AI & Soc (1999) 13:218–234
© 1999 Springer-Verlag London Limited

AI & SOCIETY

Mediation and Communication of Information in the Cultural Interface

Satinder P. Gill

Communication Science Laboratories, NTT, Kanagawa, Japan

Abstract: In man–machine communication, there is a relationship between what may be described as tacit (human) and explicit (machine) knowledge. The tacit lies in practice and the explicit in the formulation of the processes and content of this practice. However, when a human communicates with another human face to face, we may describe them as communicating aspects of the tacit and explicit dimension of their knowledge, i.e. the expression and its background of meaning for the particular situation. When this is unsuccessful in being communicated, some mediator (not necessarily a third person) is needed to provide the bridge for the particular discrepant aspects of the tacit and explicit dimensions to meet. This is achieved by making the tacit nature of the discrepancy in the communication explicit to both participants such that they both understand the background to their discrepancy. Once they become aware, it is possible for them to begin to resolve it.

In considering what has been termed here the 'cultural interface', i.e. communication across cultures, the paper will explore the nature of discrepancies in communication and the means by which we can accommodate to each other's differences, either via third party help or between ourselves. The interaction of each person's tacit (background of practices) and their interpretation, set against this background, of the explicit (the utterance, silence, gesture) needs to find some mutual ground, involving their cultural self. The operation of mediation and negotiation will be considered in this context.

Keywords: Culture; Knowledge transfer; Mediation; Negotiation; Propositional knowledge; Tacit knowledge

1. Introduction

Information and communications technology is now a part of everyday life in many cultures. Compared to other forms of human–machine interaction, communications technology enters the sphere of human relations by creating new means of expression, interpretation, understanding and misunderstanding.

Communication is not solely a matter of verbal utterances but involves a combination of bodily, social and psychological factors which influence the accommodation process. It would be useful to see the degree to which these are culturally

situated. Contrasting Western and Japanese smileys shows the cultural dimension of the relationship between body action and verbal utterance. Smileys are used to handle ambiguity and to enable the reader to grasp the intention of the writer. From this contrast, one could deduce that given a greater number of bodily representations in the Japanese smileys, there is a greater need to compensate for this dimension in the written communication.[1]

At the cross-cultural level difficulties appear to arise when there is lack of familiarity of someone's background from face-to-face experience (Ma, 1996). Ma's study of communication via computer networks between American and South East Asian students revealed that both groups were accommodating to what they perceived as each other's cultural differences, i.e. with regard to directness and self-disclosure. However, they were unable to be aware of this accommodation process, with both groups still evaluating behaviours as befit their expectations. Hence there may actually be lack of awareness of how cultures accommodate to each other and therefore of understanding and misunderstanding. This dimension of lack of awareness is also at the intercultural level, and can occur even when people have gained familiarity face to face. It is just more clearly marked at the cross-cultural level. In her study of Japanese and English workers collaborating in a merged organisation, Lam (1997) points to the difficulties that can arise when highly disparate cultures try to accommodate to each other in a face-to-face setting. In the end, in her study, the resolution was to communicate via representatives or mediators. How this would operate in a computer-mediated communication (CMC) setting is not clear as CMC changes the mode of communication for both cultures. If Hongladarom's (1998) finding, that local culture is replicated, is generally applicable then the problems may simply be replicated. His study of the Thailand Thai Soc. list is an example of local culture being replicated in a national electronic mail list.

In a recent conference on culture and CMC (Ess and Sudweeks, 1998) there were numerous differences about how to consider the dichotomy of the relationship between geographical/local culture and culture within CMC, such as local–global, local–universal, and local–cosmopolitan. Hongladarom draws upon Michael Walzer's idea of 'thin' and 'thick' cultural descriptions, describing the Internet culture as 'thin'. This thin culture makes global communication possible and may reflect more Western than non-Western values, primarily, he argues, because the dominant language of communication is English. However, he believes that such communication will not have the power to overwhelm local cultural styles and preferences which occur in their own languages. Rather, local cultures will retain their 'thickness', their deep-rooted and complex systems of values and preferences, as these reshape CMC technologies to fit those values and preferences more closely. In the interaction between global and local new mixtures emerge, for example, the Thai electronic coffee house (Ess and Sudweeks, 1998).

---

[1]This is the author's deduction. Japanese do not consider themselves to use their bodies to express themselves as much as, say, Americans in daily life. The author has drawn upon the examples of smileys and the issue of ambiguity from Nojima (1994), and takes full responsibility for the interpretation given here. In fact, Nojima has suggested to me that what is important is to convey emotional content (or feeling), but not the face itself or body motion. He cites that people now also use (laugh), (grin) instead of the smiley. (cf. in his reading of this paper). His critique raises the question, herein, of what is the import of the smiley, i.e. what is the act that is being performed, being 'signed'?

In Japan, communications technology is perceived by some to effect cultural change which needs to be harnessed for both its advantages and to ensure cultural stability, in other words, to sustain local knowledge. A significant example which illustrates this process is the Japanese 100 Schools Project (Miyazawa, 1997). The technology is seen as providing for new educational possibilities for educating students into handling the information society, and to create changes in the education system by opening its avenues of communication to the outside world.

The example of the Thai Soc. list and the 100 Schools Project in Japan indicates that far from a culture being accommodated to the technology, the technology enables the culture to explore other communication modes and expressions and participation in otherwise delicate areas, such as politics. It enables people to express directly what they otherwise could not do or would not conceive of doing. This is in line with studies on CMC, such as Davis and Brewer's (1997) study of students in the USA undertaking an electronic conference, and a study cited later in this paper (Reid et al., 1997). It liberates them from their normal face-to-face cultural constraints.

Liberation of expression from the norms of face-to-face communication, as well leading to innovative and alternative possibilities, as in the above examples, can, however, also have a negative effect. Breakdowns in CMC occur often enough for discussions to abound on the impact of the explicit nature of the written form of electronic mail correspondence upon people's emotions (e.g. flaming debates; see Kiesler et al., 1984; Lea et al., 1992; Nojima and Gill, 1997; Gill, 1998). This appears to be a universal difficulty in any culture due to the problem of interpretation of cues which cannot be felt or seen, so are projected. Negativity is the hardest dimension as it appears almost harsh in written form. Even in video conferencing there can be difficulties. 'A Japanese person in a face-to-face setting may be highly competent in communicating, yet in a video conference, finds that (maybe due to poor quality of communication channels), he misunderstands and that the emphasis is placed on "competence" in language as being equivalent to competence in communication' (Gill, 1998). His colleagues who are more competent in English have no such difficulty.

How do we manage breakdowns? It is in this context that the subject of negotiation and mediation is raised and investigated and breakdown is considered in terms of discrepancies in knowledge. It is proposed that the concept of mediation is a useful way to consider the interface between technology and society. Many historical debates on the interface between technology and society can be seen to be dealing with mediation, such as socio-technical research (Ehn, 1988), human-centredness (Cooley, 1987; Gill, 1996), anthropocentric approach (Rauner, 1987), which were complemented and sometimes followed by CSCW, HCI, cognitive technology (Gorayska and Mey, 1996), telematics etc. (see Gill, 1996, on human–machine symbiosis and the information society), A core problem in these domains is to find the synergy between the objective (machine) and the tacit (human), and a study of mediation is central to the design of a sustainable interface for this synergy.

The primary focus in this paper will be on the face-to-face context of communication, drawing both upon a case study (Gill, 1995)[2] and the domain of culture and negotiation studies. This is in order to identify key factors for difficulties in

[2]Gill, S.P. (1995). Dialogue and Tacit Knowledge for Knowledge Transfer. Unpublished PhD Dissertation, University of Cambridge.

communication, for instance why certain types of knowledge discrepancies require certain types of negotiation knowledge. It is expected that the structure and process of negotiation and mediation will change in computer-mediated settings; however, the development of a model from a face-to-face setting enables the analysis of such changes, particularly for the communication of knowledge. The analysis in this paper may be seen as the first stage in tackling these issues, which will be developed further in later work.

2. The Cultural Dimension

2.1 The Concept of Culture

The concept of culture I espouse ... is essentially a semiotic one. Believing, with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretive one in search of meaning. It is explication I am after, construing social expressions on their surface enigmatical. (Geertz, 1993)

The emphasis placed upon a semiotic conception draws attention to the meaning of our acts and how we relate these and to objects around us. If someone winks in a burlesque manner, what is the import of this? Is it ridicule or challenge, irony or anger, snobbery or pride, that is 'getting said' in their occurrence and through their agency? Geertz's description of the difficulty in understanding another culture as lying 'in the lack of familiarity with the imaginative universe within which their acts are signs' makes us aware that what is one person's idea of reality is not another's. In such a cross-cultural communication situation, by what means can we manoeuvre or reconstruct our perspective so that we can see the other's world, and vice versa. 'Culture's significant symbols such as words, gestures, drawings, musical sounds etc. are largely given (Geertz)', and we are encultured in relating to these symbols and appreciating them in particular ways, which instil various emotions or resonances in us.

We may think of ourselves as living in an information gap. In order to function we fill ourselves with information (or misinformation) provided by our culture. Our ideas, our values, our acts, even our emotions, are, like our nervous system itself (through evolution), cultural products – products manufactured.

This is echoed in Cohen's critique of culture in the case of International Negotiations in Water disputes (Cohen, 1993): Cohen cites Klukhon's (1951) view that culture is fundamentally about information and the projection of significance onto the world. Culture can be thought of as a set of underlying grammatical rules, a semiology, guiding perception and structuring meaning. Culture shapes our actions, defining the rules of interaction for meeting, parting, bestowing hospitality, trading, begging, giving, and negotiation.

2.2 Negotiation and Culture

Negotiation is a means to managing identity – when one of the parties does not take identity into consideration, problems arise. 'Culture is identity, because it is culture that ultimately enables human beings to exist and carry the meanings that allow

them to know who and what they are.' This boils down to the management of meaning. When culture becomes defined, not in terms of interests, but as the core of group identity, the negotiation has to reconcile this, which is more difficult than reconciling interests.

Other significant factors in negotiation include concepts of fairness – culturally bound in its values. Another is historical memory, where the matter is no longer the social memory of the group but its impact on the negotiator's memory. New values have to be created and old images modified to enable parties to evolve new and more effective ways of managing through negotiations.

The UN studies of the Water Disputes (Faure and Rubin, 1993) show that culture's effect on international negotiation is least prominent when structural factors are strong and vice versa. For instance, other things being equal (e.g. structural constraints), as conflict increases, so does the role of culture in international negotiation.

It is suggested that cultural issues relate to three different problems: communication, perception and identity. Where cultural aspects concern only communication, the resulting difficulties can be reasonably overcome, as shown in numerous studies on intercultural communication. When perceptions are at stake, concerning either the nature of the negotiation or actors, these perceptions produce distortions that are harder to correct, and classical techniques to classify and improve communication have a minor effect. When the very identity of the actor is at stake, such cases belong to a specific domain that cannot be subsumed under communication approaches, but refers to the structure of the subject within the very process of negotiation.

The role that culture plays in negotiation could be classified according to the above three problems: (a) in the communication problem, there is a combination of culture, structure, actors' interests; (b) in the perception problem, culture, under specific circumstances, may over-determine other aspects (it is part of the definition of the problem and the action supposed to lead to its solution); and (c) in the identity problem, culture becomes the unique element, overshadowing all others, and erects itself as the prerequisite.

2.3 Mediation and Culture

There are cultural differences in negotiation behaviour and mediation. In a summary of published research on negotiation (in Carnevale and Pruitt, 1992), its focus is primarily upon an American Euro-centred way of thinking about the mediator in resolving disputes and differences amongst interested parties. They point to the need for research into culture and negotiation, particularly with the increasing cross-cultural interaction in many spheres of life. In a recent compilation on *Culture and Negotiation*, Faure and Rubin (1998) consider what is the distinctive effect of culture. It can both create opportunities for settling disputes or become an obstacle to negotiation. The context of their discussion is international conflict and they argue that the meaning of negotiation cannot be understood fully unless it is interpreted in the cultural context within which it occurs. They describe negotiation as often being modelled as rational choice by Western researchers, without room for such factors as culture, and they challenge this. They cite Herriot, a twentieth-century French writer and politician who defined culture as being 'what remains when one has forgotten everything'. This paradoxical proposition captures the salient properties

of culture, the fact that it is not just a matter of substance but a way of thinking or acting, in a way that a subject is typically unaware. Defining culture is rather controversial, as the conference on culture and CMC cited in the introduction brought out clearly. Kroeber and Kluckhman (1963) have collected more than 160 definitions of culture.

Culture orients or even directs judgement or opinion. Culture may be an obstacle in so far as stereotypes distort signals and cause misunderstanding. On the other hand, if two parties perceive cultural similarities, and share overarching values, communication may be facilitated. Hence at some metaphysical level there is a point of contact. Faure et al., raise a question of whether, given the cultural dimension, negotiations can be understood accurately other than in the society within which they take place. They question if it is possible to come up with a general model of negotiation. For them, the purpose of negotiation is to find a formula for the distribution of a contested value or set of values between negotiating parties.

Culture clearly becomes an issue in cross-cultural communication situations. Literature on intercultural communication (e.g. Fisher, 1988; Gudykunst and Kim, 1984; Singer, 1987) discusses it as the confrontation of profoundly incompatible and culturally grounded assumptions about the nature of the world, verbal and non-verbal communication and key aspects of behaviour. At stake are matters such as whether society puts the individual or group first or approaches the resolution of a dispute on the basis of abstract justice or social harmony.

A comparison is made between different kinds of intercultural or cross-cultural communication. It is not enough to assume a universal kind of cross-cultural communication. For some cultures are able to negotiate their differences, while others are unable to without a mediator: compatible interaction between similar or related cultures (e.g. states bordering the Rhine); complementary interaction between dissimilar cultures (e.g. USA–Japan); non-complementary interaction of related cultures (e.g. adjacent Arab cultures); and incompatible interaction that may occur between dissimilar cultures (e.g. Japan–Russia).

Although the cases cited are at the level of international negotiations, these clearly bind the negotiator to be obligated to what she/he represents, and that the person embodies her/his culture is evident in the negotiation process and the values brought to bear upon it. Hence, it is considered fruitful to consider such examples for a study of interaction at the cross-cultural interface.

At this level of negotiations, Cohen takes the stance that negotiations are considered to take two main forms: a traditional form, which is to make the best of the interests involved; and an alternative form which is to undertake joint problem solving, based on an egalitarian model. In contrast to either of these, a culturally sensitive approach is proposed as being more realistic and focusing on cultural values and ideas.

As stated at the beginning of the section on negotiation and culture, it is about managing identity. How we absorb certain kinds of information depends upon what is available to us in the environment we grow up and live in. Likewise, how we then come to receive or 'sample' information may depend on whether and how it is 'self-relevant'. From research into culture and the self, studies into communication have suggested that utterances that constitute the self have 'implications for the way people sample information that is self-relevant more frequently than information that is not self-relevant' (Triandis, 1989). The examples cited in Faure and Rubin's

(1993) collection of case studies of international negotiations suggest how the various cultures sample information in their negotiations and how, when they are unable to because it is not self-relevant, they then need a mediator to bridge their selves. Self, in this case, operates in a number of ways, depending on which symbols resonate with those of the self, and how they do so. It is held herein that the examples at the country level of culture and negotiation can be informative about the relationship between self and culture in the cross-cultural situation. These occasions are undertaken by persons from the respective cultures. In fact the negotiators need to be perceived by the persons they represent as attached to their common culture (Salacuse, 1993).

3. Mediation and Knowledge Transfer

In this section, a particular approach towards the mediator and mediation is illustrated with an example from the area of group working in computer software design. The example taken here is situated within a discussion of the interrelationship of the tacit and explicit dimensions of knowledge. In earlier work (Gill, 1995), it had been demonstrated that the success and failure of the transfer of knowledge consists in the relationship between the tacit and explicit dimensions of knowledge. This critiqued the idea, prevalent at the time, that it is possible to represent 'expertise' in a database such that the 'information' can be coded and logically processed. Within this system, it would be assumed that 'data' or 'information' can be taken from its context without losing its meaning, as its meaning becomes redefined within a system of rules and connections. A study was undertaken of what constitutes a 'piece' of 'information' within the conversation taking place amongst a software design team. It was found that where this information ('topic') began was where there was a discrepancy in knowledge amongst the conversants. Where it ended, a new piece of information (topic shift) was mentioned, where the discrepancy had been resolved or at least reached a consensus such that the conversation could move forward.

In the process of this analysis, the mediator was found to be significant for making for this resolution in discrepancy and consensus in knowledge, by being able to be empathetic with the critical discrepancies. Empathy is here defined as the compatibility to generate shared understanding with respect to a particular combination of compatibilities such as role, level of knowledge, forms of expression and personality.[3] Empathy is necessarily personal and involves emotion. Empathy is, therefore, the ability to share or generate understanding of knowledge (which is necessarily personal, and can be propositional) role and personality.

The analysis herein will focus on the mediator and the process of mediation with respect to knowledge transfer in communication. In this system of knowledge transfer and mediation, the design is depicted as a process involving knowledge acquisition, i.e. knowledge transfer and formation, and dialogue is a carrier of this. In this case, dialogue is that between people in a design team. Hence one can analyse the dialogue as a means of analysing the process of knowledge in design.

[3]It is akin to aesthetic emotion – e.g. our resonation to the structures, textures, forms and colours of a painting, as well as the theme presented by them. By empathy, I do not mean sympathy.

The tacit and explicit dimension of knowledge for the communication situation will be defined as being the expression and its background of meaning for the particular situation. When this is unsuccessful in being communicated some mediator is needed to provide the bridge for the particular discrepant aspects of the tacit and explicit dimensions to meet. This is achieved by making the tacit nature of the discrepancy explicit to both participants such that they both understand the background to their discrepancy. Once they become aware, it is possible for them to begin to resolve it. The analysis follows a qualitative human-centred approach to knowledge.

It is proposed that the success or failure of knowledge transfer is dependent upon the set of relations between kinds of knowledge (content) and the processes which influence its transfer, i.e. discourse dynamics. The categories of knowledge (content) considered herein are: Propositional, Experiential, Personal, and Practical. Propositional knowledge may be expert (domain) knowledge, or knowledge which can be expressed in the form of rules, made explicit. It is non-personal and non-experiential. Experiential knowledge is that which comes from one's own direct experience of the knowledge one expresses, or it is cultural/social knowledge, or it is knowledge of another's experience, or of an event. Experiential knowledge consists of personal knowledge. Personal knowledge is that of the individual personality, expressed as values, beliefs, emotions. Experiential knowledge is the relating of one's experience. This may be either direct experience which is indicated by the use of 'I', 'we', etc. or general knowledge (e.g. knowledge about a culture), or generic knowledge[4] (a frequent experience: 'whenever I do ...'), or episodic knowledge[5] (a specific experience: 'the other day I was ...'). Practical knowledge is the skill itself to communicate (as in interact) and cannot be described here. Practical knowledge is the performance of skill. It can be inferred but not made explicit: decisions, judgements, analyses, indicate (point to) practical knowledge but do not represent it. Practical knowledge will not necessarily be identified in the analysis of each extract. This is because it cannot be identified in an utterance, unlike the other aspects of discourse cited here. However, it is noted for its significance for knowledge transfer. In Gill (1995) it was found that the relationship between the elements of content and dynamics is orthogonal, and will vary dependent upon the particular situation, whether this be the task, the task domain, the composition of people, power or roles. It is expected that the weightings of certain elements will be greater than others accordingly.

Discourse dynamics includes forms of expression, knowledge by familiarity, goals and group dynamics. These convey information. They are formalised expressions, analogies, metaphors, stories, jokes, personalised forms (i.e. personal pronouns; these indicate the relationship of the person to the information) or depersonalised lexical items. The goals of the speaker and listener involve assumptions about each other, ranging from the level of personality to that of knowledge, which influence the speaker's and listener's strategies. Knowledge by familiarity involves the use of examples by the speaker to transfer knowledge. Within group dynamics, roles can be determined by organisational hierarchy, group hierarchy or relevant expert

[4]This is based on the idea of generic structures in memory which summarise similar events (cf. Barsalou, 1988).

[5]This is as in episodic memory (cf. Tulving, 1972).

knowledge. Humour and laughter can ease tension, and power discrepancies can exist in knowledge, roles or gender.

Outcomes of the dialogue are knowledge acquisition or its failure, group knowledge, dynamically stable knowledge[6] and trust. Knowledge acquisition is successful when the communication between a speaker and a listener is consensual and compatible. It fails where no compatibility in communication can be established between speaker and listener. Group knowledge denotes a new level of group consensual knowledge: indicated by a qualitative difference over time, e.g. from the beginning of the meeting to the end. Trust is both an aspect of group dynamics, but is also a possible outcome of dialogue and is independent of the success or failure of knowledge acquisition. The system of interaction between content and processes in the communication is orthogonal. The nature of particular connections depends upon the context and culture of the communication. For example, in an English court of law, a lawyer cannot easily use personal lexical items yet can express personal beliefs and values within a formalised language use and structure. Hence the significance of some elements bearing on the process of knowledge transfer would differ between, say, the situation of a court of law and that of landscape architects designing together. If the latter are drawing, the dialogue is likely to be more proportionally physical than a court of law, hence different group dynamics, such as body gestures and movements, would bear to a greater extent on the interaction with the content level. These aspects of knowledge are enacted or embodied in discourse dynamics, such as goals, forms of expression and group dynamics.

3.1 Mediation as a Special Case of Negotiation

At this point it may be helpful to consider mediation as a special case of negotiation (cf. Carnevale et al., 1992). They refer to strategies and motivations of the mediator as affecting the success or failure of the process of mediation. From the study herein, the group discourse involved motivated participants. Of the three prevalent strategies of making concessions (reducing demands and aspirations), persuasion (for one to yield to other) and problem solving (for maximum satisfaction of both parties), the mediator in our study follows the latter one. However, in the course of the conversation prior to the mediator's act, there are a range of strategies by participants. Four types of motivation are cited in the literature (Kressel, 1972; Kressel and Pruitt, 1985; Lim and Carnevale, 1990; McLaughlin et al., 1991; Wall, 1981; Touval and Zartman, 1985) – individualistic, altruistic, cooperative and competitive – the determination of which depends on the degree of self-concern to other-concern. Hence, for example, high self-concern is individualistic. In this categorisation, it is not clear where to position our mediators. They seem to lie between being altruistic and cooperative. However, the participants in the moment prior to the mediator's act seem to act from a range of these motivations. Carnevale et al. suggest that all three strategies are necessary to reach an agreement. It would appear that the approach to media-tion and negotiation by Carnevale et al. maps onto the overall

[6]This denotes an individual's ability to have acquired the knowledge such that they can use it in a sustainable manner; a kind of psychological state whereby someone can maintain their performance of the knowledge over time.

discourse in the problem-solving process in the study undertaken here. However, the consideration of what is the mediator differs because in this group a different person acts as mediator depending on the problem and circumstances of personality and knowledge. This is not predetermined. The terms 'mediator' and 'mediation' as applied here have been assigned by the researcher. The mediator's act sets the mediation in process.

The cognitive tradition which focuses on a negotiator's perceptions and information-processing procedures focuses on judgement making. This involves two perspectives: cognitive heuristics and biases (short cuts) (cf. Tversky and Kahneman, 1974), and schematic information processing. Heuristics includes availability, i.e. reliance on salient recollected information to make judgements. Clearly the mediator does this. An arbitrarily chosen reference point, which in the study would be the goals and problem defined at the outset of the conversation (e.g. user lacks up-to-date information on the design) has an effect on judgements. In this case, it focuses attention on the user, and not on the designer. However, the mediator is not affected by this.

Schematic information processing, i.e. cognitive factors, such as perception of intentions, attitudes, beliefs about the other, perception of the situation, or a person's construction of social reality, determines negotiation behaviour (Abric, 1982; Deutsch, 1982; Brodt, 1990). Norms of behaviour and relevance of information are determined by the way parties develop a cognitive interpretation of the context, the issues and the negotiation task. Negotiator knowledge is represented in the schemata. Schemata are hypothesised cognitive structures that contain information about the negotiation and that guide negotiation behaviour. They are to develop from frequent processing of different instances of items or material in memory (Taylor and Crocker, 1981). It is clear from this study that there is a strong case for schemata embodying negotiator knowledge. In the study, the nature of schemata of the mediator would be considered as the representation of the tacit knowledge of the discrepancy, and its explication. The schemata need to be considered as part of the dialogue. As part of the investigation of the mediation process, the study indicates what makes for the success and failure of being able to share/transfer the different kinds of knowledge. These factors are important for sustaining[7] the dialogue, and for the mediator and mediation. Sustainability is an important process and enables the reduction of noise in the information environment of the dialogue.

From the study and from the discussion of culture and negotiation/mediation, we can draw three basic requirements for a person to be a successful negotiator or mediator:

1. understanding the other; understanding the situation of discrepancy between two parties (or more)

[7]In most research and applications of mediator, the person retains this position throughout a dispute situation. Hence, the mediation process involves the mediator making a number of interventions to mediate. Sometimes they may not succeed and sometimes they do. Where they do not, and interventions disturb the communication rather than enable it, is not seen as a problem in the situation held in this paper. The constant intervention, sometimes with information irrelevant to the particular problem (rhetorical) by various negotiators or participants, is seen as functioning to sustain the dialogue. It serves to clear up the noise in order for the person who will be the mediator to act as such.

2. knowledge of the gap between oneself and the other; knowledge of the gap between parties (or more);
3. ability to express this understanding and knowledge to other or others, i.e. produce the bridge.

The first is a necessary condition, and this has to function in conjunction with the next two. It is not sufficient to understand the nature of the discrepancy nor to have the key knowledge; one needs to be able to convey this in a form that others can receive, according to their symbol system. It was for this reason that forms of expression and style (i.e. the way in which they are projected) were considered to be so significant for the transfer of knowledge in the study. Personality also played a role as this influenced the perceptions people have of each other, and affects their reception of information imparted. Being aware or understanding the other requires an understanding of how the other perceives you. The concerns in cross-cultural negotiation apply to intra-cultural negotiations too.

Taking points one to three, a third part mediator becomes a necessity when the negotiators are unable to achieve point three, and they may be unable to do so precisely because of the inability for the tacit dimension of their symbol/sign systems to meet, i.e. the relationship between their act and what is 'getting said'; i.e. their practical knowledge.

In the following example we can see this happening. In a study (Lam, 1997) of attempts at collaborative working between British and Japanese engineers in a Japanese company which took over a British firm, we can see how the cultural differences can impede collaborative work and knowledge transfer, as knowledge is socially embedded.

The engineers are undertaking high-level technical work. In the British firm knowledge resides in individuals who have specific functions. In order to be communicated within the firm, it has to be 'externalised' and translated into procedures, guidelines or specifications for transmission to other members of the organisation. Tacit knowledge (cf. Polanyi, 1966) has to be codified and made explicit to be understood by people who cannot access it through a shared common experience or background. The Japanese firm, however, has an 'overlapping' approach which is highly dependent on intensive human network-based communication and knowledge sharing across functional boundaries. Project coordination is achieved through frequent 'reciprocal' communication (flow) and mutual adjustment.

The differences in the way knowledge is structured, utilised and transmitted led to project failure in the case that Lam writes of, and weakened the technological relationship between the partner firms, leading to what she terms asymmetry in knowledge transfer. The Japanese found it relatively easy to access the knowledge of the British because it had been made explicit, but the British found it very difficult to access the 'knowledge' of the Japanese because of the collective and fluid nature of the knowledge in the groups which cut across functions. The British complained that the Japanese were not logical, and the Japanese complained that the British were not skilled but abstract and fragmented. When asked to make a design for a product, the British engineers sought to get clarity upon receiving incomplete information. However, the Japanese did not want a final design, but an idea for development, for discussion and negotiation. The British found that in the end they

did not meet the requirements of the Japanese and the design failed because they could not understand the Japanese instructions.

From the perspective of a discussion on cross-cultural negotiation (mediators), this is an example which shows how one can be unable to understand what is being 'said' with the act, i.e. what is the sign, of the respective cultures. In this particular example, the only resolution was to negotiate between representatives from each culture who would operate at an abstract level, and then develop and interpret the ideas with their own groups, which in turn would be translated at an abstract level for the negotiations. This negotiation process has not been discussed in Lam's paper and would be most interesting for understanding the differences between the communicative acts at the 'abstract' level compared to the practical daily interaction level. In addition it would help in understanding how the practical level is translated at an 'abstract' negotiable level.

4. Mediation and Computer-Mediated Communication

Computer-mediated-communication (CMC) is a subject of increasing importance as it becomes a part of everyday life for many people in many countries. There are clearly differences between the way we communicate face to face and via the internet, say in the case of email. The cues that we take for granted are not present, and in order to sustain communication alternative cues are adopted, such as a variety of smileys (Nojima, 1994), to make sure that misunderstandings are lessened.

A study of CMC can make us aware of which cues are, in fact, essential for negotiating and mediating discrepancies in knowledge in the communication. Already, we are aware of the physical cues that make it possible for us to understand and misunderstand each other. It is clear from the study (Gill, 1995) that eye contact was important, that the idiosyncratic gesture of the personality indicated what they were about to say, and that these movements were responded to. How far such cues are critical at the moment a mediator intervenes is not clear, but a study of the operation through CMC may give us some idea. How do we become aware of discrepancies in knowledge in CMC versus face-to-face communication?

In the area of CMC negotiation, Arunachalam (1991) reported that CMC negotiations took longer to complete, were more hostile and led to poorer outcomes than face-to-face negotiation, although negotiators showed marked improvement in outcomes over repeated negotiations. This suggests that familiarity over time helps in handling negotiations through this new medium.

In their study of styles of group discussion in CMC decision making, Reid et al. (1997) investigated a claim that keyboard-based computer-mediated group discussion suppresses normative influence relative to informational influence. CMC helps idea generation and sharing, but hinders groups performing tasks requiring agreement on judgmental matters (Strauss and McGrath, 1994). It is held that this is due to the filtering out of social and contextual cues from CMC, which are normally present in face-to-face communication (Kiesler et al., 1984; Sproull and Kiesler, 1991a; Culnan and Markus, 1987).

Their subjects were university students, and the experiments were conducted with groups of four, in a face-to-face setting using computer monitors, and a non-face-to-face

setting using computers. Reid et al. show that in CMC group members are more self-absorbed, verbally uninhibited, and discussion is depersonalised and disorganised, making consensus more difficult to achieve. For many groups this resulted in greater originality, but also more volatile and extreme decisions. In discussions on cognitive technology, there has been a concern about self being equated with the message communicated, as there is less awareness of the other (Good, 1996). This would back up the claim that group members are more self-absorbed.

In their experiment (cf. Reid et al., 1997), the CMC study cited suggests that agreements are reached in a coercive manner as members put pressure on each other to arrive at an agreement. Their final goal seems to be to reach that agreement rather than work at arriving at understanding the root of a problem. It is interesting that they produced more positional and value statements than the face-to-face groups. This is a situation where knowledge is still unstable, i.e. unresolved. The agreement is purely for the task and not for the knowledge. This is not a consensus facilitated by an empathetic mediator. It is simply a case of negotiations. In the one case, not yet mentioned, from the study of the mediator (Gill, 1995), there is an example where power determines the final agreement for the sake of reaching a conclusion. The agreement is forced, although not in any aggressive manner. There were also a greater number of positional and value statements undertaken in that case. It is important to investigate the situation of CMC negotiation further, as there is a suggestion that negotiation improves with repeated experiences in this medium. Thus the results of Reid et al. may have arisen because of lack of familiarity in how to manage such a communication mode. The findings might prove useful for further research.

There is no doubt that the process of identifying problems and negotiating and mediating knowledge will not be the same as in the face-to-face situation. In face-to-face it is easier to grasp the tacit knowledge, which participants now have to express explicitly, through many unsaid cues such as a pause, a look, a gesture, a sigh, a hesitation in the voice, an intonation which belies the verbal content, etc. There are two points of interest here: how a study of CMC enables the identification of critical bodily actions for handling discrepancies in knowledge, i.e. which aspects of the tacit dimension are critical for managing propositional knowledge; and secondly, how the mediator identifies the critical dichotomy and mediates this to the critical participants, and how the group can become aware of this. The latter, for instance, can be shown with a topic shift.

4.1 Mediator for Sustainability of CMC

In a study of CSCW in a large Japanese manufacturing firm, Okamura et al. (1995) show how the use of a computer conferencing system in an R&D laboratory was significantly shaped by mediators who guided and manipulated the use of the technology over time. They continued to modify the technology and influence use patterns to respond to changing circumstances. The authors argue that well-managed mediation may be a useful mechanism for shaping technologies to evolving contexts of use, and thereby helping CSCW applications to succeed.

The conferencing system was being used by a large project group in the organisation. A small set of users had actively shaped the others' adoption and ongoing

use of the system. The group in question was developing a new computer product to improve the company's competitive position. This technological development was intended to support this work. The mediators initiated cross-fertilisation between various newsgroups, and they tried to make the news system more convenient, easier and more relevant for project members to engage in.

These mediators were a group of software engineers who, in the early stages of the project, felt that its large scale would need network administration to maintain it, and that as it involved many people, sharing information was especially important for establishing collaboration. The group made decisions by consensus in face-to-face meetings, and used email to supplement these. They solicited the participation of all project members. At first they sent out emails, and spoke in person to those who did not reply to these. It was important to get users' ideas instead of directing them to use the news system as an official communication medium. In doing so, they achieved the latter. They constantly modified the system according to users' feedback which they received in many forms, including violated usage rules and improper posting of messages, expressions of confusion and queries about the system in their news messages, and direct feedback in either face-to-face or email communications.

The authors conclude that because such mediators directly influence users' interactions with their technology, they can have a profound effect on how usable, appropriate and relevant the technology is (and remains) in particular contexts of use. The nature and efficacy of mediation are likely to depend on the type of individuals involved. Where mediators are themselves users and thus have intimate knowledge of the context of use as well as credibility with the users, their actions will be more locally appropriate and more likely to be accepted by the users. The authors also suggest that the sanction, recognition and support of such mediators will enable more innovative and locally customised uses of technology, facilitating its evolution.

This is one example of how the mediator can function in CMC to sustain the communication or the system of use.

4.2 Mediation, Culture and CMC

Although this paper will not develop a discussion on the inter-cultural and cross-cultural communication in CMC with respect to mediation, it is helpful to see how the idea of mediation has relevance in this context. Many studies in psychology have proposed that there is a fundamental difference between Asian cultures, such as Japan, and Western cultures and that this difference is situated in a predominantly dependent (Japan) and interdependent (West) self (cf. Fiske et al., 1997). The Internet is a network-based technology which invites one person to communicate with another (via email) and to search for information, e.g. on the Web. For some, this functions as an additional convenient means to communicate with people they already know, or one way to connect to people they might otherwise have some difficulty in accessing, e.g. because of power differentials. The speed and direct nature of the communication that it provides for means that the use of the Internet can appear to function as a substitute for direct face-to-face communication. People communicate 'on-line' as if they are talking. They build relationships and express emotions, etc. Does the cultural difference of a predominant kind of self influence the way in which people use these technologies?

One could, for example, suggest that the mediator example situated within a Japanese company is located in a particular 'social self'. In a culture that places emphasis on harmony, it has developed ways to capture possible discrepancies and handle them before they become a negative force in the communication within a group. Japanese may be described as being proactive in maintaining harmony in the communication. In this context, the use of the written form in CMC means that new mechanisms of maintaining harmony need to be found.

Hence it is not the idea of mediator itself that is new in these CMC studies, as 'facilitators' for CMC exist in other cultures, but the manner in which mediators are arrived at, that might be the cultural aspect in the design of the communication system. In other words, the manner in which the negotiation and mediation for arriving at a suitable system of mediator operation itself taking place may be where a comparative cultural analysis can be made. This requires a further investigation of mediator practices in the Japanese culture.

5. Conclusions

The concept of mediation is becoming of increasing importance with the increasing use of various forms of computer-based communications technologies. The meaning taken here is situated in the context of resolving breakdowns in the transfer of knowledge. A study of breakdown, due to the knowledge discrepancies in the communication, is seen as a useful way for considering what makes for the successful transfer of knowledge. In the design of any system, breakdown is a situation that it is important to be able to resolve, and the system needs to embody the mechanisms by which to handle it. By investigating the dynamics of tacit and propositional knowledge in communication, some key aspects have been identified as enabling the mediator to perform. The interventions by negotiators prior to the mediator's intervention serve to clear the noise of information. Further work needs to be undertaken on the process of mediator and mediation both from a cognitive and discourse analytic perspective.

The discussion on the mediator is relevant to computer-mediated communication. Numerous cases have been written on the problem of breakdown in this mode of communication, which sometimes occurs in an aggressive manner. It is clear that there is a difference in the way we read and impart information from the face-to-face situation. For instance, in the case of email we project our self onto the information because there is less awareness of the other; we find new modes/symbols to express our feelings and intentions, from those we use/perform when interacting face to face (hence we develop new possibilities of communication forms); we use this mode of communication to compensate for face-to-face difficulties or to avoid them; we meet face to face to compensate for what cannot be imported in email. In considering how one can apply the face-to-face model of the mediator developed here to the case of CMC, it is expected that the processes and structures will take a different form. The framework of knowledge transfer illustrated here has not taken a particular cultural stance towards motivation or strategy. However, it embodies the cultural dimension in its account of the dynamic interrelationship between tacit and propositional dimensions. There is no doubt that the processes of negotiation and mediation are situated in culture.

Acknowledgements

I would like to thank my colleagues at NTT, Hisao Nojima for his suggestions on the subject of negotiation and culture and highlighting factors in this complex subject; Takehiko Ohno for reading this paper, and for discussions on the mediation process; Dr Masahito Kawamori, for insights into negotiation, culture and knowledge transfer, and for reading and commenting on this paper; and Dr Kiyoaki Aikawa for reading and commenting on this paper. I also thank Dr Ken-ichiro Ishii, the Executive Manager of the Information Science Laboratory, Dr Takeshi Kawabata and Dr Kiyoaki Aikawa at the Communication Science Laboratories, for supporting my work.

References

Abric, J.C. (1982). Cognitive Processes Underlying Cooperation: The Theory of Social Representation. In Derlega and Grzelak, 73–94.

Arunachalam, V. (1991). Decision Aiding in Multi-party Transfer Negotiation: The Effects of Computer-Mediated Communication and Structured Interaction. PhD thesis, University of Illinois, Urbana.

Barsalou, L.W. (1998). The Content and Organisation of Autobiographical Memories. In Neisser, U. and Winograd, E. (eds) Remembering Reconsidered: Ecological and Traditional Approaches to the Study of Memory. Cambridge University Press, New York, 193–243.

Brodt, S.E. (1990). Inside Information and Negotiator Decision Behaviour. In *3rd Annual Meeting of the International Association of Conflict Management,* Vancouver, BC.

Carnevale, P.J. and Pruitt, D.G. (1992). Negotiation and Mediation, *Annual Review of Psychology.* **43**. 531–582.

Cohen, R. (1993). An Advocate's View. In Faure, G.O. and Rubin, J.Z. (eds) Culture and Negotiation. Sage, London.

Cooley, M.J.E. (1987). Architect or Bee: The Human Price of Technology. Hogarth, London.

Culnan, M.J. and Markus, M.L. (1987). Information Technologies. In Jablin, F.M., Putnam, L.L., Roberts, K.H. and Porter, L.W. (eds) *Handbook of Organizational Communication: An Interdisciplinary Perspective.* Sage, Newbury Park, CA, 191–233.

Deutsch, M. (1982). Interdependence and Psychological Orientation. In Derlega and Grzelak 15–42.

Ehn, P. (1998). Work Oriented Design of Computer Artifacts. Arbetlivscentrum, Stockholm.

Ess, C. and Sudweeks, F. (1998). Proceedings of Cultural Attitudes Towards Technology and Communication, London, 1–3 August 1998. University of Sydney.

Faure, G.O. and Rubin, J.Z. (1993). Culture and Negotiation. Sage, London.

Fisher, G. (1988). Mindsets. Intercultural Press, Yarmouth, ME.

Fiske, A.P., Kitayama, S., Markus, H. and Nisbett, R. (1997). The Cultural Matrix of Social Psychology. In Gilbert, D., Fiske, S.T. and Lindzey, G. (eds) Handbook of Social Psychology. McGraw Hill, 915–981

Geertz, C. (1993). The Interpretation of Cultures. Fontana Press, London.

Gill, K.S. (ed.) (1996). Human Machine Symbiosis: The Foundations of Human-Centred Design. Springer, London.

Gill, S.P. (1998). The Cultural Interface: The Role of Self. In Ess, C. and Sudweeks, F. (eds) *Proceedings of Cultural Attitudes towards Technology and Communication,* London, 1–3 August 1998. University of Sydney.

Good, D. (1996). Patience and Control: The Importance of Maintaining the Link Between Producers and Users. In Gorayska, B. and Mey, J.L. (eds) *Cognitive Technology: In Search of a Human Interface.* Elsevier, Amsterdam, 79–87.

Gorayska, B. and Mey, J.L. (1996). Cognitive Technology, *AI & Society Special Issue.* **10**(3, 4).

Gudykunst, W.B. and Kim, Y.Y. (1984). Communicating with Strangers: An approach to Intercultural Communication. Addison-Wesley, Reading, MA.

Higgins, E.T., Heiman, C.P. and Zanna, M.P. (eds) (1981). Social Cognition: The Ontario Symposium. Erlbaum, Hillsdale, NJ.

Hongladarom, S. (1998). Global Culture, Local Cultures, and the Internet: The Thai example. In Ess, C. and Sudweeks, F. (eds) *Proceedings: Cultural Attitudes Towards Communication and Technology '98.* University of Sydney.

Kazuo, O. (1979). How the 'Inscrutables' Negotiate with the 'Inscrutables': Chinese Negotiating Tactics vis-à-vis the Japanese, *China Quarterly.* **79**. 529–552.

Kiesler, S., Siegel, J. and McGuire, T. (1984). Social Psychological Aspects of Computer-Mediated Communication, *American Psychologist.* **39.** 1123–1134.
Klukhon, C. (1951). The Study of Culture. In Lerner, D. and Laswell, H.D. (eds) *The Policy Sciences.* Stanford University Press, Stanford, CA, 86–101.
Kressel, K. (1972). Labor Mediation: An Exploratory Survey. Association of Labor Mediation Agencies, Albany, NY.
Kressel, K. and Pruitt, D.G. (eds) (1985). Mediation Research. Jossey-Bass, San Francisco.
Kroeber, A. and Kluckhman, C. (1963). Culture: A Critical Review of Concepts and Definitions. Random House, New York.
Lam, A. (1997). Embedded Firms, Embedded Knowledge: Problems of Collaboration and Knowledge Transfer in Global Cooperative Ventures, *Organization Studies.* **18**(6). 973–996.
Lim, R.G. and Carnevale, P.J. (1990). Contingencies in the Mediation of Disputes, *Journal of Personal and Social Psychology.* **58.** 259–272.
Ma, R. (1996). Computer-Mediated Conversations as a New Dimension of Intercultural Communication between East Asian and North American College Students. In Herring, S. (ed.) *Computer-Mediated Communication: Linguistic, Social and Cross-Cultural Perspectives.*
McLaughlin, M., Carnevale, P.J. and Lim, R. (1991). Professional Mediators Judgements of Mediators Tactics: MDS and Clustering Analyses, *Applied Psychology.* **76.** 465–472.
Miyazawa, K, Gill, S.P. and Nojima, H. (1999). The Influence of the Internet on Japanese Education: Case of the 100 Schools Networking Project. In *Proceedings of IWS '99,* Osaka, Japan.
Nojima, H. (1994). Social and Cultural Aspects of Human and Computer Networks: Japanese Perspective. In *Proceedings of Conference on New Visions of Post-Industrial Society,* University of Brighton, UK.
Nojima, H. and Gill, S.P. (1997). Cultural Differences in Evaluative Communication. In *Proceedings of the Second Conference of The Asian Association of Social Psychology,* Kyoto, Japan.
Okamura, K, Fujimoto, M., Orlikowski, W.J. and Yates, J. (1995). Helping CSCW Applications Succeed: The Role of Mediators in the Context of Use, *The Information Society.* **11.** 157–172.
Polanyi, M. (1966). The Tacit Dimension. Doubleday, New York.
Rauner, F., Rasmussen, L.B. and Corbett, M. (1988). The Social Shaping of Technology and Work, *AI & Society.* **2.** 47–62.
Reid, F., Ball, L.J., Morley, A.M. and Evans, J.St.B.T. (1997). Styles of Group Discussion in Computer-Mediated Decision Making, *British Journal of Social Psychology.* **36.** 241–262.
Salacuse, J.W. (1993). Implications for Practitioners. In Faure, G.O. and Rubin, J.Z. (eds) *Culture and Negotiation.* Sage, London.
Singer, M.R. (1987). Intercultural Communication: A Perceptual Approach. Prentice-Hall, Englewood Cliffs, NJ.
Sproull, L. and Kiesler, S. (1991). Connections: New Ways of Working in a Networked Organisation. MIT Press, Cambridge, MA.
Strauss, S.G. and McGrath, J.E. (1994). Does the Medium Matter? The Interaction of Task Type and Technology on Group Performance and Member Reactions, *Applied Psychology.* **79.** 87–97.
Taylor, S.E. and Crocker, J. (1981). Schematic Bases of Social Information Processing. In Higgins, E.T., Heiman, C.P. and Zanna, M.P. (eds) *Social Cognition: The Ontario Symposium.* Erlbaum, Hillsdale, NJ, 89–134.
Touval, S. and Zartman, I.W. (1985). International Mediation in Theory and Practice. Westview Press, Boulder, CO.
Triandis, H.C. (1989). The Self and Social Behaviour in Differing Cultural Contexts. American Psychological Association, Washington, DC.
Tulving, E. (1972). Episodic and Semantic Memory. In Tulving, S. and Donaldson, W. (eds) Organisation of memory. Academic Press, New York.
Tversky, A. and Kahneman, D. (1974). Judgement under Uncertainty: Heuristics and Biases, *Science.* **185.** 1124–1131.
Wall, J.A. (1981). Mediation: An Analysis, Review, and Proposed Research, *Journal of Conflict Resolution.* **21.** 459–474.

Correspondence and offprint requests to: Satinder P. Gill, Dialogue Understanding Group, Communication Science Laboratories, NTT, Science of core Technology, 3–1 Morinsato-Wakamiya, Atsugi-shi, Kanagawa, 243–998, Japan. Tel: 0081 462 403653; Fax: 0081 462 404 707; Email: satinder@rudolph.brl.ntt.co.jp