Culture that Works

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ABSTRACT

Social science research is central to creating computer-mediated systems that teach cross-cultural competencies. In the HSCB CultureCom project, which uses formal microsocial models to improve artificially intelligent software agents, ethnographic and sociolinguistic research refined the formal model and produced annotated, decision-branching dialogs that served as coding input. This paper describes the anthropological methods used to develop and validate project data, and shows how the accumulation of subtle decisions and linguistic interpretations in cross-cultural encounters can lead to dramatically different outcomes.

Keywords: cross-cultural, ethnography, linguistics, models

1 THE PROBLEM AT HAND

Every cross-cultural conversation contains differences in beliefs, values, feelings and goals, most of them outside the awareness of the people involved. Participants – who have been socialized into different cultural systems – bring their own norms, expectations, and knowledge bases to the conversation, along with their own emergent interpretations of the particular situation. The problem is that language socialization is almost completely implicit (Schieffelin and Ochs, 1986), and if something goes wrong, participants may sense it, but not be able to analyze why, or to take corrective action in real time. They may misinterpret their interlocutors' intentions and utterances, and their own well-meaning attempts to produce "appropriate" speech may be misinterpreted in turn. Cross-cultural training is

designed to raise awareness in trainees that such potentially disruptive differences will likely occur, and then show them how much differences might be handled.

This paper describes the kind of ethnographic and sociolinguistic research required to make such a training system accurate and realistic. The research described was part of the CultureCom project at Alelo, a project to design computer-based cross-cultural training that uses artificially intelligent software agents to simulate encounters with virtual locals in a visually realistic task environment. For more on the computational aspects of the project, see Hobbs and Sagae, 2011, and for more on the artificially intelligent software agents, see Sagae et al., 2011.

Trainees begin a session knowing the task that needs to be done. The encounter begins with greetings and proceeds into an interaction where the trainee tries to accomplish some task-specific goal. The conversation can develop in any number of ways, depending on how the computational agent and the trainee interpret and respond to what the other says. The session can result in great success, with goals reached and positive feelings all around, end catastrophically, or conclude somewhere between those two extremes. The system teaches the trainee that various outcomes are possible, that the reasons for the variation can be figured out, and that those reasons are what we can broadly and cautiously call "cultural."

Building such a training system requires rich information on the kinds of "cultural" differences that might pose problems for an American trainee. This has been a major issue with other HSCB projects that use novel scenarios and dialogs for computational cultural models. Often, the same computer scientists who design the model are the ones who generate the relevant scenarios and then derive and write dialogs to populate and test it. When computational models are created using self-generated norms and tested using self-generated dialogs rather than gathering and developing data using the methods of cultural and linguistic anthropology, we find a range of problems. For example, cultural norms for greetings and leave takings often reflect the norms of the computer scientists rather than the members of the society being modeled; forms of address are often based on American norms and are not suitably polite and honor-marking; statements that are face-threatening in the modeled culture are presented as reasonable; and hospitality, courtesy, and face-saving actions are inaccurately represented.

Clearly, knowledge of cultural differences in task-based communication must be researched rather than assumed. Contextualized linguistic analysis remains the provenance of linguistic anthropologists and sociolinguists, whose findings can then be applied in cross-cultural training programs. Effective modeling requires accurate information about real tasks, how they unfold, and the misfires that are likely to occur.

The training dialogs developed for the CultureCom project represent both culture-general categories and culture-specific instantiations of behaviors within those categories. On the culture-general level, we asked, what are the general domains where a cultural mismatch might occur? And on the culture-specific level, what are the specific ways these mismatches are expressed? These questions were addressed by focusing on three major culture-general categories relevant to task interactions: (1) promises and commitments (cf. Searle 1969); (2) greetings and conversational openings (cf. Duranti 1997), and (3) directives and (in)directness of

speech (cf. Blum-Kulka 1987). In the first year of the project, the focus was on promises and commitments in the example location of urban Afghanistan, and in the second year, on greetings and directness in urban Colombia. The trainee was presumed to be an American and speaker of American English, and the language of interaction was chosen to be World English – training global workers to become communicatively competent when interacting with local people rather than grammatically competent in local languages.

The main project goal for the linguistic anthropologists was to create local conversational agents that are sufficiently accurate and realistic to be suitable models for training, and sufficiently robust that trainers and educators who are not specialists in agent modeling can use them to create and populate their own scenarios. We used established anthropological methodologies to develop data, first synthesizing and analyzing primary and secondary source data on interactions in urban Afghanistan and Colombia, and then conducting, annotating, and analyzing ethnographic and sociolinguistic interviews with native cultural consultants. This data development resulted in several important inputs for the computational model: (1) analyses of cultural norms and expectations for the specific locations; (2) areas of congruence and mismatch between American and local conversational norms; and (3) branching dialogs where critical cultural differences appeared, annotated to show speaker intention, listener interpretation and internal state. The pragmatic analyses and dialogs that emerged from the background research and interview data were then validated by cultural consultants: Pashto-English bilingual natives of Afghanistan with work experience in both Afghanistan and the United States, and Spanish-English bilingual natives of Bogotá with work experience in both Colombia and the United States.

We will focus here on dialogs developed for Colombia, which were designed around two major culture-general areas, greetings and directness. Phenomena covered in the dialogs, for readers familiar with linguistic terminology, include honorifics and address terms, compliments, directives, criticism, sarcasm, joking, and code-switching. When combined with the annotations, the dialogs model both external linguistic actions and internal states. They come in two sets, with the first set, corresponding to Scenario 1, temporally preceding and feeding into the second set, which corresponds to Scenario 2. One dialog in each set features an American interlocutor who behaves in a locally culturally competent way, and the other dialog features an interlocutor who behaves less competently. Combined, the two dialog sets contain eight major decision branching points – eight places where cultural misunderstanding can have a significant effect. The "good" dialogs shows consistently adaptive choices with a positive outcome, while the "bad" dialogs show consistent ethnocentric choices with a negative outcome. At the conclusion of the two paths, there are significant differences in internal states for the interlocutors, for example, in terms of rapport, trust, and respect, and in what has been and will be accomplished operationally.

No speaker is generic, or can represent all people – there is really no such thing as a dialog between "an American" and "a Colombian" – so these dialogs represent interactions between two specific people engaged in specific activities. The scenarios and dialogs, refined with the assistance of cultural consultants, are designed to represent realistic actors and activities, and to address typical issues that

arise in cross-cultural work encounters. We therefore controlled for context as much as possible, so that variability could be limited to performance in the interactions. The following sociodemographic, sociolinguistic, and relational variables for the two speakers in the dialog, John and Diego, are fixed. (1) *Geographic origin*: John is American, Diego is Colombian. John is of European descent, and is from a small city in the Midwest. He has an unmarked American dialect and the interactional norms of that region. Diego is from Bogotá, and has the interactional norms of that city. His native dialect is high prestige, not only in Colombia but also more widely in Spanish-speaking South America. Note that within Colombia there is significant regional variation in interactional norms, and these dialogs and pragmatic analyses are specific to Bogotá. (2) *Education*: Diego and John have about the same level of education, that is, college with perhaps some graduate training. (3) *Socioeconomic status*: Diego and John come from similar socioeconomic backgrounds, and are both middle-class and white collar. In Colombia, this is called *profesional*. (4) *Age*: Diego and John are approximately the same age, late twenties to early thirties. (5) *Relative status*: John and Diego are on the same level, professionally. Diego is an architect in a small firm, and John is a project coordinator working with him on an aid project that involves a new building. (6) *Solidarity/ confianza*: John and Diego have been working together for a few weeks. They are friendly, but do not know each other too well. There is a distinctively Colombian concept related to solidarity known as *confianza*, not directly translatable into English, but involving reliance, trust, and support, and characterizing long-term friendships and good family relationships (Fitch 1998). This is a moderately underspecified concept, and can be a locus of potential interpersonal problems and focus of discussion, often about how high the level of *confianza* is in a relationship, and how it does or does not license certain kinds of talk. High *confianza* allows people to say things that might be interpreted as overly intimate or overly face-threatening in a relationship with low *confianza*. Here, in the relationship between John and Diego, the level of *confianza* is on the lower side, with the prospects of being higher – it is low *confianza* because of low familiarity, not because of negative assessments on the part of either dialog participant. (7) *Location*: Diego's office in Bogotá. (8) *Participant framework*: Dyadic. There are only speaker and interlocutor (who change roles with each conversational turn); there are no auditors, overhearers, or eavesdroppers. (9) *Channels:* The conversations are completely unmediated, and only face-to-face. (10) *Genre:* The discourse genre for all the dialogs is the task-oriented work conversation. Variable within the dialogs are the ends and goals, act sequences, utterances, internal states for John and Diego, and results after the dialogs' end.

The library files for conversational agents include "culture files," implementations of the culture-general categories, which include aspects of cultural knowledge that are reasonably clear to anyone who has been socialized into that speech community, cultural knowledge that will appear normative and unremarkable. People socialized into other speech communities, however, arrive without this cultural knowledge, which can make it difficult to function effectively while maintaining rapport with local colleagues. There are twelve components from the Colombian culture file that are especially relevant to the dialogs. The John who demonstrates cross-cultural competency ("Good John") adjusts his behavior so that it is aligned with the norms associated with this cultural knowledge, while the John

who is less cross-culturally competent ("Bad John") does not. Since the two scenarios take place several weeks after John has arrived in Colombia and begun his working relationship with Diego, the dialogs presuppose that he has acquired several elements of the culture files, for example, that *Doctor* is a widely used honorific address term used with members of the *profesional* class. Other elements of this cultural knowledge are meant to be acquired during the dialogs, and are hinted at or explained by Diego, the Colombian conversational agent. Acquiring this knowledge and behaving in accordance with Colombian culture file norms leads to significantly better end results for Good John, with both increased task efficiency and increased rapport and trust between the participants. By contrast, Bad John, who does not acquire this knowledge either before or during the dialogs and behaves according to only American cultural knowledge and interactional norms, ends up in a situation where things don't get done as fast, or at all, and where trust and rapport levels are not good.

The Colombian cultural file components most relevant to these dialogs are as follows: (1) In order to have a productive meeting, it needs to be scheduled more than an hour away from the day's beginning and the day's end. (2) In order for a meeting to begin at the time desired by its organizer, it should be officially scheduled to begin half an hour earlier. (3) *Later* is an ambiguous term, and should be disambiguated if necessary. (4) Work relationships are also considered friendships, and greetings need to recognize this. They should include positive comments, compliments, or inquiries about the health or state of mind of the interlocutor and close relatives. (5) *Doctor* is a viable address term without a last name following it; *Arquitecto* (Architect) is not. (6) In a work environment, underlings probably need to be checked up on regularly and maybe even prodded in order to produce what's necessary in a timely fashion. (7) People generally do not ask directly for help. (8) You often need a *palanca* (Spanish 'lever'), an influential connection with leverage who is doing you a favor, to facilitate bureaucratic procedures. (9) To preserve a relationship, one should ignore directives – linguistic expressions, often orders or instructions, that direct people to do something – rather than challenge or question them. (10) Confrontation avoidance is the norm, although participants in situations that have reached a high degree of tension may explode into vehement and angry outbursts. More usually, critiques are expressed through mild or strong hints, or by joking or using sarcasm. In other words, there is high indirectness when disagreeing with an interlocutor or engaging in other potentially face-threatening behavior. (11) Hierarchy plays a role in indirectness, and being direct with an interlocutor may mark the interlocutor as hierarchically lower than the speaker. (12) When using directives, bare imperatives are dispreferred, and may appear only in very intimate relationships, such as when speaking with close family members or romantic partners.

The dialogs have the same beginning state, but the end results of the culturally competent and culturally less-competent paths are markedly different. The first set of dialogs cover Scenario 1, in which John and Diego set up a meeting to finalize blueprints, and the second set of dialogs cover Scenario 2, which takes place a week after the blueprints have been finalized, in which John and Diego discuss the

scheduling and logistics of submitting their work permit. In the interest of space, we will focus on Scenario 1, where John goes to Diego's office to set up a meeting to finalize the blueprints for the project, which are needed to submit the application for a work permit for construction. By the time he reaches Diego's office, he's already talked to a subordinate of Diego's, Beatriz, who has said she'll have her part ready by the meeting. The dialogs for this scenario are structured such that there are five branching decision points for John. These are (1) greet Diego appropriately, (2) schedule a correct meeting start time, (3) schedule a correct meeting length, (4) arrange or agree to follow-up check-ins with Diego's subordinate so that her work gets completed on time, and (5) decide what "later" means, so a follow-up phone call will be timed appropriately.

Good John performs all of these tasks culturally appropriately – although not perfectly or with native-seeming cultural knowledge – resulting in a positive end state. He greets Diego appropriately, understands the implication of Diego's indirect critiques, takes Diego's indirectly phrased suggestions for meeting time and length, accepts that Beatriz needs monitoring, and clarifies what Diego meant with the word "later," so that he can follow up at an appropriate time. Here is an excerpt of the annotated dialog for Good John for Scenario 1.

Diego: When do you want to meet?	John has waited for Diego to ask about the meeting time. This will possibly be seen as respectful by Diego (thus moving his internal state in a positive direction), but could also be coded as neutral.
John: I was thinking Thursday at 8 am.	Good: John is indirect. There's no grammatical way to do this in English as a bare imperative, but there are less-mitigated directives (e.g., Let's meet Thursday at 8.). This indirectness fits local norms.
Diego: So early! Do you get up at dawn just so you have time to sit and drink your *cafecito*?	Diego is critiquing through indirectness, joking, and exaggeration, all common Colombian pragmatic strategies. This is a Colombian way to say, "No way, that won't work, it's too early."
John: Oh, do you think it's too early for people? Hmmm. Maybe I could shift my schedule around. I was thinking we could meet from 8 to 9. But I suppose we could meet from 9 to 10.	Good: John understands that the joking is encoding resistance and a critique of his suggestion. He changes course, and accommodates Diego – and local norms – with a change in timing.
Diego: I think starting at 9 will work better. Do you think we can cover everything in an hour?	A critique/suggestion using indirectness once more. The Colombian way of saying, "You know people aren't going to make it to the meeting at 9. We'd better block out 90 minutes of their time if we want 60 minutes of their work." Requires John to have an understanding of local norms with regard to clock time, or to get there via deduction.
John: Sure, if we're efficient. No problem.	Bad: Doesn't get the message encoded in the implicature of Diego's question.
Diego: Hmmm. What if we scheduled 90 minutes. Just in	Moves towards more directness. But it's still mitigated: question form, use of "we" in the directive (although it

case?	would be difficult for him to form a "you"-based directive here).
John: Well, I was hoping to be back in my office by noon. You really think we can't finish things up in an hour?	Good: 1. Explains his reasoning for the proposed scheduling rather than withholding information and expecting his desires to be enough. 2. Checks in for Diego's opinion (although John's still pushing towards his desired outcome, a 60-minute meeting).
Diego: I think it is best to give us the time. Things can be very unpredictable, you know.	Still pretty indirect here. He doesn't come right out and talk about Colombian time orientation, which will be seen as lateness from an American perspective.
John: I guess you're right. And if we finish up early, I can leave early. Ok, let's call it Thursday from 9 to 10:30.	Good: We've reached the outcome that will create the circumstances for a meeting that will get things done.

By the dialog's end, the five decision points have been responded to appropriately. The meeting is scheduled for the appropriate time, and there should be sufficient productive meeting time, as Colombians' time orientation has been taken into account. Diego's subordinate, Beatriz, will be monitored and helped along until she finishes her part in time for the meeting. The meeting should be productive, and they should achieve their goal of finalizing the blueprints, a necessary part of their submission for the work permit application. In addition to these external actions, the internal state for the conversational agent at the dialog's end is more positive than at the dialog's beginning. John has greeted him in a way that marks them as friendly co-workers, has understood his critiques and suggestions, if not always immediately, has not used bare imperatives that would mark him as hierarchically lower, and has allowed himself to be guided, making for a more positive outcome. The levels of rapport, trust, and solidarity have increased.

Bad John, by contrast, does not perform any of these tasks culturally appropriately. He greets Diego inappropriately, using what he thinks is an appropriate honorific, *Arquitecto*, that actually marks the addressee as hierarchically lower when used without a last name. He doesn't understand the implicature in Diego's indirect forms of critique and resistance to his suggestions, and doesn't mitigate his directives enough to meet Colombian norms, such that they sound vaguely insulting. In addition, John doesn't directly ask for Diego's input as a native guide. Here is an excerpt of the annotated dialog for Bad John for Scenario 1.

Diego:	When do you want to meet?	
John:	Thursday at 8 am.	This is not sufficiently mitigated, and is a shade too direct to be read as polite by someone in Bogota.
Diego:	So early! Do you get up at dawn just so you have time to sit and drink your *cafecito*?	Diego is critiquing through indirectness, joking, and exaggeration, all common Colombian pragmatic strategies. This is a Colombian way to say, "No way, that won't work, it's too early."
John:	We have a saying in America: "the early bird gets	The metalinguistic cultural comparison and discussion is mildly good. But it is bad that he

	the worm." I can drink my coffee during the meeting. We need to get things done so our application is ready.	doesn't get Diego's critique, and so doesn't change the meeting time to one that is more appropriate.
Diego:	Ah. In Colombia, we like our coffee before our meetings. You know how Colombians love their coffee. A cup in the morning while chatting with a friend, and then we're ready to start our day.	More indirectness from Diego. Here the ostensible focus is on coffee, but the key is in the final sentence, where the implicature (maxim of relevance) is that this is a necessary (or common) start to the work day. So the meeting shouldn't be at 8.
John:	Yes, you people really do like your coffee! We can all drink our coffee during our meeting. So let's meet Thursday from 8 to 9.	Bad: doesn't get the implicature. Sticks to the American prioritization of task accomplishment over relationship maintenance (one of the mismatches between Colombians and Americans).
Diego:	Do you think we can cover everything in an hour?	Indirectness once more. The Colombian way of saying, "You know people aren't going to make it to the meeting at the given start time. We'd better block out 90 minutes of their time if we want 60 minutes of their work."
John:	Sure, if we're efficient. No problem.	Bad: Doesn't get the message.
Diego:	Hmmm. What if we schedule 90 minutes? Just in case.	Moves to more direct. But it's still mitigated: question form, use of "we".
John:	Well, I need to be back in my office after the meeting. Why do we need 90 minutes? It's a very straightforward meeting. We're just finalizing the blueprints.	Bad: doesn't take Diego's more direct suggestion that meeting slot needs to be 90 minutes to accommodate latecomers and other issues. The question is rhetorical, not a request for input.
Diego:	I think it is best to give us the extra time. Things can be very unpredictable, you know.	Still pretty indirect here. He doesn't come right out and talk about Colombian time orientation, which will be seen as lateness from an American perspective.
John:	I don't know. I'm just so busy. I don't have really have time to spare. Why would we need 90 minutes for something that shouldn't even take an hour? It seems like too much.	Bad: Doesn't get Diego's hints. His dismissiveness should negatively affect Diego's internal state. American-style prioritization of the individual and individual's needs (he's busy; the meeting should be at his convenience and work efficiently, the way he thinks it should work).
Diego:	Ok. We can try and meet on Thursday from 8 to 9.	Concedes. Internal state by this point should be pretty negative – hasn't been listened to and his suggestions have been dismissed outright.

By the dialog's end, the five decision points have been responded to inappropriately. The meeting is scheduled for an inappropriately early time, there will not sufficient productive meeting time, and Beatriz will not be monitored, making it unlikely that she will complete her work in time for the meeting. In

addition, the conversation agent's internal state at the dialog's end is more negative than at the dialog's beginning. Through greetings and directives, John has marked him as subordinate, and has not only not asked for his input, but ignored all of his suggestions. The levels of rapport, solidarity, and trust are definitively lower than for the conversational agent in the Good John scenario.

The dialogs in Scenario 2, in which John and Diego discuss the logistics of submitting the project work permit, continue in a similar vein, with three branching decision points for John: greeting appropriately, scheduling the appropriate amount of time for the permit to go through the approval process, and deciding if they should use a *palanca*, a locally influential person, to facilitate the process. This requires John to understand indirectly expressed critiques, be indirect in his own directives, and be open to doing things in a locally appropriate way, as long as it doesn't violate the ethical or legal standards of his employer. Good John make the right decisions, Bad John makes the wrong ones, and this leads to dramatically different outcomes in both external actions and internal states. In the Good John branching, the meeting scheduled in Scenario 1 was productive: there was enough time to account for latecomers, Beatriz had finished her tasks, and the blueprints were finalized, allowing them to move to the next stage. This feeds into Scenario 2, which ends with the project on the right track: the *palanca* will almost certainly speed up the permit process, allowing the project to stay on schedule, and avoiding scheduling issues and potential relationship problems with contractors. In addition, John and Diego's interactions have led to increased rapport, trust, and *confianza*. John's expressions of respect, indirect directives, recognition of Diego's knowledge and competence, and willingness to take local norms and practices into account have made the collaboration run more smoothly, and increased their solidarity.

By contrast, in the Bad John branching, the meeting scheduled in Scenario 1 did not go well: the unmonitored Beatriz did not complete her work before the meeting, and there was not enough productive meeting time to make definitive progress, requiring a second meeting to complete the task. This feeds into Scenario 2, which ends up with the project on the wrong track: they are already a week behind in submitting the work permit, and without a *palanca*, the permit process may take a very long time, which may cause scheduling and relationship issues with contractors. In addition, John and Diego's interactions have led to decreased rapport and *confianza*. John's directives are too direct, and mark Diego as subordinate. He has not expressed respect for or recognition of Diego's knowledge and competence – in fact, he seems to suggest that Diego is incompetent. His inability to recognize hints or ways that things are said and done differently in Colombia mean that the collaboration is not efficient, smooth, or productive. This is reflected in Diego's internal state, with decreased trust and solidarity.

3   CONCLUSIONS

Using annotated dialogs with pragmatic analyses helps demonstrate how small, subtle, mundane decisions in task-oriented cross-cultural conversations can

accumulate and lead to dramatically different outcomes. After two scenarios with just eight decision points and a limited task scope – scheduling meetings, monitoring subordinates, and asking for help with bureaucracy – the differences in external results and internal states are significant. Good John's recognition of indirectly phrased critiques, requests for input, hierarchical marking of his interlocutor as on his level, and ability to take local norms into consideration has led to efficient collaboration, a project that is on track, and a positive, respectful, and improved working relationship. Bad John's inability to recognize indirectly phrased critiques, absence of requests for input, inadvertent hierarchical marking of his interlocutor as subordinate, and refusal to adjust to local norms has led to inefficient collaboration, a project that is already delayed and promises to go further off track, and a working relationship that has degraded.

Cross-cultural work conversations are the site of frequent, small decisions, decisions that require the ability to understand and adapt to local norms. Cross-cultural training programs can model variation in norms, expectations, and linguistic performances, showing trainees where mismatches and misunderstandings may occur, the form they might take, and the ramifications of adapting or not adapting behavior to local norms. Accurate and realistic cultural modeling and conversation agent development can only take place using data and dialogs that have been developed and validated using standard methods of ethnographic and linguistic research and analysis.

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