social obligations of face-to-face conversations:

*Well, the telephone is, also, like, helpful when there are few things, which you don't want to say, like, face to face. But then, you want the pitch to be known, like, or the emotions you want to express. Then, telephone is the best thing, if you can't say it face to face. (**Interviewee 5, Indian**)*

Interestingly, interviewees' media preferences were concerned not only with conveying emotional and relational information, but also with intentionally veiling it. On several occasions, a media was preferred because it assisting in masking or neutralizing emotional cues which may be somehow upsetting to the relationship. In the following example, media preference is based on mitigating, but not eliminating, emotional information through media qualities. In this example, the same Indian interviewee is discussing why her use of Skype is fairly minimal:

*Yeah, like, you can't be there or you don't want to be there to, like, few things. I don't want my parents, like, see me crying or nothing like that. But then, the sadness, maybe, it's okay if they know that I'm sad from my voice. But not, like, want them to, like, see me sad. (**Interviewee 5, Indian**)*

In the following two examples, one Asian and one American, the interviewees discuss the benefits and social freedom of the anonymity of IM. In the following example, a Chinese interviewee discusses feelings of freedom from the usual social constraints when using text-only media:

Something good about [IM] is that… it doesn't show – you can be as emoticons or whatever, because you don't get to see the other reactions. You get to more freely express what you are thinking without caring too much about what the other person thinks. **(Interviewee 2, Chinese)**

An American interviewee also finds benefits to reduced social cues for handling awkward conversations:

Yeah. So I would say it's almost easier- I've found lately it's kind of easier to go in to deeper discussions that are harder to do face to face via Chat or IM. **(Interviewee 10, American)**

In this final example, an Indian interviewee is discussing her frustration trying to discuss a colleague's mistake in person. Her phrase "even face-to-face" suggests that she assumes that would be the optimal approach. However, she is considering email for the same reasons as the previous individuals – that there may be benefits to eased face management obligations in this case.

Yeah, probably. It's, like, they just don't want to accept or admit [having made a mistake.] I don't know. I don't see, like, how I can tell them, even face-to-face doesn't work. I'm not sure. Maybe, I should try an email **(Interviewee 5, Indian)**

Preferences
Interviewees cited a number of reasons why they might prefer one media to another in a given situation. One frequently echoed was the pervasiveness of the social contact into other areas of life. In the first example, this American interviewee dislikes that the phone requires a physical interruption of whatever else he was doing.

Plus, when you're on the phone it kind of limits you from doing other stuff, which sometimes is a good thing but sometimes is down thing, like bad thing, because, you know, you have to hold it up-- unless you have one of the-- I sometimes use the earpiece thing. But I like, you know, maybe kind of-- I mean doing something if it's folding laundry or something, you know, something productive. **(Interviewee 8, American)**

This American interviewee is commenting on the constant presence of "people" (people available for chat) while he is supposed to be doing other things.

Yeah, again, it can be really distracting, because it's so nice to see someone's face that you can lose track of time. Basically, all of these forms of communication are just other things that can be really distracting. But on the other hand, they bring people together. So it's nice. **(Interviewee 9, American)**

The common thread between these two complaints is that the media – phone and IM – interrupt the person in another setting, dividing his attention between the real environment and the social one. A related issue pertaining to interuptability was also mentioned on several occasions. For some, media which give availability indicators were preferred because they reduce the chances of unanswered overtures or badly timed interruptions (placing responsibility with the recipient to identify correctly.) In the following example, and Indian interviewee discusses the benefits of availability indicators:

It shows me that the person is there. With phone, unless, you call them, you don't know if the person is available or not. It's the same with email, too. But the chat, you can see the green dot next to their name, saying this person is available right now. **(Interviewee 5, Indian)**

Others, such as the following Chinese respondent, indicated concern with the trustworthiness of the indicators, suggesting they may give false confidence.

You can catch people whenever you like. So you can see the others like who is around and who is not. And yeah. It's interesting. Yeah, you can find somebody's always there and you can try to talk to them. The things I like is you can get to know the others better, right? But the things I hate is you cannot really get to know their status because somebody's always have their status on like I'm available in green. In green, right? But they're not really in green. When you talk to them they just didn't answer and you have no idea. **(Interviewee 3, Chinese)**

This concern about the reliability of availability indicators was echoed by several interviewees. In some cases, they were concerned about whether it is really safe to interrupt the person. In others, they were concerned or frustrated to find that the individual did not actually respond and so was apparently not available.

DISCUSSION
It is clear that the Asian respondents do incorporate additional considerations into their decisions about the appropriateness of or preference for various media, even when these considerations do not necessarily lead to a difference media choice than that of the Americans. Asian interviewees gave more thought to how their media choices may affect relationships, what social norms or expectations may be involved in the choice, and the like.

This project sheds light on what types of additional affordances may be relevant to the interpretation of inter-cultural dialogue. For the Asian interviewees, both the goal of the interaction and the affordances required to achieve that goal may differ from those used by the Americans. The framework of "least effort" from grounded theory may be retained, but revised to accommodate a potentially different goal. For the Asian respondents, the best media for a situation is the one that least effortfully accomplishes a communication goal–a goal that includes a deep investment in the management of socio-emotional information.

Our data did not find that Asians had notably different media preferences than Americans. Rather, it supported the

idea that Asians give more thought to the role of emotional information, both in terms of when and how to promote it and when and how to veil it. This finding fits well with cultural theories of high and low context interaction, suggesting that managing the emotional valiance and resulting social consequences (e.g., guilt, shame, concern, politeness) of the interaction is part of the context of the interaction for Asian respondents.

The variations within task, threat to face, intensity and social dynamic within existing CMC result may explain the current lack of a coherent story, as the emotional affordances would vary widely across these factors. Emotional affordances, as our results show, are not always positive or negative. The desire to promote or minimize emotional information is determined by which is in the best interest of the social goals of the interaction.

Consider, for example, the conflicting results of the Setlock [25] and Wang studies [33] described earlier. Incorporating emotional affordances it is possible to unify these results. It is possible that Chinese talked more than Americans in a negotiation task in IM, and less that Americans in a brainstorming task in IM, because the social requirements differed. A negotiation task requires cooperation, which in turn requires at least short-term face management. To accomplish this, Asians make use of the quick but emotionally veiled qualities of IM to provide and respond to feedback. A brainstorming task is not inherently social and so face management is less important to the task and – by virtue of the emotionally veiled medium – is also less important socially (since the partner cannot see you.) So, with both potential requirements to manage the relationship removed, the Asians do not put in more effort than is required. This is, of course, just one possibility. The concept is that emotional affordances are one area in which intercultural collaborations may stretch the boundaries of the current theoretical paradigms.

CONCLUSION

The specific relationship between cultural communication traits and the use of CMC continues to be a very complex interaction. The results of my interviews have shed some light on the ways that people from different backgrounds think about media, and how they make and interpret their media choices. We can now say that for both Asian and American CMC users, richest communication is not always preferred. Asian CMC users, in particular, make very deliberate choices about how to use media qualities to both convey and mitigate emotional information, depending on which is most appropriate to the situation and the relationships.

In addition to managing emotional content, Asians interacting with Americans may also make deliberate choices about how to use media qualities to minimize the effects of cultural or linguistic uncertainty. Again, management of the emotional content (embarrassment, perceived competence) and subsequent social impacts are considered as goals of the interaction right along with the nominal goal of the conversation.

These insights demonstrate how CMC theory can be expanded to incorporate multiple and changeable goals, such as have been demonstrated in cross-cultural interactions. Revised and expanded theories, in turn, will help researchers to identify common threads in seemingly disparate results – such as the role of relationships–and plan interventions which take these needs into account.

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