Do You Read Me? Perspective Making and Perspective Taking in Chat Communities

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Abstract:

We present a study of synchronous, text-based chat communications between customers and customer service representatives (CSRs), and examine the process of coordinating perspectives through perspective making and perspective taking to build shared understanding of context. Using a cultural hermeneutic lens and its four contextual relations, we studied more than 4400 chat messages generated during a two-year period. Successful coordination of perspectives occurred in eighty percent of the exchanges, in spite of conversational incoherence introduced by the chat technology. When coordination of perspectives between customers and CSRs failed, it was due to one or a combination of three factors: the customer's inability to successfully communicate intention, lack of customer/CSR shared understanding of reference about what was being discussed, and/or misinterpretation of each other's identities. This suggests that technology solutions to reduce conversational incoherence may not be of as much value as improving how people articulate intention and create shared reference. Finally, we demonstrate that contextual relations in cultural hermeneutics offer an analytic device and vocabulary to discern exactly what is missing when technology-mediated communication breaks down.

Keywords: Online chat, computer mediated communication (CMC), cultural hermeneutics, textual analysis, perspective making, perspective taking

A recent trend in customer service is web-enabled synchronous dyadic chat, which supports text-based discussions between company representatives and customers [Dell, 2004; www.egain.com/best_practices]. Despite promise as a useful and relatively inexpensive organizational communications venue, including customer relationship management [Feinberg et al., 2002], text-based chat is prone to miscommunication [Cornelius and Boos, 2003], at times leading to customer dissatisfaction and the dissemination of erroneous information. A common criticism of chat is its propensity for conversational incoherence and disorderliness because contributions to the discussion may appear out of logical sequence [Herring, 1999; Zitzen and Stein, 2004]. Since people increasingly use computer-mediated communication (CMC) technologies like chat, short message service (SMS), and instant messaging (IM) to accomplish complicated, meaningful organizational tasks, it is important to understand why some exchanges succeed and others result in miscommunication.

Prior research has demonstrated that shared understanding of context plays a critical role in communication effectiveness [Carlson and Zmud, 1999]. Coordinating perspectives through the processes of perspective making and perspective taking is often required for participants to achieve and maintain this shared context [Krauss et al., 1995; Graumann, 1995]. However, the characteristics of exchanges and nature of chat technology make these processes challenging. Chat exchanges are brief, usually a few minutes or less, and are often complex and non-trivial. It can also be difficult for communicating parties to understand what the other is trying to say. The challenges are exacerbated because the medium is interactive, requiring quick responses, and may lack a coherent ordering of statements [Herring, 1999]. In a customer service situation, there may be a deliberate attempt to hide the personal identity of the customer service representative (CSR), who may use fixed, pre-defined messages to present a generic corporate image to those outside the organization [Adria and Chowdhury, 2004]. This makes it difficult for strangers to develop shared understanding of context.

To look at the process of context maintenance, we examined chat communications between customers and CSRs in a communications organization with a Web-enabled call center. We adopted a cultural hermeneutic lens that uses four contextual relations to analyze interaction – coherence, invention, intention, and reference. This lens enabled us to uncover how each of the four contextual relations mitigated failures or guaranteed success in perspective making and perspective taking. We found that the biggest impediment to a shared understanding of context was not conversational incoherence as prior research has suggested, but rather the customer's ability to successfully communicate *intention* – the problem he or she wanted resolved. The customer and CSR also needed to share an understanding of reference about the problem – in other words, to know what was being discussed. A proposed fifth contextual relation, interpretation of identity, was also necessary to successfully coordinate perspectives. The historical emphasis on technology solutions devised to reduce conversational incoherence in chat communication misses the underlying, people-centered problem.

The paper begins with a discussion of the conceptual foundation for our work, which includes discourse theory, perspective theory, and cultural hermeneutics. We then present the research methodology and follow with an analysis of the chat communications. We conclude the paper with a discussion of our findings and implications for practice and developers of chat technology.

Conceptual Foundation

We ground our research in discourse, an area of linguistics theory, and show how CMC contradicts some assumptions traditionally held by linguists. Next, we use perspective theory to demonstrate how context, a central tenet of discourse, can be shared between a CSR and a customer. We conclude this section with a brief discussion of cultural hermeneutics, the lens through which we will examine context maintenance in a CMC environment.

Discourse and CMC

Discourse is the area of linguistics theory that examines written or spoken language between people to "negotiate common categorizations and mutual understandings" [Nystrand, 1987: 210]. Rather than a literal focus on syntax or semantics, discourse analysis is grounded in pragmatics, which is the relationship between language and its use within context [Brown and Yule, 1983; Levinson, 1983]. An understanding of the context surrounding the communicative event is necessary to interpret the meaning the speaker or writer intended to convey. Effective communication is possible only to the extent that the parties maintain a shared understanding of context.

Until recently, discourse analytic approaches were differentiated by whether voice or text was the basis of the communicative event [Brown and Yule, 1983; Horowitz and Samuels, 1987]. Linguists believed there were fundamental differences between the two means of communication – voice is synchronous, enabling immediate reciprocity between speaker and listener, and relies on non-textual cues such as facial expressions and body language to provide important contextual information to the receiver of the communication [Brown and Yule, 1983; Horowitz and Samuels, 1987]. In contrast, non-electronic text-based communication is asynchronous, and relies on the actual words exchanged and an assumption about what may be assumed to impart sufficient context [Nystrand, 1987]. It is incumbent on the writer to craft the message in a way that allows all who read the text to maintain this context since there is typically no opportunity for writer and reader to engage in subsequent communication to clarify misunderstandings. These assumptions were challenged with the advent of CMC.

CMC enables two or more people to exchange text messages using computer-supported media such as e-mail, instant messaging, and chat [Wikipedia]. Dyadic chat, sometimes called instant chat, involves brief, interactive communication across the Internet, and often is used as a customer support feature of web-enabled call centers [Dell 2004]. CMC research (and by extension, research about chat) often focuses on the relative leanness of the media [cf. Daft and Lengel, 1986] and the extent to which it is synchronous (e.g., analogous to a telephone call) or asynchronous (e.g., analogous to a letter sent via postal service).

Much of the original research into CMC contrasted it with face-to-face (FTF) communication, and focused on the lack of auditory or visual cues that made context maintenance harder [Dubrovsky et al., 1991; Kiesler et al., 1984; Turoff et al., 1993]. More recently, some researchers suggest the lack of cues does not necessarily hinder communication if the parties have experience with the technology or each other, because experience provides sufficient context to compensate for an absence of cues [Carlson and Zmud, 1999; Walther, 1996].

Another assumption that has been challenged is that text-based communication is asynchronous. A growing line of research on web-enabled dyadic chat considers the communication to be quasi-synchronous [Garcia and Jacobs, 1999; Simpson, 2005], perhaps even representing a third language – Internet language – different from written or spoken language [Crystal, 2001; Zitzen and Stein, 2004]. Internet language facilitates the spontaneous, rapid exchange of CMC interactions through frequent use of emoticons such as smiley faces and language shortcuts such as BTW (by the way) and TTYL (talk to you later) [Crystal, 2001]. CMC combines text with the rapid exchange associated with verbal communication.

While CMC has challenged some linguistic assumptions about discourse, context maintenance retains a role in effective communication [cf. Brown and Yule, 1983; Levinson, 1983; Sachs et al., 1974; Schegloff, 1968]. Quasi-synchronous systems such as chat can make it difficult for the parties to maintain a shared understanding of context because the orderly flow of a conversation is disrupted when adjacent messages are not logically consistent and there is a discontinuity in the conversation [Herring, 1999; Zitzen and Stein, 2004]. This is different from FTF exchanges where conversation is essentially linear and managed by participants to preserve shared understanding [Zitzen and Stein, 2004].

We now turn to perspective theory as a way to consider how context can be developed between a CSR and a customer in a chat environment.

Perspective Making and Perspective Taking

A *perspective* is someone's point of view, encompassing beliefs, opinions, attitudes, frames of reference, or roles [Krauss and Fussell, 1991], and is shaped by a person's identity and intentions, temporal and spatial circumstances, and communicative agendas [Schober, 1998]. Perspective making (PM) and perspective taking (PT) are processes that help communicating partners develop a shared understanding of context. These processes can become part of organizational communication practices, manifested in individuals' behavior in an organization and codified in management information systems [Lyytinen, 1985]. In this section, we review the literature for a theoretical basis for how perspectives can be coordinated. Then we delineate the specific perspectives found in a call center context and discuss how PM and PT work together to facilitate context maintenance between a CSR and a customer.

Theoretical Foundation

Perspective theory has four underlying assumptions. First, the ability to make or take a perspective is *cognitive;* PM and PT are developmental skills that can be learned [Selman, 1980]. Thus, the cognitive effort required to make or take a perspective can vary among individuals. Because PM and PT are cognitive skills, individuals should be able to learn about and improve these capabilities. Second, perspectives are *dynamic,* "tentative and probabilistic," and subject to revision based on prior beliefs and feedback [Krauss and Fussell, 1991, p. 2]. The ability to change perspective allows individuals to communicate with a multiplicity of partners who hold a wide variety of perspectives. Third, perspectives are *social*. Because

they result in part from feedback from others, perspectives are necessarily born of interaction [Graumann, 1989], through which one compares one's own perspectives with those of others. Finally, the ability to take another's perspective into account is *necessary* for successful communication, at least by one of the communicative partners. "Communication is unsuccessful when neither party manages to mentally 'step into the other's shoes,' to be non-egocentric" [Schober, 1998, p. 146].

Coordinating perspectives involves two processes: PM and PT. *Perspective making* has also been called *perspective setting* or *perspective-giving* where the objective is to induce a perspective in someone else [Graumann, 1989]. The better a person can craft a story about his/her perspective – whether in a community of knowing (long term interaction) or in a call center (short term interaction) – the better he/she will be able to induce a perspective in a communicating partner [Boland and Tenkasi, 1995].

Perspective taking is the process of taking someone else's point of view and assessing what others know [Krauss et al., 1995]. Preliminary expectations about what others know can be based on several factors, such as perceptions of the physical setting of the conversation (including technology), beliefs about the partner's group membership [Schober, 1998], and one's own perspective [Keysar et al., 2000]. Once an interaction begins, perceptions are continually revised based on what is *said* [Schober, 1998]. Thus, PT combines a communicator's *a priori* theories about what a partner knows with feedback from the interaction [Krauss and Fussell, 1991]. This cognitive skill is essential to the success of interpersonal communication [Graumann, 1995].

In a successful interaction, the processes of PM and PT facilitate the development of a shared understanding of context among partners. Modification of perspectives occurs as people blend internal and external perspectives [Selman, 1980]. This is not to say the perspectives must be agreed upon, but that they need to be understood [Schober, 1998]. PM and PT are complementary; the articulation of strong perspectives clarifies the distinctiveness of each in the minds of the sender and the receiver(s), helping communicative partners take each other's perspectives [Boland and Tenkasi, 1995]. Both processes are required to maintain a shared understanding.

However, interactions are not always successful. In other words, shared understanding is not always achieved. There is a tendency to rely on one's own perspective when communicating because it requires less cognitive effort [Keysar et al., 2000], or to overestimate the degree to which others' perspectives mirror one's own [Krauss and Fussell, 1991]. A preliminary false assumption of what someone else knows or believes can impede the partners' ability to develop a shared understanding [Cramton, 2001]. Ambiguity surrounding a party's identity in the form of group membership or other form of categorization [Tajfel and Turner, 1986] can also inhibit development of a coordinated perspective, especially in CMC when fewer cues are available [Turkle, 1995].

To summarize, in successful interactions, PM and PT processes work together, and shared understanding is eventually achieved. In unsuccessful interactions, PM and PT processes do not achieve shared understanding.

Perspectives in a Customer Service Environment

Three perspectives exist in a customer service environment: the perspective of management in the organization, the perspective of the CSR, and the perspective of the customer [Kantsperger & Kunz, 2005]. The perspective of management embodies the organization's collective point of view, which may include corporate strategy, behavioral norms, owner attitudes, policies, and procedures [Gwinner, Bitner, Brown, & Kumar, 2005; Workman & Bommer, 2004].[1] The perspective of the CSR embodies the individual's point of view, which may include individual beliefs and attitudes about generic customer service, the organization, technology, the generic customer, and the specific customer [Rose & Wright, 2005; Witt, Andrews, & Carlson, 2004]. Likewise, the perspective of the customer embodies the individual's point of view, including individual beliefs and attitudes about generic customer service, technology, the specific CSR, and the organization [Bolton & Houlihan, 2005].

PM in a Web-enabled call center environment occurs on both sides of a CSR-customer dyad. The CSR ideally will communicate the organization's managerial perspective, and the customer will communicate his/her perspective. In addition to communicating perspective through the CSR, managerial perspective can be communicated directly to the customer using pre-defined text or scripts in a Web-enabled environment [Workman & Bommer, 2004]. Ideally, at the time a CSR makes contact with a customer, CSR and managerial perspectives will be congruent. When a CSR begins working for an organization, perspectives may not yet be in synch. Before the CSR has customer contact, management must

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[1] We are not suggesting that the organization cognitively possesses a perspective, but that the individuals in the leadership of the organization cognitively project a collective perspective through corporate strategy, policies, and procedures.

communicate its perspective to the CSR, who will coordinate his/her perspective with that of the organization. As a result, the managerial perspective presented to the customer is an integrated managerial/CSR perspective. PM also takes place on the customer side, with the customer communicating his/her perspective to the CSR [Bolton & Houlihan, 2005].

This exchange results in initial perspectives being interpreted on both sides of the dyad, by CSR and customer. Once initial perspectives are articulated, each side may engage in PT to try to coordinate perspectives and create a shared understanding of context. Boland and Tenkasi [1995] suggest perspectives become enriched over time, in a process of complexification, by increasing the precision and integration of perspectives among members of a community. Long-term interactions allow time to develop an integrated perspective by underscoring differences and relating them to the work context in order to create a new perspective that is coordinated [Bechky, 2003]. The process for short-term interactions is likely to be more tenuous because the communication is between people with relatively little knowledge of each other. Since chat technologies increasingly support intra- and extra-organizational communication, it is important to investigate how perspective coordination unfolds in these short-term, text-based interactions.

Cultural Hermeneutics

To examine the PM and PT processes as a way of developing shared understanding of context, we turn to a form of social linguistic analysis called cultural hermeneutics as articulated by philologist Becker [1979] and anthropologist Geertz [1983]. Cultural hermeneutics assumes that detailed descriptions of context are necessary to accurately ascribe meaning because individuals bring biases to their readings of text, which affect their interpretations. To develop these contextual descriptions, the relationships a text has with its context must be articulated. Becker [1979] delineates four relevant contextual relations: coherence, invention, intention, and reference (see Table 1). By analyzing discourse exchanges in terms of the four contextual relations, one can begin to discern strategies that reflect either success or failure in PM and PT.

Table 1. Contextual Relations		
Contextual Relation [Becker 1979]	Definition	Example
Coherence	Relations of textual units to each other within the text, including norms of grammar and usage.	Tense is a primary source of inter-sentence coherence in Indo-European languages.
Invention	Relations of textual units to other texts. Accounts for extent to which text is repetition ("speaking the past" by expressing old texts or ideas) or original ("speaking the present" by expressing new ideas).	Repetition, such as of common phrases (See you later!), prayer, or songs, speaks of the past. The more creative or innovative the text, the more it "speaks the present." Past and present may be spoken concurrently, along a continuum from repetition to originality.
Intention	Relation of textual units to the intentions of creators of the text. Assumes words alone may not fully capture individual's intention. May provide contextual clues to assist in interpretation of meaning of the text.	"Mike is in the energy business." If Mike's mother writes text to old friend, the friend may infer that Mike is writer's son who works in oil industry. If child writes same text to grandmother after seeing the movie *Monsters Inc.,* grandmother likely to infer Mike is a one-eyed green monster who helps his company capture children's screams which are converted to energy in "Monster World."
Reference	Relation of textual units to nonliterary events or objects outside the text, such as a credit card, holiday, or election, which provide contextual information.	"Her favorite birthday was her tenth, as she watched TV with the rest of America, and heard the astronaut say, 'The Eagle has landed!'" Nonliterary event referenced is Apollo mission when man landed on the moon. Knowledge of event provides contextual data (e.g., timing (1969), excitement of those watching) and allows for richer interpretation of text.

Some pragmatics-grounded linguists and CMC researchers have investigated perspective coordination using one of the four relations, although the meaning of the relations may be somewhat different. For example, CMC-based research has identified the problem of maintaining conversational coherence. Garcia and Jacobs [1999] explore the turn-taking system between sender and receiver in chat communications and identify the difficulty of maintaining shared context because of a lack of coherence when messages are received out of order, although they do not use the word coherence *per se*, whereas Herring [1999] discusses the same issue in terms of "sequential coherence." The concept of Intention is found in the fields of linguistics and cognitive science, but with a somewhat different definition than Becker's [1979]. Grosz and her colleagues conceptualize intention in the sense of S*haredPlans* [Grosz & Hunsberger, 2006; Grosz & Kraus, 1999]. SharedPlans may include both a personal intention <u>to</u>, as in "I intend to do X," or an intention <u>that</u>, which includes a commitment toward a group, "It is my intention that we will go to dinner tonight" [Grosz & Hunsberger, 2006]. Cultural hermeneutics, on the other hand, considers where words may not fully capture one's intention.

Invention has been examined in the field of rhetoric going back to the time of Plato, who believed that invention arose from inward reflection [LeFevre, 1987]. In contrast, LeFevre [1987] suggests that invention, or the creation of something new, is socially constructed as people interact with one another collectively. This situated nature of invention is consistent with Becker's [1979] conceptualization, although it does not specifically consider invention along a continuum of repetition ("speaking the past") to new ("speaking the present") as Becker does.

Finally, Yule [1997] examines referential communication as a process of information exchange where one must adapt the communicated information to another person's perspective, such as giving directions on a map. One may begin by asking, "Do you know where Smith's Grocery is?" in order to establish a shared reference, and then continue with directions to the City Library relative to Smith's Grocery. This relationship between reference and shared context is similar to the meaning of reference in cultural hermeneutics.

While a form of Becker's [1979] contextual relations of coherence, intention, invention, and reference is found in referent disciplines, the use of all four and integration across them is unique to cultural hermeneutics. A cultural hermeneutic examination should allow us to tease out both technology and individual contributions to PM and PT processes by looking at connections across the four relations, which is better than an analysis that considers only a single contextual relation.

To summarize, the processes of PM and PT require cognitive development through interaction with others, and are necessary for the creation of shared understanding of context. This has been well established in non-computer-mediated contexts, but CMC environments challenge some of the assumptions of traditional linguistics.   Cultural hermeneutics provides a lens through which PM and PT processes can be examined in CMC environments.   In this research, we address the following questions: In brief interactions between a CSR and customer...

- How are PM and PT accomplished in a CMC chat environment?
- How do the contextual relations of coherence, invention, intention, and reference illustrate success or failure in PM and PT in a CMC chat environment?
    - Are all four contextual relations equally important?
    - Are they sufficient to explain PM and PT?
- What are the implications of successful PM and PT for online chat technology?

Research Methodology

In this section, we outline characteristics of our sample, organizational context, and methods for the study.

The Sample

We investigated the chat communications of a company in the messaging industry, which we refer to using the pseudonym Kristal Comm. The company provided 4407 electronic chat dialogues,[2] representing all call center chat activity Kristal Comm CSRs had with customers (or in limited cases with other Kristal Comm employees) from August 2001 through July 2003. The dataset was provided as a text file, with headers and footers intact, and e-mail and street addresses removed. Social security numbers, often included as identification for billing transactions, were denoted with "*###-##-####*." CSRs were identified by a company-assigned employee number, which was left intact. No changes were made to the text to

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[2] An additional 1927 sessions were excluded from the sample because there was no text to analyze. These sessions represent situations in which dialogues were not established. Most of these were concentrated in the three months immediately following either the initial implementation of chat or a subsequent technology upgrade.

correct grammatical or spelling errors. We moved the data to an Access database with one chat session per record to facilitate our analyses.

During the two-year period, more than 2200 customers initiated chat, and approximately 100 CSRs answered questions. Sample characteristics are reported in Table 2. Contextual information about the organization was obtained from the corporate web site and from company executives who provided us with a tour of company facilities, a PowerPoint presentation used to market services to customers, and our own user accounts. We met with company executives periodically to ask questions as they arose during data analysis.

Table 2. Sample Characteristics			
Total number of sessions	4407	Number of CSRs	99
Number of customers	2264	Number of Kristal Comm employees chatting with CSRs	~8
Sessions per customer	Mean = 1.94; Mode = 1 (64.3% of all customers); Median = 1; Maximum = 24		
	88.6% of the 2264 customers used the chat service for 3 sessions or fewer.		

Organizational Context: Kristal Comm

Kristal Comm was founded in the southern United States in 1990. The organization is an innovator in the message industry, pioneering the integration of different messaging capabilities (voice, e-mail, and fax) with live office personnel. At the time of the study, its 21,000-plus customers could use corporate call center services, interactive voice response, and a unified message platform. The unified message platform was a single point of access for communication, regardless of media type. Customers could check for fax, voice, and e-mail messages in a single place, and retrieve them using the media of their choice. For instance, customers could retrieve voice mail messages over the Web, or call a CSR and have e-mail messages read to them.

There were several mixed-media customer service options. Customers contacted customer or technical support via e-mail, telephone, or chat facility. Scripts, or what Kristal Comm called pre-defined texts, were provided to CSRs for answering questions, resolving problems, or taking orders. All CSRs used the androgynous name "Kris" to identify themselves to customers, although this convention changed during the study period.

Method

Drawing on an earlier study [Burnett et al., 2003] that used a cultural hermeneutic analysis to examine two virtual communities, here we examine a series of chat dialogue texts in which participants write to each other, read each others' texts, interpret those texts, and write new texts in response. While we do not undertake a full hermeneutic analysis of these texts – we do not provide detailed and close analysis of a few specific texts – each chat participant works through a hermeneutic process. For a text-based chat dialogue to succeed, both participants must actively engage in the interpretation of the texts sent to them [see Ricoeur, 1976].

Each of the four authors was assigned a set of 25 sessions, randomly selected from the dataset, to examine independently without pre-defined categories. The authors then came together and used an inductive, iterative process to resolve any disagreements about coding and categorization of sessions. Out of this process, we developed a codebook[3] that we used to guide coding of the full set of sessions, including the following elements:

- Six types of chat sessions. Session type categories reflect reasons why customers or employees use chat. Because a single chat session could include multiple purposes, sessions could receive multiple codes for type of session.
- Seven resolution categories. Our coding of session resolution did not assess accuracy of information, but reflected whether or not the customer and CSR appeared to understand each other at the conclusion of the session. We used one resolution code for each session.

In addition, we analyzed each session in light of the four contextual relations derived from cultural hermeneutics, summarized in Table 1. Each of these – chat session type, resolutions, and contextual relations – will now be discussed to understand the process of context maintenance through PM and PT in chat.

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[3] The complete codebook is available from the authors upon request. Much of the verbiage from the codebook is summarized below.

Chat Sessions and Resolutions

The session types[4] are the conversational agendas [Schober, 1998] customers try to articulate to the CSRs – topics about which customers try to make perspectives and about which CSRs make the managerial perspective known to the customer. Customers used chat to ask questions about or explore technology, perform account maintenance activities, request information, and, in limited cases, to socialize. Chat was also used among Kristal Comm employees, mostly to test chat features. We describe the six session types, some with subtypes, in Table 3.

Seven resolution categories came to light through the inductive, iterative process described above: resolved, resolved with difficulty, referred, not resolved, mixed resolution – multiple issues, mixed resolution – single issue, and other. These categories reflected the degree to which the two participants in the chat session coordinated perspectives. We describe resolution findings in Table 4. To analyze the distribution of different resolutions across session types, we computed the percentages of session categories within each resolution type. Table 5 summarizes this analysis.

Many of the findings summarized in Table 5 appear to be predictable. For instance, it is not surprising that third-party technical problems would be among the most likely to be referred (to the third-party provider) or not resolved. Similarly, billing problems can sometimes be emotionally fraught for customers, so it makes sense that they would be more likely to lead to difficult interactions than, for instance, simple requests for information. Further, uncategorizable sessions, coded as "other," are more likely than any other kind of session to have equally uncategorizable resolutions.

Other relationships between session types and their resolution are more surprising, for example a transaction as seemingly straightforward as signing a customer up for service is commonly referred (often, though rarely explicitly, to avoid transmitting credit card information online). Some surprising findings in unresolved sessions - for example that more than two percent of sessions in which a customer is just trying out the chat service are not resolved, are due to premature disconnections or other technology failures. As the next section indicates, our analysis of the sessions using the contextual relations (coherence, intention, invention, and reference) suggests that those relations cut across session type categories and across resolution categories. That is, even if third-party technology problems are nearly twice as likely as password problems to go unresolved, when either type of problem is brought to a chat session, the kinds of interactions that take place in unresolved sessions tend to exhibit the characteristics described by the contextual relations. Successful sessions of all types tend to be similar in regards to those contextual relations. Conversely, unsuccessful (or difficult) sessions tend to be more alike than they are different, regardless of the type of question asked or problem addressed.

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[4] One session may include multiple purposes, so the sum of the number of messages will not equal the sample size of 4407. The reported percentages reflect the number of occurrences of a type of session divided by the sample size.

Table 3. Types of Chat Sessions		
Type	Subtype	Number (Percent)[5]
Technology	Kristal Comm: The customer or another employee asks a question about technology that Kristal Comm authored or supports internally. Examples include questions about Kristal Comm's voice mail system or links on the company's web site.	1536 (34.8)
	Third party: The customer or employee asks a question about technology that someone other than Kristal Comm authored or supported. Examples include questions about Multimedia Player, cell phone technology, or third-party e-mail systems.	300 (6.8)
	Messages: Instead of focusing on technical problems, these questions focus on process. This includes questions about different types of messages, message content, senders or receivers of messages, etc.	656 (14.9)
	Trying out chat: The customer is exploring the chat utility out of curiosity.	294 (6.7)
	Total Technology	2786 (63.2)
Account	Billing: The customer asks a question about charges to his/her account, including, but not limited to, disputes about billing amounts, clarification of charges, and requests to change credit card information.	1108 (25.1)
	Vacation or Hold: The customer requests that his/her account be placed on "vacation" or "hold" status, requests information about such status, or asks that his/her account be removed from "vacation" or "hold" status. Both account statuses involve temporarily suspending message activity while the customer is away.	800 (18.1)
	Account Maintenance: The customer requests that a new feature be added or that an existing feature be removed from his/her service. Questions about the basic functionality of Kristal Comm services were coded into this category, as were requests concerning basic account information, such as adding or removing a name from account records.	278 (6.3)
	Canceling Account: The customer requests that his/her account be closed or cancelled.	243 (5.5)
	Sign-Up: A new customer uses the chat service to set up an account with Kristal Comm.	66 (1.5)
	Total Account	2495 (56.6)
Information	Referral: The customer or employee asks about referrals, which are special Kristal Comm incentives to customers who referred new customers to the company. This category includes, but is not limited to, questions about credits for referrals and information about a referred person.	104 (2.4)
	Other Information: The customer asks for information or documentation about a Kristal Comm service, about other customers, etc., but does not request that action be taken beyond the provision of that information.	239 (5.4)
	Total Information	343 (7.8)
Internal	Internal: Two or more employees chat, with no customer involvement.	254 (5.8)

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[5] One session may include multiple purposes, so the sum of the number of messages will not equal the sample size of 4407. The reported percentages reflect the number of occurrences of a type of session divided by the sample size.

Table 3. Types of Chat Sessions		
Type	Subtype	Number (Percent)[5]
Social	<u>Social</u>: Customers and/or employees engage in social non-task related discourse, or discourse related to relationship building between the customer and the employee. Examples include a customer expressing holiday greetings, or an employee chatting with another employee late at night to combat insomnia. This category was used where the intention (or one of the intentions) of the text is focused on purely social interaction.	84 (2.0)
Other	<u>Other</u>: This category includes anything not included in any of the other categories. It was also used in addition to another category if that other category did not fully portray the message content.	108 (2.4)

Table 4. Session Resolution		
Session Resolution	**Number (Percent)**
Resolved. A session was coded as Resolved if the interaction was complete, and the question was answered or a pleasant social interaction occurred. This does not necessarily mean that the CSR provided an accurate answer to a question. In addition, if a CSR directs a customer in such a way that the customer can resolve his/her own problem, then the session was coded as resolved.	3540 (80.3)
Resolved, with Difficulty. The session was completed and the customer's question was answered by the end of the session, but the interaction included (1) miscommunication such that the CSR had to repeat or rephrase the answer to the customer's question, (2) miscommunication such that the customer had to repeat or rephrase his/her question, or (3) explicitly stated displeasure with company policy, with the CSR (or customer), or with the situation (e.g., "I'm a little peeved," "I have better things to do with my time").	47 (1.1)
Not resolved. • Incomplete interactions: The session included, at a minimum, a customer question and a CSR response (which could be another question). Included in this count are sessions where (1) the customer's question has been answered by the CSR, but has not been acknowledged by the customer, (2) a CSR or a customer does not continue the interaction to conclusion, or (3) a customer or CSR explicitly leaves the interaction prematurely.	190 (4.3)
• Problem not solved – complete interactions: The session includes miscommunication, an ambiguous resolution, a solution that does not work, a request for change of venue by the customer, a problem that cannot be resolved as requested by the customer due to company policy or inadequate information from the customer (e.g., account number), or a problem that is still being researched.	70 (1.6)
• Referred: The customer was referred to another source to answer the question. A referral implies that the question was not resolved within the chat session. Typically, an additional human interaction (e.g., contacting tech support through the Web or calling a customer service hotline) is required to answer the customer's question. However, we did not have access to telephone transcripts or e-mails to technical support, so we do not know for sure whether the question was ultimately answered. Thus, within the chat session, these were not resolved.	417 (9.5)
	677 (5.9)
Total	
Mixed resolutions, Multiple Issues. This designation indicates there were multiple purposes embedded in the text, with the result that there were multiple resolutions within one session. For example, within a single session, a billing question can be referred, and a technology question can be resolved. • Resolved and Referred	46 (1.1)
• Resolved and Not Resolved	21 (0.5)
• Referred and Not Resolved	2 (0.1)
Total	69 (1.6)
Mixed resolutions, Single Issue. An answer that would have resolved the issue was given to the customer, but the customer was also referred to another source in case the CSR-provided solution did not work.	9 (0.2)
Other. The session cannot be coded with any of the above resolution codes, or they are irrelevant to the analysis of communicative interactions. Sessions include prank sessions and those that ended due to technical or programmatic error.	65 (1.3)

Table 5. Session Type by Resolution (Numbers represent percent of session type in each resolution category)			Not Resolved (NR)			Mixed Resolution				
	Resolved (Res)	Resolved with Difficulty	Referred (Ref)	Incomplete Trans-actions	Problem Not Solved	Res and Ref	Res and NR	Ref and NR	Multiple resolutions for a single issue	Other
Technology										
Kristal Comm	76.4	1.3	9.2	7.0	2.4	2.1	1.0	0.1	0.5	0.0
3rd party	51.0	1.7	27.0	10.3	4.0	3.7	0.3	0.3	1.7	0.0
Messages	83.1	1.5	5.2	5.6	1.5	1.1	1.5	0.2	0.2	0.0
Trying out chat	94.2	0.0	1.0	2.7	0.7	1.7	0.3	0.0	0.0	0.0
Total: Technology	77.1	1.3	9.3	6.6	2.2	2.0	1.0	0.1	0.5	0.0
Account										
Billing	74.4	2.4	15.6	3.9	1.8	1.7	0.5	0.1	0.0	0.0
Vacation or Hold	94.4	0.4	0.9	3.1	0.1	0.8	0.3	0.1	0.0	0.0
Account maintenance	92.1	1.1	2.5	4.7	0.0	1.4	0.7	0.0	0.0	0.0
Canceling account	93.4	0.0	2.1	3.3	0.4	1.2	0.0	0.0	0.0	0.0
Sign-up	53.0	0.0	36.4	6.1	0.0	0.0	1.5	0.0	0.0	0.0
Total: Account	84.0	1.3	8.7	3.7	0.9	1.3	0.4	0.1	0.0	0.0
Information										
Referral	84.6	2.9	4.8	4.8	0.0	1.9	1.0	0.0	0.0	0.0
Other Information	84.5	0.4	7.9	5.4	0.0	4.2	0.4	0.0	0.0	0.4
Total: Information	84.5	1.2	7.0	5.2	0.0	3.5	0.6	0.0	0.0	0.3
Internal	94.9	0.0	0.8	3.5	0.0	0.0	0.0	0.0	0.0	0.0
Social	94.0	0.0	3.6	1.2	0.0	1.2	1.2	0.0	0.0	0.0
Other	43.5	2.8	4.6	14.8	10.2	0.9	0.9	0.9	0.0	5.6

Contextual Relations

As noted above, some tendencies related to the coordination of perspectives appeared to emerge as a result of the kinds of issues discussed in chat sessions. For example, third-party technical issues are more likely to be referred or unresolved than most other session types. However, each session type sometimes goes unresolved or must (with the exception of password problems) be referred. Our analysis of the sessions in light of the four contextual relations (see Table 1) suggests that, to a great extent, session resolution is a function of these relations and that two of them (intention and reference) are of particular importance. Further, our analysis suggests that a fifth contextual relation, identity, which has to do with accurate interpretation of the identities of participants, is important and should be added to the hermeneutic model. We now turn to a discussion of these five relations.

Coherence

Our analysis of Kristal Comm chat sessions with respect to coherence suggests that, contrary to common belief, the characteristic tendency of chat technology to produce "disordered" interactions does not play a major role in the success or failure of chat-based customer service. Rather, users of the technology can overlook incoherence and focus on more substantive aspects of the interaction. As well, participants can use chat to intersperse metacommunication throughout an interaction, repairing incoherence as it happens (an opportunity lacking in static text-based interaction).

In verbal conversation, individuals communicate by taking turns. Thus, the contributions to the conversation follow in order, which facilitates coherence. In Kristal Comm chats, the order in which texts are displayed to the participants does not always mirror a coherent verbal conversation. Occasionally, initial questions are not answered until after other questions have been asked, as in this example:

> CUSTOMER: was wondering how much it costs to save a group message in message on demand.
> CSR: does not cost anything
> CUSTOMER: how long can I keep it there and what is my limit?
> CSR: but when you move it there make sure you delete it from your inbox or it will cost you message storage fees
> CSR: as long as you like
> CUSTOMER: what is limit?
> CSR: Let me check to make sure on that
> CUSTOMER: ok
> CSR: 10

Sometimes customers have multiple questions (as in the session above) or try to deal with multiple issues in a single session, giving the appearance of two separate conversations taking place simultaneously. In one example, a customer writes "two thoughts in one sorry," preventing a disruption of coherence as it happens by interjecting a metacommunicative statement apologizing for failing to keep the two issues separate.

Despite the propensity for incoherence in chat, many chat exchanges exhibit a routine sense of coherence and shared perspective. For example, many customers use the chat service to place their accounts on "hold" or on "vacation" status while they are away. These requests vary – some customers do not understand the distinction between the two options, for example – but they most often follow a set pattern, in the use of a clearly established vocabulary and in the order of the interactional elements. These typically brief exchanges consist of the CSR's initial greeting, a straightforward customer request, a question and answer or two between the CSR and the customer, and completion of the request. Often the exchange ends with a customer expression of thanks, followed by the CSR's pre-defined response, "Thank you for using the Kristal Comm web chat service. Have a great day!" These are clear cases in which customers and CSRs coordinate perspectives successfully.

Invention

With respect to invention, we analyze how Kristal Comm's CSRs successfully provide customers with information new to them in terms they can understand. From the point of view of customers who select chat specifically to solve a problem or to answer a question, Kristal Comm's chat service is devoted to "speaking the present" through the creation of new knowledge. Even when customers are not seeking information but, for instance, wish to change their account status or payment method, they engage in chat to bring about change, to make something happen. And when customers initiate chat because they do not have the knowledge to understand why something has or has not occurred, it is the CSR's job to provide such information and, even if in a small way, "speak the present."

For "speaking the present" to occur, both parties must successfully coordinate perspectives. True, "speaking the present" can only occur in the context of "speaking the past," as both parties come to the interaction with a pre-existing body of knowledge. For example, the customer enters the session already understanding something about how the Kristal Comm system works, while the CSR enters with some pre-existing knowledge of what their customers' needs might be and a considerable body of knowledge of how the system works. New knowledge must be situated in this context. If perspectives are not made in context, confusion will reign, and the chat session will not be successful.

In our analysis, we operationalized "speaking the present" as follows: if the CSR answers the customer's question, and the customer reflects understanding of that answer, "speaking the present" has occurred, and invention of new knowledge for the customer has been successful. Conversely, if the customer expresses ongoing confusion, unhappiness, or another problem with understanding the information offered, perspectives have not been coordinated, and new knowledge is not created successfully. In resolved sessions, as in the following example, successful acts of "speaking the present" occurred:

> CUSTOMER: ok - one more question...we ONLY access our messages via web, can we also do on phone?
> CUSTOMER: according to the Help section on this site it sounds like we can
> CSR: No, because you have the Web Message Retrieval and that is strictly internet use. If you would like to use the both, you would have to upgrade to the Kristal Comm Messaging Basic.
> CUSTOMER: how much does that cost, per mo, per trans, etc.

CSR: The monthly fee of the Kristal Comm Messaging Basic is $7.95/month and there is a one-time set up fee for the Web Access of $24.95. If you use the computer to check your messages you will not inccur the minute rate.

CSR: So it basically breaks down to $7.95/month for both the phone and computer usage.

CUSTOMER: I'll look over the web site - and we may switch soon - thanks foR all of your help! Andrea

In this example, the customer has some initial understanding of how her account works, but expresses a gap in understanding by posing a question to the CSR, who then provides a straightforward response to fill the gap. In her last post, the customer acknowledges that the CSR has successfully "spoken the present" in terms she understands. In this successfully resolved session, the customer has learned something new, and has integrated that into her pre-existing knowledge of Kristal Comm's services.

As standard operating practice, Kristal Comm has tried to predict gaps in knowledge that customers will bring to chat sessions. To efficiently meet customers' needs, Kristal Comm provides CSRs with a set of pre-defined texts, which function as boilerplate answers to frequently asked questions that assist CSRs with successfully "speaking the present."   However, our analysis found that successful invention is sometimes limited by the use of pre-defined texts. While some customer questions are easily addressed with boilerplate answers, pre-defined texts sometimes address a customer as a generic class and fail to meet his or her individual needs. In such cases, reliance on pre-defined texts may impede a CSR's ability to take the customer's perspective; a generic question is answered rather than a specific one.

In other cases, there may not be enough information available to CSRs in the form of pre-defined texts. In sessions dealing with customer requests for detailed technical support, which is beyond the CSR's defined purview, interactions typically end with the customer referred to the problem reporting link on the company's website or to telephone-based technical support. This indicates a gap in the CSRs' knowledge, which in turn inhibits the CSRs' ability to provide the customer with new information.   Likewise, sessions that end with the customer being referred to customer service telephone support also illustrate the limits of chat. While some sessions move to the telephone because they involve the exchange of personal information such as credit card numbers, many are moved because they are complex, and the customer or CSR perceives that chat is not robust or interactive enough to handle the problem. The pervasiveness of pre-defined texts in chat may contribute to the perception that telephone interactions are more amenable to the exchange of non-routine information, and therefore, are a more appropriate venue for "speaking the present" by both participants.

Intention

Our analysis of Kristal Comm chat sessions suggests that intention is an important piece of context because PM is inextricably bound to expression of intention. The clear statement of, and interpretation of, intention on both sides of the dyad is the basis for coordinating perspectives. If a receiver's understanding of text sent during a chat session differs from the sender's intended meaning, difficulties may arise in coordinating perspectives. Failures to express or accurately interpret the customer's intention affected session outcomes in 8% of the unsuccessful communicative interactions (not resolved and resolved with difficulty).

In our sample, intention is usually stated immediately by the customer who explicitly articulates the reasons for entering the chat session and thus begins making a perspective. In the following snippet from a successfully resolved session, the customer succinctly and clearly states what she desires to happen during the session in her first posting:

CUSTOMER: Hello - I need to change my billing info that Kris has on file...

Significantly, a momentary disruption to the session's coherence (involving a mis-placed pre-defined text) has no impact on its successful resolution, as both participants take it in stride. Coherence does not impede successful interaction because clear articulation and accurate interpretation of intention occurs.

Occasionally, intention is mis-stated or must be teased out through interaction with the CSR because the customer is not familiar enough with the system, terminology, division of labor, and/or chat norms to state an intention clearly at the outset. In these situations, the customer and CSR coordinate perspectives through a volley of questions and answers until mutual understanding is reached.

Successful coordination of perspectives requires that customer and CSR possess adequate writing, typing, and interpretive skills in order to state and/or interpret intention. If these basic elements are lacking from the outset, incoherence may further obscure intention. The following exchange, taken from the early stages of an ultimately unsuccessful transaction,

appears already to be on the verge of being derailed by typing errors, lack of patience, ambiguous (or confused) posts, and frustration:[6]

> CSR: Thank you for contacting Kristal Comm. What can I help you with today?
> CUSTOMER: message on demand not appearin
> CSR: Is this ****** I am speaking with?
> CUSTOMER: this has happened several times
> CUSTOMER: yes
> CSR: *****, are you unable to transfer messages to Message On Demand, or are you unable to find that location on the internet site?
> CUSTOMER: is this connection ok
> CUSTOMER: does not appear most of time
> CUSTOMER:
> CUSTOMER:
> CUSTOMER: it should be there to transfer but not
> CUSTOMER: hello
> CSR: Our connection, *****? Right now? It's fine on my end.

The customer does not state her intention clearly and thus the CSR cannot make an accurate or appropriate interpretation and provide a solution. Because the customer is not equipped to make a perspective, the CSR cannot take the customer's perspective and thus coordinate perspectives. The CSR's effort to let the customer know the system is not malfunctioning also implicitly suggests that the problem rests with the customer rather than anywhere else. The customer later responds in kind: "no it does not this is about the 4th time i have brought it to kris's attention." The two parties talk at cross-purposes, intention is never clearly established, and the exchange crumbles.

Just as a customer can fail to make his/her perspective clearly, a CSR can fail to take a perspective by misinterpreting the customer's intention. The following session is unresolved because the CSR leaps to an incorrect assumption regarding the customer's intention and races to the end of the session without taking time to verify his interpretation of that intention:

> CSR: Thank you for contacting Kristal Comm. What can I help you with today?
> CUSTOMER: I need to change my account information to my name and not my wifes
> CUSTOMER: is tha possible?
> CSR: That is possible. Could you please verify the last four digits of your social security number?
> CUSTOMER: mine or the one that is on the account?
> CUSTOMER: 8879
> CUSTOMER: that's in my wife's name
> CSR: Thank you ****. I will simply remove your wife's name from the account. Is there anything else that I can help you with today?
> CUSTOMER: no that's not what i want
> CSR: Thank you for using the Kristal Comm web chat service. Have a great day!

Intention may change as a session unfolds; if a change in intention is clearly stated and accurately interpreted, the session tends to end successfully. Take, for instance, cases in which customers initially state their intention to cancel their accounts. Many of these sessions end quickly and satisfactorily with an account cancellation. In other cases, CSRs successfully inform the customers of other possibilities, allowing them to modify their accounts and continue as Kristal Comm customers. Thus, the customer's intention shifts as information is received from the CSR; customer and CSR coordinate their perspectives as part of a dynamic process of communication in which perspectives are clearly articulated and new knowledge is accurately grounded in relation to the customer's intention and existing knowledge.

Reference

Our analysis indicates that the contextual relation of reference is critical to coordinating perspectives. Customers come to chat sessions because they want something to occur outside the immediate context of the chat; for this to happen, they must clearly refer to external objects or events and bring them into the conversation. CSRs must accurately understand the references to take the customer's perspective; conversely, customers must accurately understand the CSR's references to

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[6] In this exchange, blank lines are caused by the customer hitting the "enter" key without having first typed some text; several of these lines have been removed from this example to conserve space.

objects and events to successfully take the CSR's perspective. For example, in this excerpt, a customer is complaining about response time, and after a few exchanges the CSR offers a solution:

> CSR: We suggest you try increasing the buffering time. [Detailed instructions are given.]
> CUSTOMER: OK, I'll try that
> CSR: Is there anything else I can help you with today?
> CUSTOMER: Well, I tried what you suggested and I can't do it
> CSR: What operating system are you using? (Windows 95/98/2000/ME, etc.)
> CUSTOMER: Window 98
> CUSTOMER: I started to open the 1st msg and it just finally came on
> CSR: What media player are you using currently.
> CUSTOMER: The one I had to download in order to listen to vm [voice mail] over the computer. Not really sure.
> CSR: Does it say window media player? Is so would you please click on help, then click about Windows Media Player and tell me what version you have.
> CUSTOMER: I clicked on properties and it doesn't say what version
> CSR: Would you please close your media player.
> CSR: When you have done this, please reopen it.
> CUSTOMER: YOU MEAN CLOSE OUT KRISTAL COMM?

This exchange is fraught with references that are not understood by the customer. After this final misunderstanding of reference to "media player," the CSR ended up referring the customer to telephone customer support.

The range of reference in Kristal Comm chat transactions is constrained by the services offered by the company; with few exceptions, customers use chat to discuss an aspect of these services or the technology supporting them. In most cases (certainly in successful sessions), customers and CSRs share an understanding of the references. Commonly shared references in the sessions include: (1) the last four digits of the customer's social security number, used for confirmation of identity of U.S. customers; (2) changes to account status, such as putting an account on "vacation" or "hold;" (3) saved and deleted messages; (4) personal email groups and "supergroups" that allow targeted group email to be sent and received; (5) specific computer functions, particularly the playing of audio files that allow customers to listen to phone messages on their computers; (6) billing and payment issues, including the costs of specific services; (7) Kristal Comm promotions and other services; and (8) general issues related to the online universe, including Internet Service Providers, bandwidth, usernames, and passwords.

An understanding of the universe of events and objects to which customers and CSRs refer during chat sessions is typically shared by both, but not always. For example, while Kristal Comm normally uses the last four digits of a customer's social security number for identity verification, the reference is meaningless to numerous foreign customers who use the company's services.

In other cases, customers do not always understand references to technology and technological processes that CSRs take for granted, as seen in the following exchange:

> CUSTOMER: I just wanted to know if the "on-line" terminology in your $.05 a pal blurb meant on the telephone line or online like the computer on line?
> CSR: The Nickel-a-Pal program refers to the per min rate you are charged when you are using the phone because you are not charged a per min rate when online
> CUSTOMER: Thanks for the clarification. That's what I thought but using that term can be confusing at times, ya know?
> CSR: I do apologize if it was confusing

Occasionally, CSRs are unable to take a customer's perspective because the customer refers to things outside the defined scope of CSRs. Likewise, customers are sometimes unable to take a CSR's perspective because the CSR refers to things outside the customers' experiences. In such cases, sessions can break down and end without resolution. In the following example, even though the CSR and customer appear to be referring to the same object – the Kristal Comm web page displaying messages – differences in reference are so extreme that they might as well be discussing different objects altogether:

> CUSTOMER: Ok, there is no "move to" box, only an x that's slanted
> CSR: Right next to that slanted X (to the left of it) there should be an upside down arrow.

CUSTOMER: Nope, there's nothing next to it, the x is all by itself
CSR: Have you tried clicking on the "X"?
CUSTOMER: Thats why I cannot delete from the listening box, maybe?
CUSTOMER: This slanted X wasn't there before, only the "move to" which would only let me go to "message on demand"
CUSTOMER: Has this menu/system changed?

Interpretation of Identity

Our analysis focused primarily on interpretation of content, but it became clear that interpretation of a sender's identity was equally salient to the communication process; this makes sense given that coordinating perspectives necessarily encompasses the relationship between sender and receiver. We propose *interpretation of identity* as a fifth contextual relation. Participants' understanding, or misunderstanding, of each others' identities presented challenges to PM and PT processes in three situations. Ambiguity surrounding the sender's group membership or other form of categorization [Tajfel and Turner, 1986] inhibited coordination of perspectives. Issues related to either the verification of or confusion related to identity were found in 64% of sessions; in more than half of these sessions, services were offered without any verification of customer identity. While the presence of identity issues does not necessarily "cause" session breakdowns, identity appears to be an issue more often than not in failed interactions.

The first situation occurs when the identity of a "Kris" (CSR) is unclear to the customer. Kristal Comm's initial usage of a single genderless name for all agents reflects the company's stated intention of creating a standardized CSR identity, which ideally would have facilitated the blending of managerial and CSR perspectives. At times, the customer's lack of awareness of this standardized identity resulted in customers erroneously assuming they had successfully coordinated perspectives with CSRs. Kris's identity was sometimes blurred when chat sessions were disconnected inadvertly, whether due to limitations in the technology or user error. When a customer reconnected, the same "Kris" usually did not respond. This was not always evident to the customer, who assumed the same CSR was responding. Identity vagaries related to the policy of calling all CSRs "Kris" led to a change in policy and now CSRs are identified to the customer by their own first names.

The second situation occurs when the customer's identity is unclear to the CSR. Most commonly, this happened when a CSR failed to correctly categorize the customer by group membership. Kristal Comm has groups of customers who are multi-level marketers (belonging to several different groups), others who are chiropractors, and still others who are real estate agents, all of whom enjoy unique rate packages for services and use different services to suit their various needs. If the CSR fails to correctly categorize the customer, inaccurate information can be disseminated, which is particularly problematic when answering billing questions.

The third situation occurs when the organizational identity of Kristal Comm is unclear to the customer. An extreme example of this is seen in the following excerpt of an unsuccessful session, in which the customer and CSR do not share an understanding of references to things such as "ISP" and "server," let alone the management and departmentalization of Kristal Comm services:

CSR: Mr. ******, the free email service is provided by Synacor. If you need support for your email at krismail.com, please contact:
support@synacor.com
This will send an email to the technical support at Synacor and allow you to correspond directly with them for assistance with any problems, questions, or concerns.
CUSTOMER: i did email them and they said i have to contact you and type in the server names
CSR: I'm sorry *****. The free email accounts are handled directly by Synacor. We de not provide support for KRISmail. You will need to email them for that information.
CUSTOMER: i tried mail.krismail.com with smtp.krismail.com niether worked
CSR: I'm sorry, I do not have that information.
CSR: Is there anything else I can help you with today?
CUSTOMER: I just said I DID already. The response said to contact the ISP. That is you
EIC: CUSTOMER has left this conversation.

Because customers and CSRs come to chat sessions without the visual cues that can be used in FTF encounters to establish provisional understanding of identity, all three situations can result in sessions that fail because perspectives are not coordinated. If customers believe they are talking to the same "Kris" to whom they were talking in a previous session, or if the CSR mistakenly identifies a customer as a member of a group to which she does not belong, or – most damagingly – if

a customer mistakenly identifies a CSR as somebody different (such as an Internet Service Provider), their interactions will likely be misguided from the outset.

Discussion

Analysis of our data indicated that successful perspective coordination required the customer to engage in PM by articulating intention – why he or she initiated the exchange. When this was difficult for the customer, it fell to the CSR to take the initiative and help. To do so, the CSR used pre-defined text or ad hoc questioning until the customer's reason for contacting Kristal Comm was clear (e.g., the customer would make a perspective), at which time the CSR could take the customer's perspective, and with their perspectives coordinated, respond appropriately to address the customer's intention. Therefore, failure to create a shared understanding through PM and PT revolves around a disconnect between what one party says and what the other party interprets it as meaning, sometimes because intention is unclear or misunderstood due to a lack of shared reference. Coordinating perspectives in dyadic chat is not a technology problem related to the discombobulated sequencing of messages, as prior CMC research has suggested, but is difficult because each party brings a personal perspective to the conversation. The cultural hermeneutic lens provided a way for us to discern exactly what is missing when communication breaks down, especially when communicants share at least some common ground.   We now look at the implications of our findings by returning to the research questions that guided our investigation, and identify opportunities to expand understanding of perspective coordination.

Accomplishing PM and PT in CMC chat

As noted above, the key to shared understanding lies in the CSR's ability to understand the intention of the customer and, through shared reference, provide an answer that addresses the customer's concern and is communicated in a way the customer understands. Contrary to studies of coordinating perspectives in longer-term interactions [cf. Bechky, 2003; Boland and Tenkasi, 1995], it was not always necessary for the customer to change his/her perspective in these short-term interactions. We suspect this is related to the service-oriented relationship between a CSR and customer, rather than a finding that should be extended to all instances of CMC. In the context of customer support in a Web-enabled chat environment, it is the *CSR's responsibility to take the perspective of the customer*, assuming customer service is an important managerial objective. It can be helpful in creating a shared understanding of context for the customer to understand the CSR's perspective, but it is not incumbent on the customer to do so nor does it appear necessary for coordinating perspectives.

Successful coordination of perspectives often required the CSR to engage in an *interactive process of questioning* to help the customer make a perspective. This iterative questioning involved creating a shared reference, especially with customers who were not technically savvy and could not articulate their problems: "You said X. Do you mean Y?" Interactive questioning to clarify intention, akin to the reference interview in library science [Bopp, 2001], is a skill that can be learned. How to conduct an iterative interview should be a central component of CSR training. Training in interactive questioning should include instruction on when such questioning is appropriate instead of, or combined with, pre-defined texts such as those Kristal Comm management provided to CSRs.

Pre-defined texts codify the managerial perspective on organizational policies and procedures and can improve perspective coordination <u>across customers</u> by providing a consistent face of the organization to its customers. Often, they were an effective PM strategy for CSRs because they contained detailed explanations of policies or problems, making it easier for the CSR to thoroughly address a customer's concern. However, pre-defined texts did not always help in coordinating perspectives because they sometimes included language or practices unfamiliar to the customer, limiting the ability of the customer to take a perspective because of a lack of shared reference.

Sometimes, the CSR was unable to effectively engage in interactive questioning because his or her knowledge only included what was codified in the pre-defined texts. This conflict between communication strategies highlights the tradeoff between tight control of employee responses and empowerment of employees to solve customer problems. From the CSR's perspective, even though pre-defined texts are designed to facilitate PM, the CSR may perceive them as the complete universe of knowledge that one is supposed to have. This may have the compound effect of encouraging a CSR to "jump to conclusions" about the customer's problem and discouraging a "think on your feet" attitude toward trying to solve as many customer concerns as possible.

From the customer's perspective, pre-defined texts may improve response time. If, however, the texts do not address the problem because the CSR has not correctly identified the customer's intention or there is no shared reference because of diversity in vocabularies, inaccurate information can be imparted. From a managerial perspective, pre-defined texts standardize responses to customers, with positive outcomes including faster response time, ostensibly accurate information, and correct spelling and grammar. Although they may be an effective strategy for some customers, CSRs need to be

adequately trained to know when interactive questioning is more appropriate and to have a comprehensive knowledge base that goes beyond what can be conveyed in pre-defined texts in order to successfully coordinate perspectives.

Role of Contextual relations In Understanding PM and PT

The cultural hermeneutic lens enabled us to look at PM and PT in online chat for customer support along multiple dimensions. While each of the four contextual relations shed light on PM and PT processes, they did not play an equivalent role. Intention and reference, along with our proposed fifth contextual relation of identity, were most important in understanding PM and PT with our data, but this may not always be the case. We suggest researchers apply the entire repertoire of contextual relations and consider the relationships among them, rather than use a subset, because a single relation may provide an incomplete picture. We discussed the implications of intention in coordinating perspectives in the previous section. Here, we look at the roles of reference and identity.

Numerous studies of knowledge management have looked at how overlap in knowledge – shared reference, in our terminology – can be expanded to greater shared understanding, leading to problem solving, organizational learning, or innovation [Bechky, 2003; Boland and Tensaki, 1995; Carlile, 2004] in long-term interactions. We found this is also true for short-term interactions between CSRs and customers.

We realized that the four contextual relations were insufficient to fully explain communication processes, and that a fifth contextual relation, interpretation of identity, was necessary for successful perspective coordination in online chat. When CSRs and customers present perspectives, they also present identities [Tajfel and Turner, 1986; Turkle, 1995]. Taking or accepting the identity of the other is necessary to accomplish the raison d'être of a call center. For example, a CSR must verify the identity of the customer to change account details. Even when identity is not required in a pragmatic way for the task, it may be necessary to align perspectives; the text-based and short-lived nature of the exchange may make this difficult to do.

In most studies of discourse, speaker and hearer are part of the context as their relationships (spatially and temporally) define what "here" or "there" means (e.g., deixis), forming a shared reference.[7] Thus the challenge of identity in interactions between strangers in a computer-mediated context is not surprising, even though cultural hermeneutics does not recognize it. Some customers tried to resolve this problem and exhibited a tendency toward hyperpersonal communication [Walther, 1996] where social context or personality cues within a chat message assume added weight. These customers shared personal information, used emoticons to emphasize sentiments, and conversed with CSRs as though they were in a long term relationship rather than a brief, computer-mediated encounter, which made it easier for them to create a shared understanding of context. The importance of shared understanding of identity in coordinating perspectives may have implications for other CMC, such as group support systems (GSS) that intentionally foster anonymous exchanges. Identity is hidden in GSS exchanges so contextual information about the contributor does not unduly cloud or bias subsequent interpretation of the text [Nunamaker et al., 1991]. While anonymity may be helpful in discussions about sensitive or controversial issues, it may be counterproductive when an overarching objective is to foster teamwork or distributed cognition, since these require coordinated perspectives.

Technology Implications

Our analysis suggests that the staples of successful communication – clearly-stated meaning and careful "listening" – may be more important than characteristics of the technology in technology-mediated situations like Kristal Comm's chat. In technology implementation, "human" elements should likely receive as much emphasis as purely technological issues. While lack of coherence in chat messages is not an overarching problem in coordinating perspectives, and thus should not be developers' sole focus, we do not suggest that developers stop trying to improve coherence. Other functionality is more important, but a way to ensure an orderly sequencing of messages would be a welcomed improvement in the design of chat technology.

Interpretation of identity is one case in which many of the problems we observed in the sessions could be ameliorated through technological means. The interpretation of identities for the CSR and customer could be facilitated by technology-enabled chat "histories," especially because sessions sometimes disconnect. Even though most customers initiate only one chat session, knowledge of previous chat sessions would help CSRs better serve the remaining customers. Technological support for increasing the shared reference of the customer and CSR would be beneficial. For example, when a customer initiates a chat session, basic demographic information about the customer – such as group membership – could be displayed on the CSR side, with policies and practices applicable for that group readily available. For the customer,

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[7] We thank the SE for this insight.

communication outside chat, or immediately before chat is initiated, can guide the customer about subjects such as departmentalization of functions in order to clarify the CSR's identity.

Our use of the cultural hermeneutic lens points to the opportunity for developers to use linguistic-focused design approaches such language action perspective (LAP) to guide their development efforts on chat technology. Weigand [2006: 45] synthesizes the objective of LAP as "How can IT play a role in improving human communication in organizations and society as a whole?" Originally introduced to the information systems community by Goldkuhl and Lyytinen in 1982, this linguistic-based approach offers a less technology-deterministic and more context-sensitive view of software development and information systems. While some have suggested that LAP is not appropriate for designing unstructured, conversational systems like chat [Winograd, 2006:72], we believe LAP tenets may be instructive, particularly when chat technology is used for more structured processes such as online help. Te'eni [2006] notes several design principles for LAP that can be applied to our findings. For example, chat technology can enhance shared understanding and promote relationships between CSRs and customers by providing contextual information that differentiates between novice and veteran users. A second suggestion is to "support adaptive behavior, including contingent use of alternative communication strategies, alternative message forms, and alternative media" [Te'eni, 2006, p. 67]. This could be implemented by moving call center functions to automated self-service functions, since routine interactions require less cognitive effort to build mutual perspectives than non-routine actions. Routine actions may also be more easily codified in information systems. Instead of using pre-defined texts in chat (or voice scripts over the telephone), organizations may be able to take advantage of user experience and provide a Web-based interface to allow users to take care of certain activities themselves.

Limitations and Conclusion

It is important to note some limitations to our study and the extent to which our findings can be generalized to other settings. First, Kristal Comm's customer base included multi-level marketers, service providers such as real estate agents and chiropractors, and governmental agencies. Unfortunately, we did not have data that would allow us to match individual chat messages with customer type, so we cannot make any determination of similarities or differences across customer groups. Further, about 11% of the company's customers used online chat to contact Kristal Comm's CSRs, but we do not know whether this sample is representative of the entire customer base. On the other hand, the very large number of messages that formed our sample lends some robustness to the validity of our findings and extension to other dyadic chat customer service settings.

We demonstrated that the contextual relations in cultural hermeneutics offer an analytic device and vocabulary for identifying and differentiating among the bases for both effective and ineffective interactions, which can be used to examine communication between a CSR and customer. Eighty percent of the exchanges were resolved successfully, suggesting that in most cases, the CSR and customer coordinated perspectives. In these exchanges, parties expressed intention through PM and were successful in PT and understanding the intention of the other because of shared reference. A fifth contextual relation, interpretation of identity, was also necessary to coordinate perspectives. As a methodological tool appropriate for any CMC technology, the repertoire of contextual relations in cultural hermeneutics provides a way to explore context and better understand the meaning of communication.

Acknowledgments

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EDITOR'S NOTE: The following reference list contains hyperlinks to World Wide Web pages. Readers who have the ability to access the Web directly from their word processor or are reading the paper on the Web, can gain direct access to these linked references. Readers are warned, however, that

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