CATEGORIZATION OF TEXT CHAT COMMUNICATION BETWEEN LEARNERS AND NATIVE SPEAKERS OF JAPANESE[1]

Etsuko Toyoda
The University of Melbourne, Australia
Richard Harrison
The University of Nagoya, Japan

ABSTRACT

A number of CALL studies suggest the potential benefits of network-based communication for L2 acquisition, focusing on its nature for inducing negotiation of meaning. This study examined negotiation of meaning that took place between students and native speakers of Japanese over a series of chat conversations and attempted to categorize the difficulties encountered. The data showed that the difficulties in understanding each other did indeed trigger negotiation of meaning between students even when no specific communication tasks were given. Using discourse analysis methods, the negotiations were sorted into nine categories according to the causes of the difficulties: recognition of new word, misuse of word, pronunciation error, grammatical error, inappropriate segmentation, abbreviated sentence, sudden topic change, slow response, and inter-cultural communication gap. Through the examination of these categories of negotiation, it was found that there were some language aspects that are crucial for communication but that had been neglected in teaching, and that students would not have noticed if they had not had the opportunity to chat with native speakers. In light of these findings, the authors make pedagogical recommendations on some classroom tasks for improving chat conversations.

INTRODUCTION

As a result of technological innovations, new types of communication, namely network-based communication, have emerged. These new technologies, e-mail and chat in particular, are being used increasingly in second/foreign language (L2) learning environments. Many researchers regard this type of communication as a promising tool for language learning, as it allows learners to interact with native speakers from the country where their target language is spoken. Previous research suggests that it increases learners' opportunities to use the target language (Barson, Frommer, & Schwartz, 1993), induces a series of negotiations of meaning (Blake, 2000), and improves the quality of written and spoken language (Sotillo, 2000).

SLA Theories

Second language acquisition (SLA) theories advocate that oral interaction that requires negotiation of meaning is necessary for enhancing learners' interlanguage (Ellis, 1985; Long, 1991; Pica, 1994; Swain, 1993, 1995). Negotiation of meaning is defined as "modification and restructuring of interaction that occurs when learners and their interlocutors anticipate, perceive, or experience difficulties in message comprehensibility" (Pica, 1994, p. 495). Modification and restructuring include repetitions, confirmations, reformulations, comprehension checks, recasts, confirmation checks, and clarification requests (Long, 1996).

The Interaction Hypothesis (Gass, 1997; Long, 1996, 1991) claims that resolving miscommunication (negotiation of meaning) enhances L2 learning, as it provides more opportunities for comprehensible input and modified output. The Output Hypothesis (Swain, 1993, 1995) explains that producing output is one way of testing a hypothesis about comprehensibility or linguistic well-formedness (Swain, 1995, p. 126), and that learners' hypothesis testing often invokes interaction between the learners and their interlocutor(s). Native speaker difficulties in following learners' interlanguage may trigger feedback, which in return may induce changes in the learners' output. Negotiation of meaning also occurs on occasions where the native speakers' input is above the learners' threshold level of understanding. Learners may notice a gap between their interlanguage and the language that native speakers produce, and may request clarification. The output hypothesis thus claims that the output induces negotiation of meaning and the negotiation leads to the enhancement of the learners' interlanguage.

CALL Studies on Negotiation of Meaning

Many CALL researchers postulate that network-based communication can facilitate second language acquisition in a similar fashion to face-to-face negotiations in classroom settings, and have found abundant evidence of comprehensible input and modified output resulting from negotiation of meaning (Blake, 2000; Kitade, 2000; Pellettieri, 2000; Warschauer, 1998). They claim that this type of communication may be beneficial for enhancing learners' interlanguage even more than oral conversations, as the learners can view their language as they produce it and they are more likely to 'monitor' and edit their messages (Kitade, 2000; Ortega, 1997; Pellettieri, 2000; Warshauer, 1998). One of the distinctive features of network-based communication, a lack of non-verbal cues, may facilitate negotiation of meaning as communication has to rely merely on verbal correspondence(Kitade, 2000). Another advantage is that logs of the communications can be saved, which can then be reviewed later on by the learners and their teachers. These logs can be valuable resources for the enhancement of the learners' interlanguage (Blake, 2000).

In the networked environment, learners can engage in asynchronous communication or synchronous communication. E-mail is one type of asynchronous communication where people can take time to read and write messages. The delayed nature of this type of communication gives learners more opportunities to produce syntactically complex language (Sotillo, 2000). On the other hand, synchronous communication, such as chat, requires instantaneous responses as in face-to-face communication. By comparing synchronous and asynchronous modes, Sotillo claims that the quality and types of discourse functions present in synchronous discussions were similar to the types of interactional modifications found in face-to-face conversations. As there is no physical environment or non-verbal signals to share (Kitade, 2000), chat may be referred as a 'text-mediated telephone conversation."

Research Questions

Although a number of CALL studies suggest the potential benefits of network-based communication for L2 acquisition focusing on its nature for inducing negotiation of meaning, few have investigated the triggers for negotiation in a free conversation setting. Even fewer have mentioned how the logs can be utilized for the enhancement of learners' interlanguage. In order to beneficially use network-based communication for L2 learning, more research based on discourse analysis is called for. The purpose of this study is to examine the Japanese chat data in order to uncover specific types of communication difficulties that trigger negotiation of meaning, and based on findings from these analyses, to make recommendations on how the quality of communication can be improved.

STUDY

Participants

The participants were 5 undergraduate students enrolled in an advanced level Japanese course, Japanese Multimedia, offered in Semester 2, 2000 at the University of Melbourne. One of the main aims of this course was to enhance students' autonomous learning skills in Japanese through research and presentation using multimedia tools. The participant students undertook a semester-long project, created a Web site, and electronically interacted with their partners using the chat function of a 3-dimensional language learning environment called JEWELS.[2] The students were all advanced learners of Japanese who had studied the language for at least 4 years and had in-country experiences prior to participation in the project. In face-to-face communication with the teacher, they had no trouble getting their meaning across despite making some subtle errors. Their partners were all native speakers of Japanese (students and teachers) who resided in Japan or the USA at the time of chatting.

JEWELS

We created an online virtual university campus, named JEWELS (Japanese-language Education Worldwide Electronic Learning Space) using software from an American company called Activeworlds (www.activeworlds.com). This software allows one to create 3-D models of buildings, and has a library of ready-made objects such as chairs, tables, and computers for creating rooms, and so forth. The users log in with a username and password, and are rendered as 3-D avatars which appear in the scene. They can even fly if they want to. When they log in, the users see the 3-D environment in the left hand window of the browser (see Figure 1) and on the right side see a window for displaying WWW pages based on Internet Explorer. Communication between the users in the environment is through a chat window below the 3-D window. Users can communicate to all the other users in the environment, or to individuals using a whisper chat window. All the chat dialogues appear in the chat log window immediately below the 3-D window.
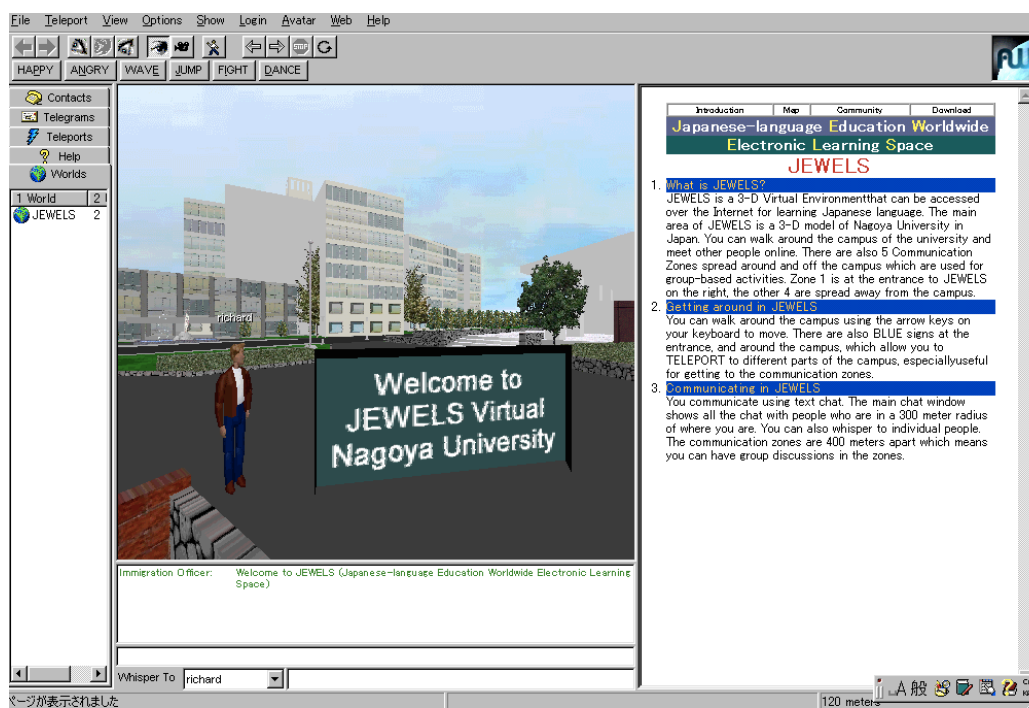

Figure 1.

In our case we used Japanese fonts for the chatting. We configured the program to handle Japanese fonts using a utility program called Emigrant32, which allowed Japanese fonts to be displayed in the chat windows and in the WWW browser window. However, this was dependent on the user having a Japanese Windows operating system running on their computer. We installed Japanese versions of Windows 98 on the Melbourne machines so that the software would run correctly. Input in Japanese is carried out through standard QWERTY keyboards with the users typing in Romanized Japanese, which the software automatically converts into *Hiragana* or *Katakana* (phonetic-based scripts) as appropriate. Pressing the space bar brings up a window from which the users can choose the correct *Kanji* (non-phonetic-based script). This is the standard form of Japanese input used on every Japanese capable computer.

Use of Avatars

The built-in avatars in Activeworlds could be used in two ways. Firstly, the appearance of the avatar could be chosen so that it could be female or male or even a bird. Kim (2000) notes that avatars are one way in which participants are able to create their own persona, and that an important part of building an online community is to use personal profiles to distinguish individuals within the online community (p.101). Secondly, the avatars could move around in the environment using the arrow keys, taking different viewpoints of the environment. Each avatar had associated programmable actions such as waving, dancing, fighting, and so forth.

Our students and their Japanese partners used the first features of changing the appearance of the avatars to those that they liked; however, they made little use of the other movement features, probably because we did not give them tasks that required such movements. Also the students seemed not to have any spare time to attempt to use these features while they were chatting, as they were experienced at neither the electronic chatting, nor the manipulation of avatars. The ideal situation would have been to have an avatar construction kit, whereby the avatars could be programmed to look more appropriate to the context, with programmable actions associated with Japanese cultural gestures such as bowing, and so forth. This would also involve creating tasks in which the avatars would be required to move and act. Another interesting project would be to investigate how avatars can be used to express cultural non-linguistic features such as bowing and other culturally laden gestures. However, this was beyond the scope of our project. In the current project, we were interested in getting the students to use the chat facilities rather than to use the avatars.

Chat Data

In chat, due to the fact that multiple participants can type messages simultaneously, some utterances addressing unrelated topics may often be interwoven into any discussion thread. Such complexity may lead to breakdowns in communication for novice users (Werry, 1996). To minimize the confusions and misinterpretations resulting from the multiple threads, we allocated our students to different communication zones in the JEWELS environment, and we limited the number of participants to a maximum of three in each zone. The students had chat exchanges with their partners for 1 hour per session over 10 sessions in the semester. Data used for this study were the students' chat logs over the course of seven sessions, excluding the sessions when a) the participants moved around the learning environment to familiarize themselves with it, b) we had a mock job interview, and c) the participants thanked each other (the last session). In all seven sessions, the participants were instructed to discuss with their partners ideas and thoughts regarding the Web page creation project.

Data Analysis

The chat data were analyzed using discourse analysis methods. Following Kitade's study (2000), the data were first segmented into sequential units of conversation. A sequence of conversations was separated from others based not only on topic changes but also direction shifts within the same topic. After excluding the units where no communication breakdowns were observed, the remaining 45 units were

placed into categories according to their features. Two experienced Japanese language teachers carried out the data analysis, and where the two could not agree, a third person's opinion was sought for the judgment. Communication breakdowns sometimes occurred due to the nature of conversations between native and non-native speakers, and at other times due to problems caused by the CMC (computer mediated communication) tools. However, this study does not distinguish between the two, and sees these difficulties as a natural form of chat communication between native and non-native speakers.

Categories

The conversations observed in the chat tended to follow the typical schema noted by Varonis and Gass (1985): trigger, indicator, response, and reaction. Briefly stated, a *trigger* is the stimulus for the negotiation that ensues, and an *indicator* alerts that there is a communication problem. Following an indicator, there are generally a *response* from the speaker who caused the problem and a *reaction* to the response. To categorize a series of negotiation of meaning, we focused on the trigger of the negotiation. We have observed in the collected data that the triggers could be grouped into three levels: word, sentence and discourse. Each level also could be sorted broadly into three different categories, resulting in nine categories all together.

Word level	Sentence level	Discourse level
W-1 Recognition of new word	S-1 Grammatical error	D-1 Sudden topic change
W-2 Misuse / misunderstanding of word	S-2 Inappropriate segmentation	D-2 Slow response
W-3 Pronunciation / typing error	S-3 Abbreviated sentence	D-3 Intercultural communication gap

The distribution of the negotiation of meaning in each category was as follows. The numbers in the parentheses show the negotiations caused by native speaker triggers.

Table 1 Distribution of Negotiation of Meaning

W1	W2	W3	S1	S2	S3	D1	D2	D3
12(8)	5	7	3	2	6(5)	4(1)	4	2(2)

The next section will look into each of the nine categories.

EXAMPLES AND INTERPRETATIONS

W-1 Recognition of a New Word

Introduction of new words took place on both the students' and native speakers' sides although it happened far more frequently on the latter. Upon introduction of a new word from the native speakers, in many cases (8 times out of 12), the student in the dialogue noticed the new word and presented a clarification question to ask for the meaning of the word, as shown in this example (NS is a native speaker and NNS is a non-native speaker, i.e., a student).

Table 2.

1	NS	Senmon wa?	What are you majoring in?
2	NNS	Igaku desu!	Medicine!
3	NS	Dono **bun-ya** desu ka?	Which **area**?
4	NNS	**Bun-ya** tte doo iu koto?	What does *area* mean?
5	NS	Nai-ka toka shooni-ka toka.	Things like internal medicine and pediatrics.
6	NNS	Mada **bun-ya** ga nai desu.	I don't have an **area** yet.

By giving some examples or explaining the definition of the word in simpler language, the native speakers tried to restore the communication. Other frequently used clarification questions were: *X.tte dou iu koto?* (What does X .mean?), X.tte? (abbreviated form of *What does X mean?*), *X wa nan desuka?* (What is X?), *Nan desu ka sore?* (What is that?), or just repeating the unknown word with a question mark.

New words were sometimes introduced with confirmation questions by the native speakers. The frequently used confirmation questions were: *Wakaru?* or *Wakari masu ka?* (Do you understand?) and *X.tte kotoba shitte imasu ka?* (Do you know the word, X?). In the following example, the learner encountered two new words that she could neither read nor get the meanings. In English, pronouncing the word is usually possible even if the meaning of the word cannot be drawn from the spelling. In contrast, Japanese *kanji*-written words convey far less information. To show that the words were introduced to the student without any clue to meaning and pronunciation, in the following excerpt, the words were left in *Kanji*. *Kanji* is one type of Japanese script, which is derived from Chinese characters, and, unlike the other types of Japanese scripts, is not phonetic-based (Tamaoka, 1991). Although *Kanji* is often described as ideographic or logographic, inferring the meaning of a word from a chain of unfamiliar *Kanji* characters is not easy. Because these words are specifically used in a topic related to religions, the native speaker may have sensed that they were difficult for the student. He asked the student *Wakaru?* (Do you understand?), and then gave the definitions of the words. When the student later clarified the pronunciation of one of the words by asking how to read the characters, the native speaker gave the pronunciations of both words.

Table 3.

1	NS	Kono shuumatsu wa gifu no 命日 no omairi to, otto no jikka no 地鎮祭 deshita. Wakaru?	This weekend I visited the grave of my father-in-law for 命日, and attended 地鎮祭. Do you understand?
2	NNS	Wakaranai.... .	**I don't understand it....**
3	NS	命日 wa nakunatta hi no koto. Oboo san ga kite okyoo o agete kuremasu.	命日 means the anniversary of the day someone passed away. A priest comes and recites a sutra for us.
4	NNS	Sore wa, meejitsu to iu n desu ka.	Is it called *meejitsu*?
5	NS	地鎮祭 tte iu no wa ie o atarashiku tateru toki ni, tate hajimeru mae ni oharai (nihon-shiki no oinori?) o shite morau koto desu.	地鎮祭 is to receive Shinto purification (Japanese style praying?) before they begin to build a new house.
6	NS	命日 wa meenichi to yomimasu.	命日 is pronounced as *meenichi*
7	NS	地鎮祭 wa jichin-sai desu.	地鎮祭 is pronounced as *jichin-sai*.
8	NNS	Naruhodo…	I see…

Although less often (4 out of 12 cases), new words were sometimes introduced by the students, as in the following example.

Table 4.

1	NNS	Sate, meruborun ni ryuugaku shite iru nihon-jin to nihon-go o benkyoo shite iru aasutoraria no gakusei to ni nihon ni kankee mono ka ebento o minna ni tsutaeru saabisu nandesu.	By the way it is a service to let all Japanese overseas students studying in Melbourne and all Australian students learning Japanese know about things related to Japan or special *e*vents.
2	NS	Hoomusutee toka?	**About home stay or something?**
3	NNS	Matsuri toka **bbq** nado.	**Things like festivals and** BBQ**s and so on.**
4	NS	*bbq* wa nani desu ka.	**What is a *BBQ*?**
5	NNS	Hai, hoomusutee nado	**Yes, about things like home stay and so on.**
6	NS	Nee, **bbq** tte nani?	**Hey, what is a *BBQ*?**
7	NNS	**Babekyuu**.	**Barbecue.**
8	NS	Aa, sokka.	**Oh, I see.**

The correct Japanese for barbecue is *baabekyuu.* Even though the student wrote the word incorrectly, the native speaker understood the word and posted the acknowledgement as a reaction to the student's response.

An interesting dialogue was recorded when the native speaker misinterpreted the word that the student introduced.

Table 5.

1	NNS	Katakana no "**hotkey**" arimasu ka?	Is there a "**hotkey**" for *Katakana*?
2	NS	*Hokkee* desu.	It's *hokkee* (*hockey*) (in *Katakana*).
3	NNS	*Hokke*- tte nan nan desu ka?	**What in the world is** *hokke*-**?**
4	NS	Machigaemashita.	**I misunderstood.**
5	NNS	Yappari nai ka.... Ma, ee wa.	Just as I thought, there isn't one, is there? .... Oh well, that's all right.

Katakana is another type of script used for Japanese writing, and is usually used for loan words, that is, words originated in Western languages. When the student asked about a hotkey for Katakana, the native speaker thought that this student wanted to know how to write *hockey* in Katakana. This became a trigger for the next question, What is *hokkee*? By then the native speaker had realized that he had misunderstood the student's utterance, and apologized for it**,** though whether the native speaker understood the student's utterance is not clear from the chat log.

W-2 Misuse / Misunderstanding of Word

The first example is for the misuse of a word. In the following conversation, the student and her partner were talking about popular TV programs in Japan. Trying to say *also common to old people,* the student used the word *icchi suru* (agree, match with), which was not totally wrong, but was not appropriate in this context. The native speaker rephrased the word in two different ways, once as *"Dare ni demo atehamaru"* (That can apply to anyone), and another time as *"Kyoutu shiteiru"* (That is in common). At the end, the student himself rephrased it as *"Things that even older people know."*

Table 6.

1	NNS	Demo, motto toshiyori hito demo **itchi** no koto imasen ka.	But aren't there things that even more elderly people **agree on**?
2	NS	**Dare ni demo atehamaru** yoo na joohoo to iu koto desu ka?	**Do you mean the kind of information that would** apply to anyone**?**
3	NNS	Soo desu ne. Minna doraemon o shitte imasu ka.	**That's right. Do you all know "Doraemon"?**
4	NS	Umareta nendai wa motto nenree no takai hito demo shitte iru koto wa **kyootsuu shite imasu** yo ne.	**Even people who are of higher age groups by birth** would know the same things we know**, don't you think?**
5	NNS	Uun, hoka ni nani ka ree ga arimasu ka.	**No, are there any other examples?**
6	NS	Ree? Nan no ree desu ka?	**Examples? Examples of what?**
7	NNS	**Nenree no takai hito demo shitte iru koto.**	**Things that even people of higher age would know**.

The next example is when a polysemy caused a communication difficulty. The native speaker used the word *katamaru* for the meaning of *gather,* while the student interpreted this word as *harden,* which is the primary meaning of this word.

Table 7.

1	NS	Saikin no watashi no kansatsu dakedo, hoka no kuni no hito no yoo ni, omotedatte **katamaru** no wa sukunai kamo shirenai kedo, ura de to iu ka, mienai tokoro de **katamatte iru** ki ga suru kedo doo kana?	This is my recent observation, but, I have a feeling that they do not conspicuously **gather** in groups but, behind, or in places where they can not be seen, they seem to **gather** in groups. What do you think?
2	NNS	Watashi wa ajia-jin to shite soo iu hito o yoku kansatsu shita koto arimasu yo.	**As an Asian, I have often observed people like that.**
3	NS	Soo iu hito to wa	**What do you mean, people like that?**
4	NNS	**Damatte kurushimu hito** ga ooi desu ne.	**There are many** people who keep silent and suffer**, aren't there?**
5	NS	**Damatte kurushimu**?	**To** keep silent and suffer**?**
6	NNS	To iu ka, **heesa-teki** de jibun no mondai o iwanai.	**In other words, they** shut others out **and don't say anything about their own problems.**
7	NS	Aa, wakari mashita.	**Oh, now I see.**

After a number of exchanges, it seems that the student and native speaker came to realize that they were discussing two different topics. Expansion and elaboration on the word may have helped them to realize the definitions of the word. The student confirmed her understanding with the teacher after this chat exchange, although it is not clear from the chat log if she realized her misinterpretation.

While misuse or misunderstanding of a word is not unusual, this example shows that the misunderstanding is not always easily noticed, and it sometimes takes a while before it is realized.

W-3 Pronunciation/Typing Error

One frequent cause of miscommunication was pronunciation/typing error, and many of the words that were mispronounced or misspelled were *Katakana* words. Although making a distinction between a pronunciation error and a typing error is not an easy task in the case of chat conversations, the fact that errors occur much more frequently on *Katakana* words made us think that there were likely to be some contributions from pronunciation errors. As mentioned above, *Katakana* words are loan words originated in Western languages. The students tended to make mistakes all the more because the *Katakana* words are similar to their original English words. In other words, they are inclined to pronounce the words in a similar way to English. For example, many Japanese learners write *intaneto* for Internet when it should be written as *intaanetto*.

In the following conversation, one of the *Katakana* words that this student misspelled triggered miscommunication.

Table 8.

1	NNS	**Yoroo** 2000 o mimashita ka.	Did you see ***Euroo*** 2000?
2	NS	Nan desu ka? Sore.	What is that?
3	NNS	**Yorooppa** no sakkaa chaipionshipu.	The ***Euroopean*** soccer championship.
4	NNS	E, **yorooppa** ni sakan deshita.	Oh, it existed widespread in **Eu*roo*pe**.
5	NS	**Yuuro** 2000 kana? Nihon-go de wa? (Demo jitsu wa shirimasen)	It's perhaps called **Euro** 2000. In Japanese. But I actually don't know.

The native speaker was not able to guess what "Yoroo 2000" was, but when the student gave a context of European soccer championship, she was able to give a possible word.

Other misspelled *Katakana* words that caused communication difficulties were *bajjin* for *baajin* (*Virgin* -- the name of an airline company), *fashion* for *fasshon* (fashion), *ronvekeshon* for *rongubakeeshon* (Long Vacation -- the name of a TV program), and *fuutoboor* for *futtobooru* (football).

The next example is from a *Kanji* word. When typing words in *Kanji* using a Japanese word processor, the word is typed in using Roman letter keys as it is pronounced, which appears in *Hiragana* (phonetic-based script) on the screen, and then turns into appropriate *Kanji* when the space bar is pressed. Often the same pronunciation has several forms in *Kanji*. If the *Kanji* given by the installed dictionary is not an appropriate one, other options are available on a list to replace the one that had appeared in the first place. In the following example, as the student typed in *shuushin* instead of *shusshin* and converted it to *Kanji,* the two-*Kanji* word that means *sleep* appeared. The native speaker did not understand why the student abruptly began to talk about sleeping which had no connection with the previous conversation. The student then chose another *Kanji* and added *Taiwan,* from which the native speaker was able to give feedback.

Table 9.

1	NNS	**Shuushin** (in *Kanji*)	**Going to sleep (Shuushin)**
2	NS	**Shuushin?** (in *Kanji*)	**Going to sleep (Shuushin)?**
3	NNS	**Shuushin** (in another *Kanji*) wa taiwan.	Life-time (shuushin) **is Taiwan.**
4	NS	**Shusshin** de wa?	**Don't you mean** *Shusshin* **(where you come from)?**
5	NNS	Soo.	**That's right.**
6	NS	(NNS) san no **shusshin** wa taiwan desu ka.	**Is Taiwan** where you come from**?**

In a face-to face conversation, mixing up a long vowel with a short vowel does not necessarily cause any miscommunication, as in most cases the meaning gets across with the help of the context. However, since chat communication relies more on *Kanji* as it appears on the screen and it provokes native speakers to activate their lexical properties of the *kanji,* it may therefore cause communication difficulties.

S-1 Grammatical Errors

We observed very few communication difficulties due to grammatical errors. While grammatical errors per se were recorded numerous times, there were only three cases where the native speakers could not follow the students' intentions. One of the examples is shown in Table 10.

Table 10.

1	NS	Nihon no dorama no kanjoo ni, kyookan ga motemasu ka?	**Can you sympathize with the emotions in Japanese dramas?**
2	NNS	Kakko ii desu ne. Kyookan wa, taiwan-jin no hoo **ni** chikai kedo.	**They are cool. Even though sympathy** is more like **a Taiwanese.**
3	NS	To iu no wa, amari kyookan wa dekinai, tte iu koto?	**Are you saying that you can't sympathize with them much?**
4	NNS	Oosutoraria no tomodachi **de mo**, minagara waraimasu.	Even **my friends in Australia laugh while they watch.**
5	NS	Soo kaa. "Owarai" to shite, miteru no kaa....	Oh, is that right? Are they watching them as "comedies"….?

By synthesizing line 2 and 4, it appears that the student meant to say that even his Australian friends (understand and) laugh while watching the Japanese drama although Taiwanese appreciate Japanese drama in a more similar way to Japanese. The error was only one particle; because the student said *Taiwanjin no hou NI chikai* instead of *Taiwan jin no hou GA chikai,* the meaning changed completely. Particles are post-positional markers to show case functions such as nominative, possessive, and objective. The particles look as if they are only supplementary in a sentence. However, they can shift the meaning of a sentence 180 degrees. Whether or not the native speaker realized this is not clear from the chat log. Nevertheless, miscommunication caused by grammatical errors was not one of the main causes for communication difficulties in conversation between these advanced level students and native speakers in this study.

S-2 Inappropriate Segmentation

Inappropriate segmentation was even less common a cause of miscommunication than grammatical errors.

Table 11.

1	NNS	Sore wa, nani ka to ii masu to melbourne ni iru nihon-go no gakusei	**Well, to tell you what it is, students studying Japanese in Melbourne.**
2	NNS	**to** melbourne ni iru nihon-jin no gakusei	**and** Japanese students staying in Melbourne
3	NS	Nihon-go no gakusei no donna koto ni tsuite kaku no desu ka.	**What kind of things about the Japanese language students are you going to write about?**
4	NNS	**no tame no** site.	A Web site **for** (them).
5	NS	Naruhodo. **Tame ni naru** joohoo o noseru to iu koto desu ne.	**I see. You mean you are going to put information that would be** useful**, do you?**

The student meant to say that *"(it will be) a site for students learning Japanese and Japanese students in Melbourne,* but she segmented or broke the sentence into three utterances: a) students studying Japanese in Melbourne, b) Japanese students staying in Melbourne, and 3) a Web site for (them). Because the student stopped the previous utterance with the noun *(gakusei)* without the particle *(no),* and there came in another utterance made by a native speaker, *no tame no site* (a site for) looked as if it were stand-alone. The native speaker interpreted this word as *useful,* which is another meaning of the word. Despite the misinterpretation, the direction of the conversation did not skew so much in this case, as they were still in the same topic framework.

In Japanese, particles are bound-morphemes and they are placed after nouns (except two types of particles; one that shows quotations and the other that shows moods). When native speakers write in Japanese on the computer, in most cases they type in a particle together with the word that comes before the particle. In the chat logs kept during the seven sessions, there were no cases where native speakers made an utterance starting with a particle (with exceptions of the particle for quotations). On the other hand, some inappropriate segmentation (ending a line without a particle and starting the next line with the particle) was observed among the students during the first few sessions although they rarely resulted in miscommunication. They may have misanalyzed a particle as a preposition for the following verb rather than a postposition for the preceding noun. However, there is not enough evidence to determine whether or not this is something that reflects interlanguage representations.

S-3 Abbreviated Sentence

In spoken conversations among native speakers, the use of abbreviated sentences is frequent. In Japanese, stopping a sentence mid-way is acceptable as long as the context supports the meaning of the sentence. Some abbreviated sentences produced by native speakers in the chat seemed to have troubled the students as shown in the following conversations.

Table 12.

1	NS	Nani ni tsuite, tsukutte iru no desu ka. **Teema toka.**	**What are you making a homepage on?** Topic or something?
2	NNS	Teema ka.... gakusei no joohoo saabisu e	**Topic.... To the information service of the students.**
3	NS	**Arubaito toka**?	Part time jobs or something**?**
4	NNS	Ima nai kedo, mae ni ten-in datta.	**I don't have one but I was a shop assistant before.**
5	NS	A, soo na n desu ka.	**Oh, were you?**
6	NS	Ano, hoomupeeji no hanashi ni modori mashoo ka.	Um... shall we go back to the topic of the homepage?

The second sentence in line 1 and line 3 are abbreviated sentences. In face-to face communication with native speakers, one may encounter a number of this type of utterance. The most frequently used form as can be seen in the above example, is a noun with *toka*, which means *such as X* but can mean *What about X?, What do you think of X?,* or D*o you mean X?* all depending on the context. In the given example, when the native speaker said *Teema* (theme) *toka*, the students understood it, and tried to answer to it in line 2. However, when the native speaker said *Arubaito* (part-time job) *toka?*, meaning *Are you thinking of including part-time job in your theme?,* the student (NNS) interpreted this utterance superficially and started talking about his own part-time job experiences. The native speaker's response *A soonandesuka* (Oh, were you?) made the student think that his interpretation was correct.

Confusions were amplified when another topic intertwined in an existing topic of conversation as can be seen in the following example.

Table 13.

1	NS1	(NNS) san ga tsukutte iru, **"HP" ni tsuite, hanashi masu ka?**	Shall we talk about the home page **you are making, (NNS)?**
2	NNS	**Hai, soo shimashoo**..	Yes, let's do that.
3	NS2	Nihon de wa, **furiitaa** to iu shigoto o shite iru wakai hito ga ooku imasu. **Oosutoraria de wa?**	**In Japan there are many young people who are doing a work called** free worker**.** How about in Australia?
4	NS1	**Shigoto ni tsuite deshita kke**?	Was it about jobs?
5	NNS	So	That's right
6	NS1	Gutai-teki ni wa?	**(What is it)** exactly about**?**
7	NNS	Shosho, machi kudasai.	**Please wait a moment.**
8	NS2	Dooka shimashita ka?	**Is there anything wrong?**
9	NNS	**Donna topikku ni shiyo ka.**	What kind of topic shall we talk about?

In lines 1 and 2, both sides have agreed on talking about the Web page that the NNS was creating. And then in line 3, the NS 2 abruptly brought in a new topic about *freeter* (a person who is not bound to one company and who freely takes up different jobs), followed by an abbreviated sentence asking about the situation in Australia. As the sentence merely means *In Australia?* and there is one unrelated sentence in between the utterances, the student seemed to have been confused. Other abbreviated sentences in lines 4 and 6 made the situation worse, which resulted in the student asking once more about the topic of the conversation. The distinctive features of chatting, such as no turn-taking competition and no non-verbal signs, negatively affected this sequence of communication.

D-1 Sudden Topic Change

In the above situations, the students failed to incorporate contextual information in order to understand the utterances. In the example below, the native speaker's use of the context had adversely led to a misunderstanding. While the student abruptly changed the topic using an abbreviated sentence, the native speaker was still trying to interpret the utterance in relation to the context.

Table 14.

1	NS	Uun, sugu ni wa wakaranai kedo, "YAHOO" toka de shiraberareru n ja nai kana.	**Hmm, I can't thnk of any straight away but I suppose you can find out through places like "Yahoo".**
2	NS	Kiiwaado de, *nihon* toka *fasshon* toka iretara, ippai dete kuru to omoo yo.	**If you enter keywords like *Japan* or *fashion*, I think a lot will come out.**
3	NNS	**Ja kyoomi wa.**	Then what about interests?
4	NS	**Soo**, kyoomi aru mono ni tsuite, kiiwaado ni iretara, ii desu yo.	**That's right. All you have to do is to enter what you are interested in into the "keyword".**
5	NS	Kyoomi wa doo iu koto ni tsuite aru no?	**What kind of things are you interested in?**
6	NNS	**Chigaou, anata no kyoomi yo.**	It's not right. I mean, your interests.
7	NS	A, watashi no?	**Oh, mine?**

One of the clear differences between the students and the native speakers was, with the exception of this case, that the students often tried to shift the topic without a conjunction whereas the native speakers often used the conjunction *tokorode* (by the way) for a topic change.

D-2 Slow Response

In the following conversation, when NS1 started to talk about his experience in the USA, NS2 added another episode from her experience in Canada. The student (NNS), in response to these, asked NS1 for the reason. However, the response (in this case, the question) was so slow that it induced the confusion.

Table 15.

1	NS1	Saikin ichiban omoshirokatta no wa, paatii ni itta n dakedo, dare ga sensee de dare ga gakusee ka o "guess" suru no ga muzukashikatta desu.	**What was most interesting recently was that, I went to a party and it was difficult to "guess" who were teachers and who were students.**
2	NS2	Kanada de wa, eego kenshuu o uketari, nihon-go kyooiku no genba o kengaku shitari shita no desu ga,	**In Canada, I did things like learning English and observing places where Japanese was actually taught, but,**
3	NNS	**Dooshite desu ka.**	Why was (it)?
4	NS1	**Kono shitsumon wa (NS2) san ni? Soretomo watashi ni?**	Is this question for me? Or for (NS2)?
5	NNS	Sensee wa dare ka, gakusee wa dare ka, guess dekinai no wa.	**Not being able to *guess* who the teachers were and who the students were.**

In face-to-face conversation, this sort of communication disorder can be avoided by, for example, giving eye contact to the addressee. In text-based communication, it seems to be inevitable to have communication difficulties of this kind**.** Managing multiparty conversations might have been much more demanding compared to dyads involving only two interlocutors. However, the communication breakdown could have been avoided if the student's response was quicker and was made in relation to the previous utterance. In conversations among native speakers, a number of demonstratives (e.g., this, that, these, and those) are used referring to the previous utterances in order to avoid confusion, and when they ask questions about something that has been said several lines up where links were not so clear, they may make the subject of the sentence clear by repeating some words used before. This particular communication breakdown caused by the student's slow response may have been avoided if the student used some linkage words.

D-3 Intercultural Communication Gap

The last category is for communication difficulties due to cultural differences. The following is a conversation over *jikoshuchou* (self-assertive) between the student and native speaker. *Jikoshuchou*, or *expressing one's opinion,* has been an important aspect of character-building in Western culture. On the contrary, conforming oneself to the situation has been a virtue in Japan. In a reply to the student's question if Japanese are lacking self-assertion, the native speaker said that Japanese tend to assert themselves after acknowledging the other party's opinion. The student is using the word *jikoshuchou* as "asserting oneself with no relation to others" whereas the native speaker is using the same word as "expressing one's opinion suitable to the situation."

Table 16.

1	NNS	Eeto, nihon-jin tte **jiko shuchoo** busoku da to omoimasu ka.	**Well, do you think Japanese people lack** self-assertion**?**
2	NS	Aite no iken o kiite kara kangae yoo to suru tokoro wa arimasu yo ne.	**We do tend to try and think after listening to the opinion of the other, don't we?**
3	NS	Aite no iken to jibun no iken o tatakawase yoo to suru no dewa naku, onaji bubun o mitsukete ukeirete ikoo to suru no dewa nai desu ka.	**Perhaps it is that, rather than trying to argue against the other's opinion with our own, we try to find common grounds and accept the other's views?**
4	NNS	To iu ka, boku no iken dewa nihon-jin wa narubeku meewaku o kakenai yoo ni soo suru shuukan ga aru to wakatte imasu ga.	**Or, in my opinion, I already understand that the Japanese customarily do that so they don't cause trouble or inconvenience to others.**
5	NS	**Aite no iken mo mitomete, jibun no iken mo wakatte morau doryoku o suru.**	Accepting the other's opinion and also making an effort to make the other understand our opinions.
6	NNS	**Desu kara, sore wa *gyougi* ni chikai desu ne.**	So, that is more like a *manner/behaviour,* isn't it?
7	NS	*Kyougi,* desu ne.	**You mean *conferring*, don't you?.**

After exchanging each other's view, the student concluded that expressing one's opinion after taking in the other's opinion is a kind of *gyougi* (manner). Conceivably, the student tried to understand that not imposing oneself would be mannerly in Japan. Hearing this word, the native speaker corrected the word to *kyougi* (negotiation), in thinking that the student misspelled the word, as the whole notion of *jikoshuchou* for him is *kyougi*(negotiation) and not *gyougi* (a manner). It appeared to the student that expressing one's opinions after listening to the other's opinions is a mannerly behavior, while from the native speaker's point of view it is negotiation.

RECOMMENDATIONS

Chatting in a L2 may not always be an easy task for learners, as it requires them to read messages and respond to them quickly. There are no clues such as facial expressions and body language to help them understand the incoming messages, which may make their interactions with their interlocutors difficult as they have to rely solely on written texts. Moreover, complexly intertwined threads of dialogues may place more burdens on the learners to comprehend the messages and subsequently impede their appropriate output. Nevertheless, our data showed that the difficulties in understanding each other have indeed triggered negotiation of meaning.

Another point to make is that the data revealed that there were several levels of communication difficulties; word, sentence, and discourse levels. We observed that as we moved away from word level and into discourse level, negotiation of meaning became more complex and less transparent. The findings from the study suggest that the higher the level of the negotiation, the less clear it becomes whether the negotiation is successful. Successfully negotiating the communication problems is essential in order to take advantage of comprehensible input and modified output. The review of the chat logs may facilitate the improvement of students' interlanguage.

In this section, we would like to look into how the quality of chat communication can be improved. Chat logs, especially those that learners themselves have produced, can be valuable linguistic material for helping students to reflect on their interlanguage. Learners will definitely pay attention to the language in

their logs because they are their own products (Swain, personal communication). The findings from the analysis of the chat data shed some light on what we can do in class using chat logs as learning materials. Given the limited data, these should be considered as example tasks for negotiation about form in our study context.

W-1 Recognition of New Word

Although a number of new words were introduced by the native speakers, the students sometimes failed to get the meaning of the words because they did not indicate to the native speakers clearly enough that they did not understand the word**.** Only when we went over the chat log with the students, did it become clear that there were times where the students experienced difficulty in understanding words and were not able to negotiate the meaning of the words. Having a good stock of expressions for clarification checks and confirmation checks seems to be critical in order to carry on a conversation. These communication strategies for asking the native speakers for clarification could be one kind of task using the chat logs, for example, looking for instances where the request for clarification was not clear, and discussing how they can be made clearer. Japanese language teaching has now shifted in approach to more communication-focused teaching. The findings from this study suggest that explicit teaching of communication strategies is also necessary**.** Going through the logs could be a valuable opportunity for learning some examples of the types of stock phrases the students might need.

W-2 Misuse / Misunderstanding of Word

There were some cases where the students misused or misunderstood words that had more than one meaning and words that shared a similar meaning with other words. These polysemies and homonyms can be perfect materials for discussions. Learners usually learn new target words in relation to their equivalents in their native language. However, dependence on the translation could cause miscommunication as meaning range in two languages often does not completely overlap. Japanese language teaching may have focused extensively on the expansion of new vocabulary, and may have neglected to teach the word usage in contexts. Learners can talk about the reasons for the misuses and misunderstandings and learn the core meaning of the words by collecting many example sentences that contain the words.

W-3 Pronunciation / Typing Error

Our data has shown that writing English words in *Katakana* is not easy, as knowledge of the correct English spelling may interfere with proper Japanese pronunciation. However, with some exceptions, there are general rules for conversion, and learners may be able to find out the rules or exceptions by reviewing *Katakana* words in their chat logs. The findings from our study suggest that reviewing *Katakana* is necessary in the later stages of learning. When converting the typed words into *Kanji,* learners need to be aware that the *Kanji* being chosen is relevant to the context of a conversation. In our study, the chat conversation did make the students realize that instant *kanji* processing skills should be improved. One task would be a dictation of a passage that contains many homophones, and discussion on the difference among the possible types of *Kanji* characters.

S-1 Grammatical Error

A particle can sometimes be crucial to convey the right meaning of a sentence. However, it is also true that particles are most commonly misused among learners of Japanese. In most cases, learners learn particles along with other grammatical features, and have rarely been taught their functions in comparison with others. Highlighting the particles that appeared in chat logs and analyzing the function of each particle in class may help students organize the acquired knowledge.

S-2 Inappropriate Segmentation

It was interesting to see some sentences starting with particles in the chat logs, as such a feature is rarely, if ever, observed in regular classes either in face-to-face communication or in written composition where utterances or sentences just flow. It tells us that learners may be treating a particle as a preposition for the following verb rather than a postposition for the preceding noun. Segmentation of a sentence into smaller units may be one task appropriate here.

S-3 Abbreviated Sentence

We have observed frequent use of abbreviated sentences by the native speakers. For students who have limited experience conversing with native speakers, comprehending abbreviated sentences using contextual information was not easy. Teaching abbreviated sentences has been neglected, although these sorts of sentences form an important part of natural conversations. Also, learners would not have noticed such sentences if they had not engaged in electronic chats with native speakers. Most of our students have had experiences of living in Japan and are familiar with Japanese native speech. Nevertheless, it is not easy to notice when and how abbreviated sentences are used while conversing in face-to-face situations. Learners may be able to find abbreviated sentences, if any, in their chat logs and discuss the expanded form of those sentences.

D-1 Sudden Topic Change

A sudden topic change without a conjunctive word was one of the typical causes for communication difficulty. Our suggestion is that learners go over their logs and discuss how their partners have changed a topic. It might be a good opportunity to review conjunctive words and their functions in a passage, and examine when conjunctive words are not used. As in the case of particles, conjunctive words are usually presented together with other language functions. The proper usage of such words needs to be taught at some stage. It could be possible to practice this through pair work, eliciting sentences from a picture and collaboratively combining the sentences using a conjunction.

D-2 Slow Response

Multiple topics of conversation intertwined together is a unique feature of chatting. When a response is slow, it can cause confusion. There is no doubt that coping with multiparty conversation with native speakers using an unfamiliar chat tool is extremely hard for non-native speakers. Learners should be aware that responding quickly in chat by using shorter sentences is essential. Learners may discuss strategies for avoiding this sort of confusion, and look for particular strategies for chat conversation. Some practice sessions for making shorter abbreviated sentences might be necessary. However, making an utterance shorter does sometimes cause communication difficulties. Based on our impressionistic observation of conversations between native speakers, we believe there exist many repetitions of phrases to link one's utterance to the previous ones, particularly in cases where "why" and "how" are sought. Learners may need to learn some strategies to respond quickly in the shortest possible abbreviated sentences that still have links to the previous utterances.

D-3 Intercultural Communication Gap

The concept of a word is not the same in a different cultural context. Miscommunication caused by a gap in concepts between two cultures is typical in an international communication setting, and is not specific to chat conversation. However, chat conversations certainly make the situation worse, as interlocutors cannot see each other's facial expression of confusion. It may be valuable to have discussions on the meaning range of a word in the target language and in the native tongue, and talk about the sense of value in each culture. In language classes, even when cultural differences are touched upon, they are usually discussed on a superficial level. Focusing on some key words that can be a cause of communication breakdowns would be a very good way of leading learners to notice cultural differences.

CONCLUSION

Abundant research suggests that negotiation of meaning, which has been claimed to facilitate L2 learning, frequently occurs in electronic communication. In this paper, we categorized negotiation of meaning that took place between learners and native speakers of Japanese over a series of chat conversations, and made suggestions for making use of chat logs.

A series of communication difficulties was observed in the chat logs. We found that the chat exchanges induced negotiation of meaning between interlocutors at various levels. Another thing that the chat logs taught us was that there were some language aspects that are crucial for communication, but that had been neglected in teaching, and that students would not have noticed if they had not had the opportunity to chat with native speakers.

NOTES

1. This study has been funded by the Faculty of Arts ITMM grant. An early draft of the paper was written by the first author and was submitted as a class assignment for the subject "Second Language Acquisition" offered in the Linguistics and Applied Linguistics Department at the University of Melbourne.
2. JEWELS has been developed by a team of researchers in Japan led by Mr. Richard Harrison.

ABOUT THE AUTHORS

Etsuko Toyoda is a senior tutor of Japanese at the Melbourne Institute of Asian Languages & Societies at the University of Melbourne. Her research interests include word recognition, learner autonomy, language learning and technology, and metalinguistic awareness.

Richard Harrison, born in the UK, has been teaching Japanese as a foreign language and developing/using computer-based software for Japanese for the past 10 years in the UK, Australia, and Japan. His current research interests are in virtual learning environments and constructivist approaches to learning language, particularly socially-based interaction using chat.

E-mail: e.toyoda@asian.unimelb.edu.au
               harrison@ecis.nagoya-u.ac.jp

REFERENCES

Barson, J., Frommer, J., & Schwartz, M. (1993). Foreign language learning using email in a task-oriented perspective: Interuniversity experiments in communication and collaboration. *Journal of Science and Technology, 2*(4), 565-584.

Blake, R. (2000). Computer mediated communication: A window on L2 Spanish interlanguage. *Language Learning & Technology, 4*(1), 120-136. Retrieved May 6, 2001, from http://llt.msu.edu/vol4num1/blake/.

Ellis, R. (1985). *Understanding second language acquisition.* Oxford, UK: Oxford University Press.

Gass, S. (1997). *Input, interaction, and the second language learner.* Mahwah, NJ: Lawrence Erlbaum Associates.

Kim, A. J. (2000). *Community building on the Web.* Berkeley, CA: Peachpit Press.

Kitade, K. (2000). L2 Learners' discourse and SLA theories in CMC: Collaborative interaction in Internet chat. *Computer Assisted Language Learning, 13*(2), 143-166.

Long, M. H. (1991). Focus on form: A design feature in language teaching methodology. In K. de Bot, R. Ginsberg, & C. Kramsch (Eds.), *Foreign language research in cross-cultural perspective* (pp. 39-52). Amsterdam: John Benjamins.

Long, M. H. (1996). The role of linguistic environment in second language acquisition. In W. C. Richie & T. K. Bhatia (Eds.), *Handbook of research on language acquisition, Vol. 2: Second language acquisition* (pp. 413-468). New York: Academic Press.

Ortega, L. (1997). Processes and outcomes in networked classroom interaction: Defining the research agenda for L2 computer-assisted classroom discussion. *Language Learning & Technology, 1*(1), 82-93. Retrieved May 6, 2001, from http://llt.msu.edu/vol1num1/ortega/.

Pellettieri, J. (2000). Negotiation in cyberspace: The role of chatting in the development of grammatical competence. In M. Warschauer & R. Kern (Eds.), *Network-based language teaching: Concepts and practice* (pp. 59-86). Cambridge, UK: Cambridge University Press.

Pica, T. (1994). Research on negotiation: What does it reveal about second-language learning conditions, processes, and outcomes? *Language Learning,* 44, 493-527.

Sotillo, S. M. (2000). Discourse functions and syntactic complexity in synchronous and asynchronous communication. *Language Learning & Technology, 4*(1), 82-119. Retrieved May 6, 2002, from http://llt.msu.edu.vol4num1/sotillo/default.html.

Swain, M. (1993). The output hypothesis: Just speaking and writing aren't enough. *The Canadian Modern Language Review,* 50, 158-164.

Swain, M. (1995). Three functions of output in second language learning. In G. Cook & G. Seidhofer (Eds.), *Principles and practice in applied linguistics: Studies in honor of H. G. Widdowson* (pp. 125-144). Oxford, UK: Oxford University Press.

Tamaoka, K. (1991). Psycholinguistic nature of the Japanese orthography. *Studies in Language and Literature, 11*(1), 49-82.

Varonis, E. M. & Gass, S. (1985). Non-native / non-native conversations: A model for negotiation of meaning. *Applied Linguistics,* 6, 71-90.

Warschauer, M. (1998). Interaction, negotiation, and computer-mediated learning. In M. Clay (Ed.), *Practical applications of educational technology in language learning.* Lyon, France: National Institute of Applied Sciences. Retrieved May 6, 2001, from http://www.insa-lyon.fr/Departments/CDRL/interaction.html.

Werry, C. C. (1996). Linguistic and interactional features of Internet relay chat. In S. Herring (Ed.), *Computer-Mediated Communication: Linguistic, social, and cross-cultural perspectives* (pp. 47-63). Amsterdam: J. Benjamins.