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ANONYMITY AND NEGATIVE FEEDBACK IN COMPUTER-MEDIATED CMMUNICATION

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ABSTRACT

ANONYMITY AND NEGATIVE FEEDBACK IN COMPUTER-MEDIATED COMMUNICATION

By

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The present study investigated whether and how anonymity influences the provision and use of negative feedback in task-based computer-mediated communication (CMC). A total of 32 dyads, involving native speakers (NSs) and nonnative speakers (NNSs) of English, participated in a two-way communication task. Two synchronous online chat programs were chosen in order to manipulate anonymity: one for the identifiable condition, and the other for the anonymous condition. The results of chi-square tests show that, whereas there were no differences in the amount of the provision of negative feedback and use of opportunities between the identifiable condition and the anonymous condition, there was a significant difference in the number of NNS reactions to NS response between two conditions.

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Introduction

Positive Evidence and Negative Evidence

It is commonly accepted that input is important for language acquisition to occur; however, there are different theoretical perspectives regarding the exact role of input in the process of language acquisition. One perspective regards input as the major factor while another has the view that input works within the framework of internally programmed Universal Grammar. Nonetheless, regardless of the different views, input is considered to be an important construct in language acquisition.

Although the importance of input is uncontroversial both in first language acquisition (FLA) and second language acquisition (SLA), the kinds of linguistic input that play a role in language acquisition have been debated. Theoretically in language acquisition there are at least two kinds of evidence available for language learners: positive evidence and negative evidence. Positive evidence is input, which comprises the set of well-formed sentences to which learners are exposed. Negative evidence is the data that provide information to the language learner about what is not allowable in the target language. With respect to evidence requirements for language acquisition, two positions view the roles of two kinds of evidence differently. One position strongly supports the role of innate knowledge in language acquisition. The opposing position considers the effects of linguistic environmental variables on language development as well as the role of innate knowledge.

From a nativist perspective, which supports the role of innate knowledge, only positive evidence constitutes input for language learners. Grimshaw and Pinker (1989), Pinker (1989), and Beck and Eubank (1991) argue that the role of negative evidence in

language acquisition should not be assumed unless four conditions are met: (a) Negative evidence exists, (b) it exists in a usable form, (c) it is used, and (d) it is necessary for acquisition.

There have been a number of studies exploring negative evidence. In FLA, early definitions limited negative evidence to explicit prohibitions or corrections. Thus, very little negative evidence was found in conversation between mothers and children (Brown & Hanlon, 1970). There is some research investigating the existence and use of negative evidence. Replicating the study of Brown and Hanlon (1970), Hirsh-Pasek, Treiman, and Schneiderman (1984) found that mothers are more inclined to repeat children's ungrammatical sentences than grammatical sentences. They suggested that the cues that distinguish between well-formed and ill-formed sentences exist in the language learning environment. Demetras, Post, and Snow (1986) expanded the definition of negative feedback. They investigated whether mothers responded differently to their children's utterances with explicit and implicit feedback. They found that mothers are more likely to provide implicit feedback or request clarification of children's ill-formed utterances than of the well-formed ones. Bohannon and Stanowicz (1988) observed adult-child conversation for evidence of adults' differential responding to the children's syntactic, phonological, and semantic errors. They found that adults are likely to provide the correct syntactic form or pronunciation immediately after the child error has been uttered. Farrar (1992) investigated the effects of recasts on the morpheme acquisition of children, and found there were corrective recasts following ungrammatical sentences and children imitated the grammatical morphemes contained in the corrective recasts. Thus, these

findings suggest that there is negative evidence provided in child language acquisition and children notice the information and make use of it.

In SLA, while there are those who support the nativist perspective, a number of studies that contribute to the four conditions for negative evidence to be assigned a role in language acquisition have been conducted. Early studies defined only explicit error corrections as negative evidence in SLA as well. Implicit negative feedback was not taken into consideration. Chun, Day, Chenoweth, and Luppescu (1982) investigated native speaker (NS) - nonnative speaker (NNS) interaction. They examined natural conversation and found that only 8.9 % of errors were corrected by NSs.

On the other hand, recent research includes implicit negative feedback, such as recasts and negotiation strategies, which involve repetition, confirmation checks, and clarification requests. A large amount of research has revealed that negative feedback obtained during negotiation work or elsewhere may be facilitative of L2 development.

There are many studies that explored the existence and the use of negative feedback, which are the first two requirements for negative evidence Oliver (2000) examined the provision and use of negative feedback in the context of NS-NNS dyads and the context of classrooms with both adults and children. The results indicate that learners in any condition received negative feedback and used the feedback provided to them. There was no significant difference according to age, but learners ignored negative feedback more in the dyad context than the classroom context. Mackey, Oliver, and Leeman (2003) compared interaction between NS-NNS and NNS-NNS adult and child dyads. They found that negative feedback exists in all dyad types, where at least 30 % of errors resulted in negative feedback, much of which led to modified output. Further, they found

that NSs provided significantly more feedback than NNSs in adult dyads. This finding seems consistent with the previous literature. Pica, Lincoln-Porter, Panios, and Linnell (1996) compared the interaction of NNS-NNS with the interaction of NS-NNS. They found that the interaction of NNS-NNS does not provide as much feedback as interaction with NSs does.

Thus, it seems that the first and the second requirements for negative evidence, that is, the existence and the use of negative evidence, have been met in SLA. Furthermore, not only existence and use in various contexts, but also the different forms of negative feedback, have been explored. With regard to the forms of negative feedback, which is the third requirement for negative evidence, Long (1996) suggests that the forms of negative evidence can be either preemptive or reactive. Reactive negative evidence, that is, negative feedback, can be either explicit or implicit.

There is some observational research investigating the forms of negative feedback found during conversational interaction. Oliver (1995) examined the pattern of interaction in child NS-NNS dyads. Two forms of negative feedback were identified: recasts and negotiation strategies, the latter of which includes repetition, clarification checks, and comprehension checks. The findings were that NSs respond differently to the grammaticality and ambiguity of their NNS peer's utterances, that NS responses were triggered by the type and complexity of NNS errors, and finally that negative feedback was incorporated by the NNSs into their interlanguage system. Another observational study was classroom research conducted by Lyster and Ranta (1997). They transcribed four French immersion classes in Canada and identified six different types of negative feedback used by teachers. The six types were explicit correction, recasts, clarification

requests, metalinguistic feedback, elicitation, and repetition. They found that there was negative feedback provided to learners and that the most frequent type of negative feedback in classrooms was recasts even though they did not elicit learners' immediate incorporation. Leeman (2003) compared four different types of interactional input, including recasts, negative evidence, enhanced salience of positive evidence, and unenhanced positive evidence (control), to investigate the elements that can account for the benefits of recasts. She found that only recast and enhanced salience groups significantly outperformed negative evidence and unenhanced groups, concluding that the utility of recasts is derived in part from enhanced salience of positive evidence, and that the implicit negative evidence may not be a crucial factor. Mackey, Gass, and McDonough (2000) investigated the perception of negative feedback. In order to examine learner's interpretation of interactional feedback, the technique they used was stimulated recall. They found that learners were accurate in perceiving lexical and phonological feedback as such, while they were not accurate in identifying morphosyntactic feedback as such. Given that learners perceived some feedback as feedback, this suggests that the forms of interactional feedback are potentially usable even if not actually used during interaction.

The effects of negative feedback on linguistic development according to type have also been studied. To measure linguistic development, these studies were conducted with a pretest-posttest design. Long, Inagaki, and Ortega (1998) investigated the role of implicit negative feedback, recasts in particular, for L2 Japanese and Spanish learners. They found that adults can learn from implicit negative feedback and recasts can be more effective than models. Mackey and Philp (1998) investigated the effect of recasts on

learners' interlanguage development over time as well as the nature and content of learner response to recasts. They suggested that recasts may be beneficial for short-term development even if it is not incorporated into immediate learner response. Iwashita (2003) examined the role of task-based interaction in grammatical development. She found that although NS interactional moves containing positive evidence were 10 times more frequent than those containing implicit negative feedback, only learners who had an above-average score on the pretest benefited from the positive evidence provided. In contrast, implicit negative feedback had beneficial effects on short-term development of the grammatical targets regardless of the learner's current mastery of the target structures. Recasts were found to have a larger impact than other conversational moves on short-term L2 grammatical development.

In sum, many studies have examined negative evidence across languages, ages, and interlocutor types. The results of studies suggest that in SLA, negative evidence exists, its forms are potentially usable, it is used, and lastly it seems to contribute to language development.

Interaction as a Source of Negative Evidence

From the perspective of those who support the effects of linguistic environmental variables on language acquisition, conversational interaction plays an important role. In the interactionist paradigm, whereby it is believed that conversational interaction plays a role in language acquisition, it is important that interaction is not considered as a cause of language development, but as a "priming device" for language learning (Gass, 1997). Long (1996) also discusses the facilitative role of interaction in the updated version of the Interaction Hypothesis:

> ... negotiation for meaning, and especially negotiation work that triggers interactional adjustments by the NS or more competent interlocutor, facilitates acquisition because it connects input, internal learner capacities, particularly selective attention, and output in productive ways. (pp. 451-452)

In addition to the theoretical support for the role of interaction, empirical studies support the role of interaction as a facilitator for language learning (Gass, Mackey, & Pica, 1998, for review). Some research suggests that interaction facilitates language development. Gass and Varonis (1994) investigated the relationship among input, interaction, and production. They manipulated the conditions for input: modified or unmodified, and for interaction: interactive, or noninteracive. They found that there is a positive influence of interaction on a learner task performance. Polio and Gass (1998), replicating the study of Gass and Varonis (1994), found interaction induced NSs' modified output, and led to better comprehension of NNSs. Mackey and Philp (1998) found positive developmental effects of interaction with intensive recasts. In the intensive recast treatment, the trained NSs provided recast to any non-target-like utterance given by the NNSs as much as possible. Their results suggest that for more advanced learners, interaction with intensive recasts may be more beneficial. Mackey (1999) investigated the development of question formation. She found a positive relationship between interaction and development. Learners with structure focused interaction moved along a developmental path more rapidly than learners without it. Thus, it can be said that the findings of empirical studies lend support to the facilitative role of interaction.

In relation to negative evidence, one of the reasons that interaction is beneficial in language learning concerns the fact that learners can receive feedback during interaction.

In other words, conversational interaction possibly avails language learners with both positive and negative evidence. Thus, conversational interaction can be said to not only play a facilitative role in language acquisition, but work as a source of negative evidence.

Feedback and Attention

Given that positive and negative evidence are available in the linguistic environment for language learners, it might be important to discuss the cognitive process of learners that associates positive and negative evidence with learning. What helps language learners internalize linguistic input available in the environment into their interlanguage system is an issue to concern. Gass, Svetics, and Lemelin (2003) discuss the concept of attention in SLA, summarizing the literature. They propose that attentional devices might enable humans to "turn in" some stimuli and "turn out" others in language processing. Further, the importance of feedback has also been discussed in relation to attention (Gass et al., 1998; Gass, et al., 2003). Pica (1994) considers the availability of feedback in negotiated interaction regarding attention. She suggests that negotiation offers feedback to learners, and that feedback leads learners to pay attention to L2 versions of their interlanguage utterances and heightens their awareness of their own interlanguage system. Gass et al.(2003) refer to the issue of error correction (negative feedback) and discuss the relationship between attention and negative evidence. They state that:

> ...corrective feedback and negative evidence, both of which entail directed attention to specific parts of language, are not static phenomena: the learner's internal mechanism interacts with external factors. (p. 507)

It might be said that error correction (negative feedback) is important in that it can act as a catalyst to draw learners' attention to form.

There is some classroom research on error correction with respect to attention. Research such as focus on form, or form-focused instruction (Spada, 1997), has investigated the role of feedback in relation to attention.

Spada and Lightbown (1993) examined the effects of form-focused instruction and corrective feedback on the use of interrogatives in an oral communication task. They found that form-focused instruction and corrective feedback contribute to second language development in the short and long term. Doughty and Varela (1998) investigated the effect of implicit focus on form technique on past tense in a communicative language classroom. The results reveal that learners in the treatment group improved both in accuracy and the total number of attempts at past tense reference. Summarizing the literature, Long (2000) argued that by briefly shifting learner's attention to linguistic features during meaning-focused tasks, learners can focus on form. In other words, feedback can play a role in drawing learners' attention to a problem area in language learning. Thus far, linguistic environments have been proven to play an important role in language acquisition. The role of linguistic environments does not seem to be limited to face-to-face communication. Computer-mediate communication might also be considered to be potential environments in language acquisition.

Computer-Mediated Communication and SLA

Advanced computer-mediated communication (CMC) technologies have had an impact on practices in communication. CMC technologies today afford us with not only text tools, but also audio and visual tools. Furthermore, with the advent of the Internet, CMC technologies enable learners to communicate with anyone in any place in synchronous or asynchronous modes. Synchronous CMC is communication where a

message is sent and received instantaneously, such as chatting online, while asynchronous CMC is communication where there is an interval when a sender sends a message and when a receiver retrieves the message, such as email.

CMC seems to have great potential for language teaching and learning. Kern (1995) compared language production in CMC with production in oral discussion. He found that there was a striking difference in quantity of production. The CMC group outperformed the oral discussion group. Beauvois (1992) observed the computer-assisted classroom discussion of foreign language classes and found that typically reticent students and anxious or shy learners tend to participate in the CMC discussion more readily and more often than in the regular classroom. She also argues that CMC creates a relatively non-threatening atmosphere in the classroom. Chun (1994) found that students developed discourse skills and interactive competence. Furthermore, she found that CMC is a less stressful environment for learning, where learners are under neither time pressure to respond nor psychological pressure of making a mistake and looking foolish. In addition, another advantage is that CMC seems to have both informal and formal L2 environments; that is, it has an informal L2 environment because it provides extensive exposure to the L2 as spoken by native speakers within authentic communicative settings with many opportunities for productive use of the L2, and it also has a formal L2 environment, since it also provides focus on form and corrective feedback to the L2 learner (Cziko, in press).

Synchronous CMC technologies have been increasingly used for language teaching. Unique features of synchronous CMC have also been discussed. It has been said that synchronous CMC discourse exhibits features of both oral and written language. As Smith (2003) summarizes, the real-time nature of the communication, the ability to

provide stress to words and phrases, the use of the first person, and the clear informality are the characteristics similar to spoken language. It is similar to written language in that it lacks intonation, it has a permanent record of the discourse, it has increased lexical density, and it uses punctuation and textual formatting in messages. The unique features for synchronous CMC discourse are simplified registers, abbreviations, simplified syntax, the acceptance of surface errors, and the use of symbols and emoticons to express emotion. With respect to turn-taking, it includes a high degree of disrupted turn adjacency and more overlaps than in face-to-face communication. In her research investigating interactional coherence, Herring (1999) found that responses are often separated from the turns they are responding to, topics tend to decay quickly, and multiple, overlapping exchanges often share the same channel. Only one interactant at a time can use a given channel. The other interactant can read the message only when the message is sent by his/her interactant hitting the enter key on the keyboard of the computer.

It might be interesting to look at an example of how turn-taking can be disrupted. The following data, chat scripts taken from the data of the present study, shows an example of a disrupted turn adjacency. A NS and a NNS are engaged in the communicative task, where they are comparing very similar pictures. They are talking about a female in their pictures. Example 1 (a) illustrates the conversational data that appear in the screen of their computers.

(1) Example of a disrupted turn adjacency

(a)

NNS: woman hair is wave?

NS: hmm

NS: I would have said 'curl

NS: 'curls'

NNS: girl hair color is black??

NNS: ah~~~~~~~~[1]

NS: Is it shoulder length hair?

NNS: thanks..

NNS: yap..

NS: Then probably that's not really a difference

(NS 12, NNS 14, identifiable)

In most synchronous CMC technologies, every time a user hits the enter key on the keyboard, the message pops up in the screen of interactants. In Example 1 (a), the second, the third, and the fourth lines started with "NS," which means that a NS typed a message, "hmm," once and hit the enter key to send this message to his/her interactant, and then the NS typed "I would have said 'curl" and hit the enter key, and typed "'curls'" similarly. Although this looks like three utterances, it can be said that the second, the third, and the fourth lines comprise one communicative purpose. Fragmentation like this was often observed both in the NNS and NS data of the present study.

Furthermore, turn-taking in CMC has been discussed in the CMC literature, where disrupted turn adjacency is considered as the rule rather than exception (Smith, 2001, 2003; Herring, 1999). Looking at the example closely enables us to realize that not only turn-taking is violated, but also the sequence is incoherent. This happens because of the one-way nature of CMC. We cannot be certain from the data of the present study about whether or not each participant is really typing at the same time. Example 1 (b) illustrates a possible interpretation of the turn coherence of the same data with Example 1 (a), based on a speculated time frame. When both the NNS and the NS are thought to be typing simultaneously, their production is placed on the same line.

(1) Example of a disrupted turn adjacency

(b)

Time	NNS	NS
1	woman hair is wave?	
2	girl hair color is black??	hmm
3		I would have said 'curl
4		'curls'
5	ah~~~~~~~~	Is it shoulder length hair?
6	thanks..	
7	yap..	
8		Then probably that's not really a difference

As seen in Example 1(b), speculating the timing when the participants typed a message can give us a possible explanation of disrupted turn adjacency. In Time 1 only a NNS typed a message. In Time 2, however, a NS started typing a corresponding message to the first turn of the NNS, meanwhile the NNS did not wait for his/her interactiant's reply but typed the further question, "girl hair color is black??" After the NNS read the NS's utterance on the hair style of a female in the picture, the NNS typed in Time 5, "ah~~~~~~~~," and in Time 6, "thanks..," which is possibly responding to the NS utterance Time 2 through 4. At the same time, in Time 5 the NS moved to the next question, which resulted in a delayed reply from the NNS in Time 7.

Furthermore, communication is carried out in slow motion in online chatting (Beauvois, 1992). This could be very beneficial since learners are provided more time for processing while reading and typing messages, though the "feel" of the interaction remains similar to that of face-to-face oral interaction (Smith, 2001, 2003). Hence, it seems that those features unique to CMC are beneficial for language learning. Furthermore, CMC technologies carry possibilities for classroom and nonclassroom use.

Interaction in CMC

Thus far, given its advantages, CMC technologies seem to have potential as a tool for communication. One concern is whether CMC technologies afford an environment that can be facilitative for language learning as face-to-face communication does. In other words, whether similar features of interaction to ones in face-to-face communication can be found is in question.

A common account for the benefits of conversational interaction in face-to-face communication is that conversational interaction has such features that interaction

involving NNSs includes negotiation of meaning frequently, that interaction provides learners with linguistically modified input, such as repetition or simplification, and interactionally modified input, such as comprehension checks or clarification requests, both of which make input more comprehensible, and that interaction provides learners with opportunities for comprehensible output, where learners may move from semantic processing to syntactic processing.

Interaction in CMC can also be said to facilitate second language acquisition. There is evidence of comprehensible input, modified output, and negotiation of meaning observed in CMC as well (Blake, 2000; Kitade, 2000; Pellettieri, 2000). Kitade (2000) investigated text-based CMC, and argues that a lack of non-verbal cues may facilitate negotiation of meaning because communication has to rely merely on verbal correspondence in the CMC environment. Toyoda and Harrison (2002) examined negotiation of meaning occurring between NSs and NNSs of Japanese in the CMC environment. They examined what difficulties resulted in "triggers" [2] in negotiated interaction in CMC. Smith (2001, 2003) examined NNS-NNS interaction in task-based CMC and found that learners indeed negotiate for meaning in the CMC environment when nonunderstanding similar to face-to-face communication occurs. Negotiated interaction occurred similarly in CMC, but there were some differences from face-to-face communication. He compared his CMC model with the face-to-face model established by Varonis and Gass (1985), and found more frequent occurrence of NNS reactions to the NS response in CMC negotiated interaction than in face-to-face communication. In addition, interaction in CMC is also beneficial because learners can monitor and edit their messages (Ortega, 1997; Pellettieri, 2000).

In addition to the similarity found between face-to-face communication and CMC, features unique to CMC were also found. CMC technologies have logging capabilities, which make it possible for participants to see the conversation on the screen while they are doing text-based chatting. The conversation data can also be saved very easily and can be retrieved and reviewed by learners and teachers. Blake (2000) argues that these logs could be valuable resources for the enhancement of the learners' interlanguage.

Interactions in CMC have been studied by many researchers. However, not many studies have investigated negative feedback in CMC. In her observational study, Beauvois (1992) refers to error correction in CMC. In observing computer-assisted classroom discussion, she found that students were becoming indifferent to the appropriate usage of the target language as the semester progressed. Pellettieri (2000) examined task-based synchronous CMC interaction between NNSs of Spanish. She found that corrective feedback was given to lexical mophorsyntactic, and semantic errors in CMC, and that there was incorporation of both explicit and implicit feedback, though the rate was very low. Iwasaki and Oliver's (2003) empirical study investigated negative feedback in a CMC laboratory setting. They explored communicative interactions between NSs and NNSs of Japanese with an online text-chat program. They had the participants have "free online chat conversation." They found that negative feedback indeed exists in CMC, and it was used by learners, although the proportion of negative feedback to the number of non-target-like turns was lower than that found in the previous studies of face-to-face communication.

Four Features of CMC

Provided that CMC technologies afford potential use in language acquisition, a theoretical examination of features of CMC technologies might be required. That is, the question is whether and how the features specific to CMC influence the environment of SLA. Smith, Alvarez-Torres, and Zhao (2003) provide a theoretical view for CMC technologies. They discuss the features of CMC technologies and their impact on language learners' online interaction. They state that CMC technologies should be considered not as a uniform entity but viewed in terms of their own individual characteristics, and they delineated the four fundamental qualities: temporality, anonymity, modality and spatiality. In terms of temporality, as discussed, communication can take place in two fundamentally different modes: asynchronous and synchronous. Modality concerns information presentation. Some CMC technologies afford only written texts, while the others can include audio, video, and graphics. Spatiality in face-to-face communication is concerned with proximics, such as seating arrangement, whereas spatiality in CMC environments can be manipulated with graphical online chat programs by controlling the interface's spatial arrangement. For instance, participants were instructed that they could get closer to or farther from a Webcamera with MSN Messenger, and that they could get closer to or step away from their interactant's avatar by using the arrow keys with Activeworlds. In terms of anonymity, CMC technologies also differ in the degree to which participants' identities are revealed to one another. Complete anonymous communication is possible in CMC, while CMC also supports communication where identities are more obvious. Anonymity is less controlled in email. Pseudonyms seem to be preferred in online chat environments.

Anonymity

I will focus on the anonymity feature in the present study. The debate on anonymity is not limited to CMC technologies. The previous research on anonymity has found its impact on human behavior in several ways. Anonymity seems to induce more aggressive, even abnormal, behaviors. There is research investigating the relationship between anonymity and driving behavior (Ellison, Govern, Petri, & Figler, 1995). They investigated how anonymity influences the driving behavior of those who drive convertibles or 4x4s with the tops down (identifiable condition) and with the tops up (anonymous condition). They found supporting evidence for the previous findings that anonymity facilitates aggression. Anonymity also influences honesty. Bump (1990) examined the effects of use of pseudonyms in class discussion using networked computers. Participants felt that the primary advantage of pseudonyms was that they allowed true feelings to be expressed without fear of future recrimination. The results revealed that with pseudonyms computer-assisted discussion increases individuality and self-disclosure. Makkai and MacAllister (1991) investigated the relationship between anonymity and accuracy on sensitive questions. They asked the respondents the same questions in a sealed booklet and in a standard face-to-face interview. The results revealed that anonymity contributed to accuracy. Furthermore, anonymity seems to lead to more critical feedback. Antonioni (1994) investigated the effects of feedback accountability on upward appraisal ratings. He found that subordinates who used the accountability procedure rated their managers significantly higher than the subordinates who responded anonymously. Robinson (1995) investigated how anonymity influences students' teacher rating. The results suggest that students' ratings of teaching

performance suffer from significant validity problems and that performance indicators are likely to provide misleading information. That is, the results indicate that in students' teacher performance ratings differed more when they responded anonymously than when they responded in the identifiable condition. Hence, it seems that anonymity could create more aggressive behavior, make people more critical, raise self-disclosure, make people honest, and so forth. Looking at anonymity in association with CMC technologies, Zhao (1998) points out that regardless of the participant's knowledge of each other's identity and personal acquaintances, the electronic medium deindividualizes the communication, rendering it more socially and psychologically anonymous.

Given a context for teaching and learning, in light of the previous studies of anonymity on psychological and behavioral consequences, Zhao (1998) explored the effects of anonymity on CMC collaborative learning. He examined whether anonymity would enhance the critical nature of student peer review in email. He found that anonymity encouraged participants to be more critical during peer review, yet it led them to work less. Anonymity encouraged learners to focus more on fellow students' texts while engaged in peer editing sessions, but yielded less helpful and lower quality reviews than reviews in the identifiable condition.

The Purpose of the Present Study

The focus of the present study is to explore the potential of the CMC environment for language acquisition. In order to explore this, there are issues that should be taken into account. Whether the CMC technologies, which make it possible to control features such as anonymity according to purposes, influence the linguistic environment should be considered. If so, it is important to consider whether the manipulated feature brings any

beneficial or harmful outcomes for language learning. Motivated by the previous literature, I chose anonymity as the feature for manipulation in the CMC environment. Negative feedback, one of the important components of the linguistic environment in SLA, is chosen as one of the dependent variables. Reaction to negative feedback is the other dependent variable.

Method

Research Questions

In order to investigate whether and how anonymity influences conversational interactions between native speakers and learners of English, the following research questions were examined.

1. Does anonymity facilitate more negative feedback from a native speaker of English to an L2 learner?
2. Does anonymity facilitate more reactions from an L2 learner to negative feedback?
3. Do the characteristics of negative feedback and reactions to negative feedback differ according to anonymity?

Variables and Hypotheses

As discussed above, many researchers in second language acquisition agree that interaction facilitates learning (Long, 1996; Gass, 1997; Pica, 1994; Mackey, 1999; and others). Also, there are many studies investigating the effects of interactional feedback (Gass & Varonis, 1994; Mackey & Philp, 1998; Lyster & Ranta, 1997). Because CMC technologies allow us to choose the degree to which users' identities are revealed to one another (Smith et al., 2003), the question is whether and how anonymity influences NS-NNS interaction.

The purpose of the present study was to investigate the influence of anonymity on feedback. Thus, two conditions were examined: the anonymous condition and the identifiable condition. Smith et al. (2003) state that synchronous CMC technology can be realized in multiple forms and shapes and they should be considered from the viewpoint of its own individual characteristics and their combinations. The different characteristics delineated by Smith et al. (2003) are: temporality, anonymity, modality, and spatiality. In the present study, in order for anonymity to be salient, the other three characteristics were controlled in the two conditions. That is, in terms of temporality, in both conditions synchronous online chat was carried out. In terms of modality, participants used the text-chat function in both conditions. With regard to spatiality, unlike text-based chat program, where participants do not have any control over spatiality, graphical chat programs allow participants to control the spatial arrangement of the settings, their avatars, and other objects (Smith et al., 2003). Avatars are computer-graphic visual representations of people who are using chat software. Avatars can communicate with each other by gesturing as well as by chatting. Two programs were chosen for the present study: a graphical chat program with a video function, where participants can see their partners' faces, and one with an avatar function, where participants can not see their partners' faces, but see their partners' avatars. Thus, participants can manipulate spatial distances between themselves and their partners either with the avatar function by moving their avatar toward or away from their partner's avatar, or with video by getting their face closer to or farther from the Webcamera. Anonymity was determined by whether they can identify their partners' face. In the anonymous condition, participants were not able to see their partner's face in the screen, while in the identifiable condition

they were able to see their partner in it. They were asked to use pseudonyms during the experiments in both conditions. As discussed, many previous studies of CMC technologies on anonymity agree that anonymity in CMC might allow a potential freedom from prejudice (Herring, 1996), less risk and less pressure (Smith et al., 2003), and more distance between participants (Kern, 1998). Zhao (1998) investigated the effects of anonymity during peer review. He found that anonymity could be a "double-edged sword." Anonymity encouraged participants to be more critical during peer reviews, but they worked less. The participants focused more on students' journals, but yielded less helpful reviews in the anonymous condition than the identifiable condition. Based on the previous literature, the hypotheses to the research questions were established.

Since in the anonymous condition, native speakers do not have to see their partners' emotional reactions, they might feel more comfortable providing negative feedback. Thus,

> Hypothesis 1: Native speakers provide more negative feedback in the anonymous condition than in the identifiable condition.

Also, when nonnative speakers are provided negative feedback in the anonymous condition, it might be likely that they do not feel a responsibility to react to their native speaker partners. Similarly, it might be possible that nonnative speakers feel responsible to react to the negative feedback given by their native speaker partners in the identifiable condition. Thus,

> Hypothesis 2: Nonnative speakers provide fewer reactions to the negative feedback in the anonymous condition than the identifiable condition.

Furthermore, given that anonymity helps separate the message from its messenger, objectify knowledge and make it easier to criticize, and also creates a situation in which people could work less, based on the previous literature, a third hypothesis might be proposed.

Hypothesis 3: The characteristics of negative feedback and reactions differ between the anonymous condition and the identifiable condition.

Experimental Design Overview

The data collection for the present study was conducted in two locations, following the same procedure[3]. The procedure consists of three stages: The training session, Experiment One, and Experiment Two. Almost all participants had experienced online chat. In the training session, participants were introduced to the interfaces of two online chat programs, MSN Messenger version 6.1 and Activeworlds, learning how to use both. This training session took between thirty minutes to one hour. These chat programs were chosen because they are different in terms of anonymity. Activeworlds, which is a three dimensional chat program (See Figure 2 in *Materials* for a screen shot), was used for the anonymous condition because one cannot see one's chat partner's face in the screen, while MSN Messenger version 6.1 was used for the identifiable condition for its Webcamera function (See Figure 1 in *Materials*), where one can see one's partner's facial expressions in the screen. The participants learned how to use the functions of these programs and how to save the chat data. In the two experiments, participants were randomly assigned to form NS-NNS dyads. All participants had different dyad partners in these experiments. For example, a dyad of participants who carried out a task in Experiment One had a different partner than the participants in Experiment Two. A two-

way communication task was used in this study. Each participant of a dyad had a picture (See Appendix) that was similar to his/her partner's picture but slightly different. There were ten differences between their pictures. The dyads worked together to identify the differences between their pictures through online chatting. The present study was conducted in a within-participant design, where all the participants experienced two different conditions. All participants carried out tasks in two different conditions: the anonymous condition, and the identifiable condition. The tasks were counterbalanced, half of the dyads completed a task in an anonymous condition first, and the other half completed in an identifiable condition first. Also, each participant used a different task picture in the two experiments in counterbalanced order. Each session lasted approximately 50-60 minutes. The chart below illustrates the overall procedure of the present study.

Experiments		
Training Session	Experiment One	Experiment Two
Introduce CMC interfaces	Anonymous	Identifiable
	Identifiable	Anonymous

Participants

The participants in the present study were native speakers of English and nonnative speakers of English. Both native speakers and nonnative speakers were recruited and participated in two locations: Japan and the United States. Both the participants in Japan and those in the United States volunteered to participate in the present study[4]. All nonnative speakers were classified as having lower-intermediate and intermediate

proficiency levels in English by their language programs. The native speakers and nonnative speakers who participated in the present study had never met each other either online or in person before the experiments.

Participants in Japan

The nonnative speakers of English (N=6) were first-year Japanese students who were studying at the same college in Japan. Five were male and one was female. The average age was 20.0 years old (ranging from 18 to 22 years old). They were taking the same English course. The native speakers of English (N=6) were all from the Japan Exchange and Teaching (JET) program and were teaching English at junior high and/or high school in Japan from six months to one year and a half. Two were male and four were female. The average age was 26.25 years old (ranging from 24 to 32 years old). Of the total number of dyads, seven dyads were mixed-sex dyads.

Participants in the United States

Nonnative speakers of English (N=10) were Korean students who enrolled in the same level of an intensive English program at a university in the United States. Four were male and six were female. Based on some students' ages that were available, the average age was around 21 years old. The native speakers of English (N=10) were third-year and fourth-year students who were studying at the same university as the nonnative speakers. Six were male and four were female. The average age of the native speaker participants was 21.3 years old (ranging from 19 to 23 years old). With regard to the sex of the dyads, of the total of twenty dyads, 11 dyads were same-sex dyads.

Task Design

In order to investigate how anonymity influences negative feedback, two conditions were established: the anonymous condition, and the identifiable condition. A within-participant design was chosen in both contexts. Participants were assigned to form NS-NNS dyads, participated in a task under one of the two conditions, and they were assigned another dyad partner to complete the second task under the other condition. Two pictures were used for data elicitation. Conditions and pictures were counterbalanced in both contexts.

Tasks

In order to compare the amount and nature of negative feedback from native speakers of English in two conditions, the present study was carried out in a task-based design. Pica, Kanagy, and Falodun (1993) mentioned two important features for a 'task.' The first is that tasks are oriented toward goals, and the second feature is work or activity. In terms of learner production, particularly modification on interlanguage in response to NS feedback, Pica et al. (1993) say that the task requires learners and NS interlocutors to take turns drawing and describing pictures for each other to replicate, such as the information gap task, have been useful. Also, the jigsaw task should elicit the most negotiation of meaning. The jigsaw task is also a two-way communication task, where interactants hold portions of a totality of information that must be exchanged and manipulated toward a single task goal.

I chose a two-way communication task for NS-NNS dyads. "Spot the difference," a problem-solving task, which carried two features Pica et al. mentioned, was selected as a task for this study. In "spot the difference," each interactant of a dyad has a picture that is

similar to his or her partner's picture but slightly different. They work together to identify the differences between their pictures through interaction. In this task, interactants have shared access to the information needed for task completion.

The present study investigated negative feedback from NSs of English, rather than focusing on specific features of interaction, such as negotiation of meaning or learner output, a problem-solving task. "Spot the difference" was chosen for a feasible data collection method. Two pictures (See Appendix) were used for the tasks[5]. The pictures used for this study were "Train station," and "Gas station," taken from Ur (1998). Participants were asked to do the task through only text-chat, and they were not allowed to see each other's picture.

Materials

Two chat programs were used for the present study for two different conditions: The identifiable condition and the anonymous condition. As discussed earlier, there are four features in CMC: anonymity, temporality, modality, and spatiality. In order to keep the anonymity feature salient, the other three features should be as similar as possible. MSN Messenger version 6.1 and Activeworlds were selected to satisfy this.

Chat Software 1: MSN Messenger version 6.1

MSN Messenger version 6.1 was chosen as chat software for the identifiable condition. MSN Messenger version 6.1 can be used with a Webcam and it allows users to see each other in a small video window while chatting (See Figure 1). According to Cziko and Park (2003), who reviewed six free programs for synchronous audio and video communication via the Internet, MSN Messenger was among the best of the programs reviewed, and permits senders to monitor their own video as well as their correspondent's

video in a screen. Although it also allows the audio function, the audio was not used during the present study, but a Webcam function and a text-chat function were used. In the interface, there is a chat window in the center where you can see the chat conversation between you and your partner. To the right of the chat window, you can see your partner's face in the small video window. Below the chat window, there is a text window, where you can type what you want to say. To the right of it, there is also a small video window, in which you can see your face.

Figure 1. MSN Messenger version 6.1 interface

Chat Software 2: Activeworlds

Software selected for the anonymous condition was Activeworlds, which is commercially available online chat software (www.activeworlds.com). This software allows one to view three-dimensional worlds where there are three-dimensional objects

and avatars available (See Figure 2). With avatars, they can turn, wave, jump, spin, etc... They can choose any avatars they want to be, such as a female, a male, or a bird, among more than 10 other avatars. They can move toward or away from their partners. On their right side of the screen, there is a window for displaying World Wide Web (WWW) pages with Internet Explorer, which enables one to ask for help online. There is a 3-D window in the center, below which there is a chat window. Users can communicate to multiple people in the environment, or individuals. All the chat conversations appear in the chat window below the 3-D window. For the present study, I created 10 worlds. Each dyad was assigned a world to enter with passwords.

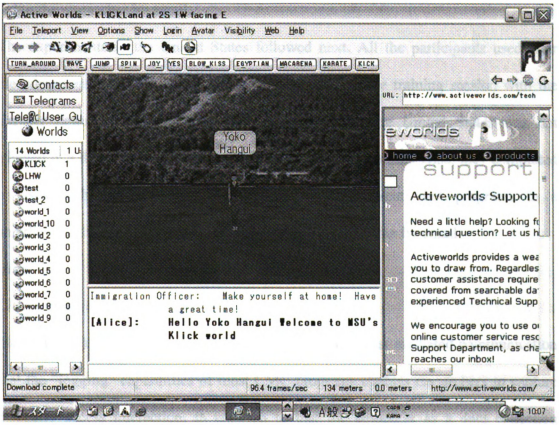


Figure 2. Activeworlds interface

Procedures

The first experiments were conducted in Japan. The researcher met participants and had an approximately one-hour training session with them before the experiments. Participants were introduced to the CMC interface, the functions of a Webcamera, how to save the chat data, the task and so forth. Participants were given two pictures in different envelopes. They were asked not to look at the pictures until the experiments. On the experiment day, NS participants met in a lab and NNS participants were at their home with their home computers. They completed two tasks with different dyad partners and with different chat programs in a counterbalanced design. They sent the chat data they saved to the researcher by email.

The experiments in the United States followed next. All the participants used their home computers this time. They also had a one-hour online training session with the researcher before the experiments. The experiments in the United States was not conducted in a day, instead it was done in the duration of a month. Also, they completed two tasks with different dyad partners and with different chat programs in a counterbalanced design. They sent the chat data to the researcher by email.

Coding

Chat Scripts

Smith (2003) states that one of the advantages of computer-mediated communication is that the "logging" capabilities of most CMC programs enables researchers to capture and readily access interaction, in addition to that the computer as a data collection instrument seems to be less intrusive in many ways than traditional procedures for recording. As he mentions, all the chat conversations were collected electronically with a

logging function. The data were analyzed based on turns. Regarding turn-taking in computer-mediated communication, most CMC systems are of a one-way nature, where only one interactant at a time can travel a given channel. It is technically impossible for the addressee to respond while the message is being written (Herring, 1999; Smith, 2001). Herring (1999) also found a high degree of disrupted adjacency of turns, overlapping exchanges, and topic decay as features of computer-mediated communication. She says that violations of sequential coherence are the rule rather than the exception in CMC. One-way nature of CMC causes adjacency pairs of turns, because the users create irrelevant messages. Based on Smith's (2003) study, a turn was counted each time there was a transfer of the "floor" from one participant to the other. The chat data used in the present study consist of the first 80 turns from each dyad in the data collected in Japan, and the first 100 turns from a dyad in the United States data, in order to compare the data between two conditions across two contexts. The averages of the numbers of turns are 97 in the Japan data, and 180 in the United States data. There seems to be several possible reasons for the difference in the averages of the total turns between the data collected in Japan and the United States. The proficiency levels of NNSs might have affected the number of turns and the NS variables, such as age or teaching experience, could also have affected it, since when the data compared, it seems that the conversation went on faster in the United States data than in the Japan data. The minimum number of turns for the task completion or within the time limit in the Japan data was 81 turns, while the minimum number in the United States data was 102 turns. Thus, considering the minimum numbers of turns for each context, 80 turn from the data

collected in Japan and 100 turns from the data collected in the United States comprised the corpus. The corpus for the present study was comprised of 2960 turns in total.

Off-task Discourse

Following Smith (2001), off-task discourse was not included in the 80 turns in the Japan data and 100 turns in the United States data. He found that off-task discourse, which consisted of greetings, or small talk, was found at the beginning of most chat scripts and after a dyad completed the task, and no negotiated interaction occurred during off-task discourse. Although the present study was not investigating the negotiation routine, in order to keep the contents of interaction similar in two conditions, off-task discourse was not included in data.

Data Coding

I will discuss the coding procedures for the data concerning the first and the second research questions. Research questions, 1 and 2, are presented again below.

1. Does anonymity facilitate more negative feedback from a native speaker of English to an L2 learner?
2. Does anonymity facilitate more reactions from an L2 learner to negative feedback?

Mackey et al. (2003) investigated the effects of interlocutor type on provision and incorporation of feedback in face-to-face communication. They established three possible categories for turns of NSs and NNSs of English: Initial learner utterances, interlocutor response to non-target-like learner utterances, and learner response to feedback. Iwasaki and Oliver (2003) also used a similar categorization. In their study, they investigated provision and incorporation of native speakers' negative feedback to their nonnative speaker interlocutors in interactions in online chat. They coded the data based on turns.

The data of the present study were also analyzed based on these previous studies, and the following three categories were established.

Initial nonnative speaker turns NNS turns were categorized as either target-like or non-target-like. As in the previous studies, only non-target-like turns were analyzed since the purpose of the present study was to examine the amount and nature of negative feedback. Target-like turns consist of turns that are acceptable for NSs of English. Turns including surface spelling errors that obviously occurred by typing errors independent from NNSs' phonological problems were considered as target-like. Also, self-corrections within the same turn, or in the subsequent turn without negative feedback, were classified as target-like turns. Non-target-like turns included one of the following features with the examples below: (1) unacceptable linguistic elements, (2) typographical errors that were difficult to distinguish from spelling, lexical, and grammatical errors, and (3) obviously incomplete turns by nonnative speakers. As in the following example, incomplete turns, where words or phrases were provided but it is difficult to interpret what the proposition of the turn is, were often observed.

Non-target-like turn examples

(1) unacceptable linguistic element

NNS: there 3 bag

NS: yes, 3 bags.

(NS 14, NNS 14, Anonymous)

(2) typographical errors that are difficult to distinguish from spelling, lexical, grammatical error

NNS: curely?

NS: Ya, it's curly.

(NS 10, NNS 10, Identifiable)

(3) Obviously incomplete turn

NNS: that's ok

NNS: okok!

NNS: a woman

NS: ok, then near the 3rd and 4h train area, there is a woman.

(NS 13, NNS 15, Identifiable)

Furthermore, after non-target-like turns were identified, the non-target-like turns were classified as either non-target-like turns with or without opportunities for negative feedback. A NNS turn, which is ending with an utterance including non-target-like forms, is a non-target-like turn with a feedback opportunity. If a NNS kept the floor by changing topics, or adding new information to the original non-target-like forms, it was considered as a non-target-like turn without feedback opportunities.

Native speaker response to non-target-like turns Native speaker responses to the nonnative speakers' non-target-like turns were identified and classified as either ignoring non-target-like turns, or providing negative feedback. Negative feedback in the present study was comprised of either explicit feedback, or implicit feedback, including recasts, confirmation checks, and clarification request. That is, if NS turns followed NNS non-

target-like turns by providing evidence that NNS turns were not acceptable, the turns were coded as negative feedback. Unlike face-to-face communication, negative feedback was not necessarily immediately following non-target-like turns, because of its disrupted turn adjacency. If there was no evidence that nonnative speaker turns were unacceptable, the turns were coded as no feedback. Below are the example of NS response with negative feedback to non-target-like turn and that of NS response without negative feedback to non-target-like turn..

(2) Example of NS response with negative feedback

Non-target-like NNS turn:	NNS:	two window. Do you see the window side of the clock?
NS response with negative feedback:	NS:	What do you mean?? There are two windows under the clock and next to the door.

(NS 6, NNS 4, Anonymous)

(3) Example of NS response without negative feedback

Non-target-like NNS turn:	NNS:	Are there two train in your picture?
NS response with no feedback:	NS:	Yes.

(NS 5, NNS 5, Identifiable)

Furthermore, NS feedback was categorized as either negative feedback with the opportunity to produce modified output or one without the opportunity for modified

output. If a NS let his or her partner take the floor after they give negative feedback, it is counted as negative feedback with the opportunity to produce modified output, while if a NS keeps the floor by changing topics, or continuing talking, it is considered as no opportunity for modified output. Although CMC has the nature of disrupted turn adjacency, the provision of opportunity was determined based on whether there was topic change within a turn. In other words, when a NNS read a NS turn including negative feedback, there is an opportunity for the NNS to react if the NS turn ended with negative feedback. However, if the NS turn included different semantic units at the end in addition to negative feedback, it does not seem that there is an opportunity for the NNS to react to the NS response. Examples 4 and 5, which illustrate negative feedback with ad without opportunity for NNS reactions, are as follows.

(4) Example of negative feedback with no opportunity

Non-target-like NNS turn:	NNS:	and he is wearing hat
Negative feedback with no opportunity:	NS:	he might be wearing a hat but he's got the dog in one hand on a leash and a suitcase in the other.

(NS11, NNS 11, Identifiable)

(5) Example of negative feedback with the opportunity

Non-target-like NNS turn:	NNS:	the light shape is circle?
Negative feedback with opportunity:	NS:	what do you mean?

(NS 13, NNS 15, Identiifable)

Nonnative speaker reaction to feedback The NNS turns following the negative feedback were coded whether the nonnative speaker reaction was responding to the

negative feedback by modifying their original non-target-like output, incorporating the negative feedback, and noticing that their original forms were non-target-like, or not. Unlike in face-to-face communication, NNS reactions to feedback do not have to appear immediately after the negative feedback in CMC because of its nature. The delayed reactions that could be considered as reactions to the negative feedback were also counted as well.

(6) Example of the NNS reactions (Incorporation)

Non-target-like NNS turn:	NNS:	1 bottom, look like mother, and sun
	NNS:	they hold hand
Negative feedback	NS:	OK, and the son?
NNS reaction to negative feedback	NNS:	mother is right, son is left

(NS 10, NNS 8, Identifiable)

(7) Example of the NNS reaction (noticing the non-target-like-ness)

Non-target-like NNS turn:	NNS:	woman hair is wave?
Negative feedback	NS:	hmm
		I would have said 'curl
		'curls'
NNS reaction to negative	NNS:	girl hair color is black??
feedback		ah~~~~~~~~
	NS:	Is it shoulder length hair?
NNS reaction to negative	NNS:	thanks..
feedback		

(NS 12, NNS 14, Identifiable)

Two English NS graduate students in the TESOL program were chosen as coders. They had a training session together first, and then coded the data separately. Despite the training session, the intercoder reliability was not high enough. We had a retraining session, and they redid the data coding. In the second time, the intercoder reliability reached a higher level. A sample of 25 % of the data was examined for reliability. The intercoder reliability was 98.4% for non-target-like turns, 98.4 % for interlocutor response to non-target-like turns, and 100% for nonnative speaker response. When there were discrepancies, the third coder, the researcher, determined the category.

In the course of data coding, in determining the provision of opportunity in particular, there were some problems, which resulted from the disrupted turn adjacency. . Sometimes NNS utterances were difficult to determine whether they were continuing

talking or whether they were responding to the previous utterance of the native speaker. Below are the examples of with and without opportunity for negative feedback.

(8) Example of the NNS turn with opportunity for negative feedback

NS: what do you mean forward?

NS: The car separates three parts.

NNS: Second parts have four pieces of luggage.

NNS: ok?

(NS 4, NNS 5, Anonymous)

(9) Example of the NNS turn without opportunity for negative feedback

NS: on the right is a woman

NS: he has black hair

NNS: she wear black skirt

NNS: ok

(NS 8, NNS 10, Anonymous)

As mentioned earlier, each of the examples above is considered as one turn in the present study. The problem was whether or not "ok" in the first example and the second example function similarly. Because of the nature of the CMC environment it is possible that you are not sure what your partner is going to say or ask. It is possible to interpret "ok?" in Example 8 as that NNS was confirming his or her information since a question mark is provided, while in "ok" in Example 9 NNS was possibly responding to the former question of NS since it does not include a question mark . Thus, although it is not possible to determine the intention of participants, the researcher and coders discussed and agreed that "ok?," "right?," and "yes?" were confirmation checks, whereas "ok,"

"right," and "yes" were responding to the previous NS utterance. Therefore, the latter are the turns without the opportunity for either negative feedback. This definition of the opportunity provision was used for the NS turns as well.

Research question 3 concerns the characteristics of NS responses to non-target-like turns and NNS reactions. The coding criteria for further examination were established. First, NS responses to non-target-like turns were classified according to negative feedback types. Negotiation strategies, such as clarification requests and confirmation checks, and recasts are not mutually exclusive categories. For example, confirmation checks, normally considered negotiation moves, can also contain recasts (Mackey et al. 2003). Thus, the following five categories were identified in the present study: explicit negative feedback, recasts, confirmation checks, clarification requests, and a combination of a recast and a confirmation check. Example 10 shows the combination type of a confirmation check and a recast.

(10) Example of a combination type of a confirmation check and a recast

NNS: employee =man with black hat

NNS: he is inserting gas

NS: is the employee pumping the gas?

(NS13, NNS 13, Anonymous)

What follows is the examination of NNS reactions to negative feedback. Following Mackey and Philp (1998), whereby they examined responses to recasts, NNS reactions to NS responses were categorized into four different categories: (a) continue, (b) repeat, (c) modify, and (d) other.

When NNSs do not modify their non-target-like forms, repeat their interlocutor's utterance, or show any reaction to their NS interlocutor's negative feedback, but they continue the task, it is considered as the "continue" type. Example 11 illustrates the "continue" type of the NNS reaction. The NNS uttered a non-target-like form, "he also wearing a coat," which is followed by the NS's recast. However, the NNS did not react to the NS's recast, but continued the conversation.

(11) Example of the "continue" type of the NNS reaction

NNS: he also wearing a coat

NS: yes he's wearing a coat

NNS: mine is .... he only holding a stick

(NS10, NNS 10, Identifiable)

When NNSs repeat the recast or the combination type of NS response, this is considered as "repeat" type. Example 12 is taken from Mackey and Philp (1998). The NNS's non-target-like utterance received negative feedback from the NS, "Is she having fun?" The NNS repeated after the NS with target-like form, "having fun." Below is the example of the "recast" type of negative feedback.

(12) Example of the "repeat" type of the NNS reaction

NNS: oh (..) she go to the zoo and she is she fun?

NS: Is she=?

NNS: fun

NS: is she having fun?

NNS: having fun

NS: yeah yeah

(data from Mackey & Philp, 1998, p. 344)

Further, when NNSs modify their original non-target-like forms after NS response, this is counted as the "modify" type. Example 13 is taken from the present study. The NNS's non-target-like form, "scart," is corrected by the NS. The NNS noticed he/she caused confusion on the NS by a spelling mistake, and modified his/her original non-target-like form into target-like one, "skirt."

(13) Example of the "modify" type of the NNS reaction

NNS: yeah, but the mother (left) wears black scart

NS: OK, mine doesn't have a scarf. Good job. ^^ [6]

NNS: nonono, I meah skart

skirt

hahaha

(NS 10, NNS 8, Anonymous)

Lastly, if some NNSs show any reactions, indicating their noticing their non-target-like-ness of their original forms, this is also considered as reaction, and categorized into the "other" type. Example 14 is taken from the present study. As seen, when the NNS's

question, "can you see grandfather," received negative feedback from the NS, the NNS reacted by apologizing although he/she did not repeat or incorporate the original non-target-like form immediately.

(14) Example of the "other" type of the NNS reaction

NNS: Can you see grandfather??

(2 turns)

NS: what do you mean when you say "can you see grandfather"?

NNS: sorry.

(NS 14, NNS 14, Anonymous)

For the intercoder reliability of analyses for Hypothesis 3, a sample of 25% of the data was examined by two trained graduate students who have taken the second language acquisition course. The intercoder reliability was 100%.

Results

Table 1 shows the descriptive analysis of the data collected from the total of 32 dyads interactions. The means, standard deviations, and ranges for each group are presented.

A chi-square procedure was used to compare negative feedback and reactions to negative feedback between the anonymous and the identifiable conditions. This method investigates the relationship of cell probabilities in nominal data.

Table 1

Dyads in the identifiable and the anonymous conditions: Means, standard deviations, and ranges in ( )

	Identifiable		Anonymous	
	M	*SD*	*M*	*SD*
Turns	150.3		149.9	
Non-target-like turns	16.88	8.45 (6-34)	15.94	6.65 (5-31)
Feedback opportunities	14.25	6.88 (4-27)	13	5.1 (5-20)
Feedback	2.69	2.47 (0-9)	2.56	2.25 (0-9)
Reaction opportunities	1.88	2 (0-8)	1.81	1.47 (0-5)
Reactions	0.19	0.40 (0-1)	0.63	0.72 (0-2)

Negative Feedback

Hypothesis 1 predicted that the larger amount of negative feedback from NSs would be found in the anonymous condition than in the identifiable condition. Before comparing the amount of feedback between two conditions, the environment for negative feedback

was examined. All non-target-like turns were examined, in terms of whether they provided opportunities for negative feedback or not. Table 2 and Figure 3 illustrate the proportion of non-target-like turns with and without opportunities for negative feedback.

Table 2

Non-target-like turns with and without opportunities for negative feedback

	Identifiable		Anonymous	
Feedback opportunities	228	(84.4 %)	208	(81.6 %)
No opportunities	42	(15.6 %)	47	(18.4 %)

$\chi^2(1, N=525) = 0.770$, *ns*

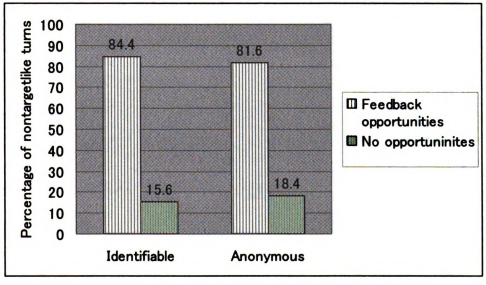


Figure 3. Non-target-like turns with and without opportunities for negative feedback

As seen in Table 2, in comparison of the non-target-like turns with and without opportunities for feedback between two conditions, there was no statistical difference in terms of opportunities for negative feedback between two conditions. Thus, the anonymity variable is independent from the opportunities for negative feedback.

Next, the NS responses to all non-target-like turns, that is, whether negative feedback was provided to non-target-like turns, were tabulated (See Table 3 and Figure 4).

Table 3

Negative feedback to non-target-like production in the identifiable and the anonymous dyads

	Identifiable		Anonymous	
Feedback	43	(15.9 %)	41	(16.1%)
No feedback	227	(84.1%)	214	(83.9%)

$\chi^2(1, N=525)= 0.002$, *ns*

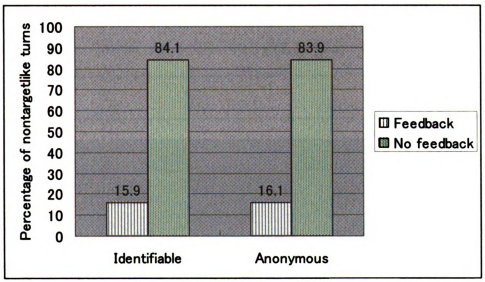


Figure 4. Provision of negative feedback to non-target-like production

As in Figure 4 and Table 3, the comparison between the identifiable and the anonymous conditions illustrates that negative feedback was provided in both conditions, and that the frequency is not different from each other. Instead, a very similar percentage of negative feedback was observed. There was no significant difference between the identifiable and

the anonymous dyads in terms of provision of negative feedback. This means that in the present study, anonymity did not influence the provision of negative feedback.

Table 4 and Figure 5 show the interactions between the opportunities for negative feedback and the provision of feedback across two conditions. There was no statistical difference in the interaction between negative feedback provision, and negative feedback opportunities. The distribution is almost the same between two conditions.

Table 4

Provision of negative feedback in the case that opportunities were provided

	Identifiable		Anonymous	
Feedback	35	(15.4 %)	30	(14.4 %)
No feedback	193	(84.6 %)	178	(85.6 %)

$\chi^2(1, N=436) = 0.074$, *ns*

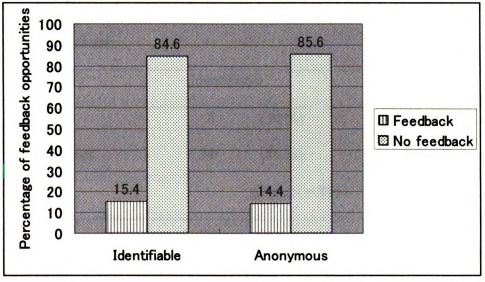


Figure 5. Provision of feedback in the case that opportunities were provided

Next, the NS behavior in the case that no opportunities for negative feedback were provided was also examined. The relationship between no opportunities for negative feedback and feedback provision is illustrated in Table 5 and Figure 6. Negative feedback was provided in both conditions even though there were no opportunities for negative feedback. Negative feedback was observed more frequently in the anonymous dyads, although the difference between the two conditions was not statistically significant. Nonetheless, the difference of the amounts of feedback between two conditions in percentage is greater when there were not negative feedback opportunities than when there were negative feedback opportunities. In comparison, when there were no negative feedback opportunities, there was less than one fifth of non-target-like turns with feedback occurring in the identifiable dyads, whereas there were more than one fifth with feedback occurring in the anonymous dyads.

Table 5

Negative feedback provision to non-target-like turns without opportunities for negative feedback

	Identifiable		Anonymous	
Feedback	8	(19 %)	11	(23.4%)
No feedback	34	(81 %)	36	(76.6%)
	$\chi 2$ (1, N = 89) = 0.25, *ns*			

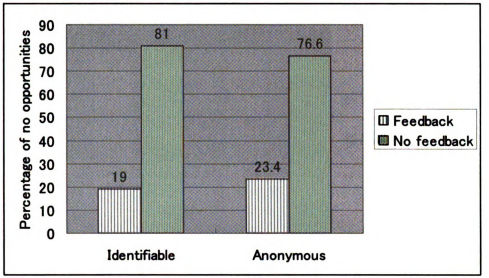


Figure 6. Negative feedback provision to non-target-like turns without opportunities for negative feedback

Hypothesis 3 predicted that the characteristics of negative feedback would differ between the identifiable dyads and the anonymous dyads. To explore the nature of feedback between two conditions, negative feedback provided opportunities for NNS reactions was examined (See Table 6 and Figure 7).

Table 6

Negative feedback with and without opportunities for NNS reactions

	Identifiable	Anonymous
Feedback with opportunities	30 (69.8 %)	29 (70.7 %)
Feedback without opportunities	13 (30.2 %)	12 (29.3 %)
	χ^2 (1, N = 84) = 0.009, *ns*	

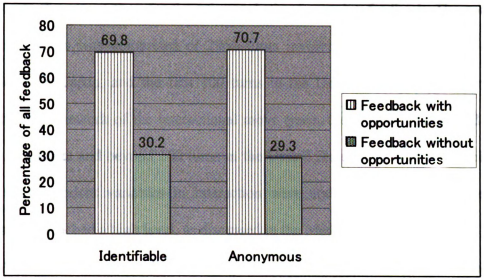


Figure 7. Negative feedback with and without opportunities for NNS reactions

Table 6 and Figure 7 illustrate that there is not a significant difference in the nature of feedback between two conditions in terms of opportunities. Of all feedback, 69.8 % of negative feedback in the identifiable dyads provided opportunities for NNS reactions. 70.7% of feedback provided opportunities for reactions in the anonymous dyads. There was no statistical significance between these two conditions

The examination of negative feedback in terms of the amount of its provision and its concomitant opportunities suggests that there are no significant differences between the identifiable condition and the anonymous condition. However, in order to explore the nature of negative feedback further, the linguistic environments of negative feedback were analyzed from the framework of types of interactional moves.

In order to examine the nature of negative feedback more closely, the residual parts of data that were not used for the previous analysis, were taken into consideration. With regard to the database for the further analysis, all the data collected were analyzed, not just the first 80 or 100 turns as discussed in the Method section. That is, more data were

added to the corpus than for the prior analysis of negative feedback. The corpus for the prior analysis was comprised of 2960 turns involving the first 80 turns of the data collected in Japan, and the first 100 turns in the United States data. For the analysis within a framework of the interactional move types, the interactions beyond 80 turns in the Japan data and beyond 100 turns in the United States data were also included, since all the dependent variables in interaction were coded by coders and the intercoder reliability reached a high level, as discussed in the Method section.

As illustrated in Table 7, all the negative feedback instances were classified into five categories: explicit feedback, recasts, recasts and confirmation checks, confirmation checks, and clarification requests. The primary negative feedback type was recasts for both the identifiable and the anonymous conditions. There is a tendency observed in both conditions that the recast type was most frequent. A combination of a recast and a confirmation check is the second most frequent. This condition was followed by the confirmation check type and the clarification request type. The explicit feedback type occurred the least frequently. In addition to the fact that the tendency was the same between two conditions, the frequency of negative feedback in each type was also similarly observed. Among all the feedback types, there were slightly more occurrences in percentage for the explicit type and the recast type in the data of the anonymous dyads than in the identifiable dyads, whereas there were slightly more occurrences for the confirmation check type and the clarification request type in the identifiable dyads data. It must be noted that the differences between the two conditions were noted in only a small number of instances, especially for the explicit feedback (N=2, for each condition). The distribution of negative feedback type is illustrated by the graph in Figure 8.

Table 7

Distribution of types of negative feedback

	Identifiable	Anonymous
Explicit feedback	2 (3 %)	2 (4 %)
Recasts	42 (61 %)	36 (63 %)
Recasts and confirmation checks	13 (19 %)	11 (19 %)
Confirmation checks	6 (9 %)	4 (7 %)
Clarification requests	6 (9 %)	4 (7%)

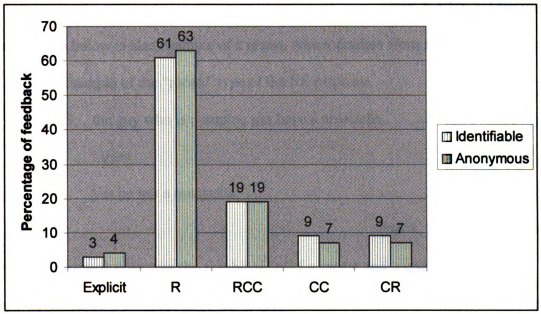


Figure 8. Distribution of types of negative feedback

What follows is a further examination of the nature of negative feedback. Example 15 is the recast type, which is the most frequent type of feedback (more than 60 % of the time), for both conditions. In Example 15, which is taken from the identifiable dyad, the

NNS did not provide an article before a noun, "center." The NS reformulated the sentence into a correct form.

(15) Example of the "recast" type of the NS response

NNS: Yes Yes. Mine, too.

Is there man in center?

walk with a stick.

NS: Yes. There is a man in the center. He is walking a dog and walking to the left side of the picture. He is wearing a hat and carrying a suitcase in his left hand.

(NS 2, NNS 2, Identifiable)

Example 16 below is also example of a recast, which is taken from an anonymous dyad.

(16) Example of the "recast" type of the NS response

NNS: the guy who is pumping gas have a mustache..

i gyes

NS: yes he has a muctache

(NS 8, NNS 11, Anonymous)

The next frequent type was the combination of a recast and a confirmation check. This type occurred 19 % of the time in both conditions. In Example 17, taken from the identifiable condition, and Example 18 from the anonymous condition, the NSs are confirming their understanding, while reformulating the NNS utterances.

(17) Example of the "combination of a recast and a confirmation check" type

NNS: mom hold bag on left

NS: so the mom and kid both have a bag in their left hand?

(NS 9, NNS 9, Identifiable)

(18) Example of the "combination of a recast and a confirmation check" type

NNS: aright bot wears black jacket

yeah

NS: They are both wearing black jackets?

(NS 12, NNS 14, Anonymous)

The confirmation check type and the clarification request type follow the combination type. The confirmation check type was with negative feedback occurring at 9% of the time in the identifiable dyads, 7 % in the anonymous dyads. Example 19 illustrates the case, where the NS is confirming his/her understanding to the NNS. In Example 20, in the example the clarification request type, NNS was testing his/her hypothesis for a lexical problem. The NS indicates that his/her non-understanding, though he/she noticed what the NNS was trying to say after he/she provided negative feedback.

(19) Example of the "confirmation check" type

NNS: do u have line

NS: line?

(NS 7, NNS 7, Identifiable)

(20) Example of the "clarification request" type

NNS: I have sign..

like foster..poster

NS: ?

I'm not sure what you mean by 'foster poster'?

Oh, poster.

(NS 12, NNS 14, Identifiable)

Examples 21 through 24 illustrate the explicit feedback type. Only two instances for each condition occurred in the explicit type of feedback. Since the number of tokens was the same between two conditions, all the instances were examined. Example 21 and 22 are from the identifiable dyads.

(21) Example of the explicit negative feedback type

NNS: The back of the fence

There are woods

NS: woods?

NNS: How can I explain?

NS: behind the fence ←

(NS 7, NNS 7, Anonymous)

(22) Example of the explicit negative feedback type

NNS: woman hair is wave?

NS: hmm

I would have said 'curl ←

'curls'

(NS 12, NNS 15, Identifiable)

In Example 21, the explicit feedback from NS was requested by the NNS's preceding utterance, "How can I explain?" In other words, this explicit feedback occurred with the NNS' utterance triggering. On the other hand, the explicit feedback in Example 22 looks more spontaneous, although it might be considered as a suggestion, rather than an overt correction. Examples 23 and 24 were excerpts from the anonymous dyads.

(23) Example of the explicit negative feedback type

NNS: next #2 there are something??

in the back~

NS: you mean like, in the distance ←

yes

it looks like a white building

(NS 4, NNS 5, Anonymous)

(24) Example of the explicit negative feedback type

NNS: I am disappointing.

(4 turns)

NS: In English you say....I am disappointed. Not (ing)

I am disappointed. This is disappointing. Do you understand

(NS 14, NNS 14, Anonymous)

In contrast to Examples 21 and 22, Examples 23 and 24 can be considered as more overt and direct. In Example 24, it is clear that the NS intentionally indicated what was incorrect and provided the targetlike version for the NNS.

NNS Reactions to Negative Feedback

Hypothesis 2 predicted that fewer reactions from NNSs would be found in the anonymous condition than the identifiable condition. In the course of exploring the nature of negative feedback, the environment for NNS reactions had been examined. That is, whether NS's negative feedback provided the opportunities for NNS reactions was illustrated in Table 6 and Figure 7. As seen, there was no statistically significant difference in terms of the opportunities for NNS reactions.

The frequency of NNS reactions to negative feedback is tabulated in Table 8 and Figure 9. In the identifiable dyads, NNSs reacted to NS negative feedback 7.0 % of the time, whereas NNSs reacted 24.4 % in the anonymous dyads. Since the number in a cell was less than 5, Fisher's exact test was used instead of Pearson Chi-Square test. Fisher's exact probability was 0.036. The difference between the identifiable and the anonymous dyads was statistically significant.

Table 8

NNS reactions to negative feedback

	Identifiable		Anonymous	
Reaction	3	(7.0%)	10	(24.4 %)
No reaction	40	(93.0%)	31	(75.6 %)

Fisher' s exact probability = 0.036 < 0.05

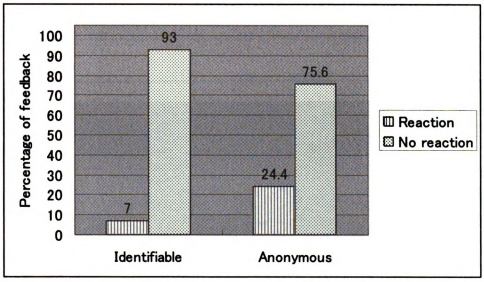


Figure 9. NNS reactions to negative feedback

The opportunities provided with negative feedback were used for NNS reactions were examined (See Table 9 and Figure 10). While the opportunities for reactions were used 10 % in the identifiable dyads, 31 % of the opportunities were used in the anonymous dyads. Fisher's exact test was used. The Fisher's exact probability was 0.057 ($p > .05$). This result suggests that even though the probability of the difference is not significant, it approaches significance. As Table 9 and Figure 10 illustrate, NNSs in the anonymous dyads reacted more frequently than NNSs in the identifiable dyads when the

opportunities for reactions were provided. That is, NNSs in the anonymous dyads used the opportunities more frequently than the identifiable dyads.

Table 9

NNS reactions in the case of opportunities provided

	Identifiable		Anonymous	
Reaction	3	(10 %)	9	(31 %)
No reaction	27	(90 %)	20	(69 %)

Fisher's exact probability = 0.057 > 0.05, *ns*

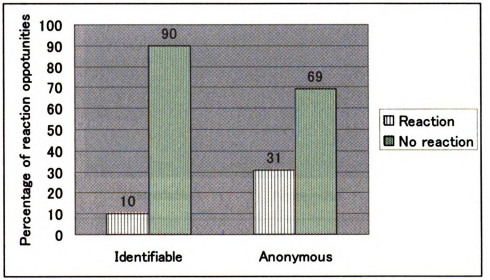


Figure 10. NNS reactions in the case of opportunities provided

In contrast, the frequency of NNS reactions when no opportunities for reactions were provided was compared between two conditions (See Table 10 and Figure 11). When there were no opportunities for reactions, both groups of dyads did not repeat after their NS interlocutor. There was not a significant difference between two conditions.

Table 10

NNS reactions to negative feedback with no opportunities provided

	Identifiable		Anonymous	
Reaction	0	(0 %)	1	(0.4 %)
No reaction	240	(100 %)	225	(99.6 %)

Fisher's exact probability =0.485 > 0.05, *ns*

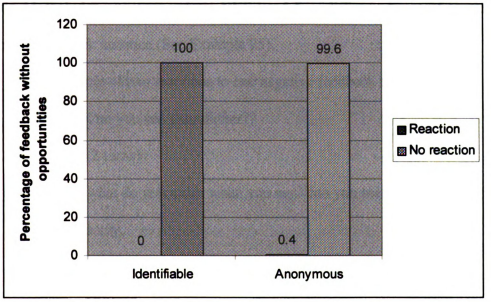


Figure 11. NNS reactions to feedback with no opportunities provided

Hypothesis 3 concerns the characteristics of NNS reactions. To explore the nature of NNS reactions, the reaction types were also analyzed[7]. The categories were continue, repeat, modify, and other. The reaction types were tabulated in Table 11.

Table 11

Types of NNS reactions

	Identifiable		Anonymous	
Continue	61	(89.7 %)	39	(76.5%)
Repeat	0	(0 %)	0	(0%)
Modify	6	(8.8 %)	8	(15.7%)
Other	1	(1.5 %)	4	(7.8%)

Table 11 includes one case, where NNS used two different types of reactions to one negative feedback instance (See Example 25).

(25) Example of two reactions to one negative feedback type

NNS: Can you see grandfather??

(2 turns)

NS: what do you mean when you say "can you see grandfather"?

NNS: sorry. ←

NS: the people on mine are small, i can't see any faces

NNS: mine is 12

NS: ok

NNS: in front of pictures, there is grandfather with stick~ ←

(NS 14, NNS 14, Anonymous)

Interestingly, there was no case for the repeat type observed. The most commonly observed was the case that NNSs continued the conversation without reacting to negative feedback from NSs. The next commonly observed reaction was the modify type. In

Example 26, the NNS modified his/her original utterance, "newt," indicated by the NS negative feedback.

(26) Example of the "modify" type of the NNS reaction

NNS: maybe in front of sign, there are 2people
the next 2people the newt 2people
right?

NS: in front of the sign that says TIMETABLE there are 2 people, (a man and a woman, the man has one bag, the woman has a bag and a purse
newt?

NNS: next sorry

(NS 7, NNS 7, Identifiable)

In one case in the identifiable dyads and four cases in the anonymous dyads, the NNS showed that they noticed that their turns included non-target-like forms, but the NNS did not modify their original utterances, for example saying by "sorry," "ah~, thanks," "I want to say it" etc.(See Example 27).

(27) Example of the "other" type of the NNS reaction

NNS: I am disappointing.
(4 turns)

NS: In English you say....I am disappointed. Not (ing)
I am disappointed. This is disappointing. Do you understand

NNS: Sorry.

(NS 4, NNS 5, Anonymous)

Next, the relationship between the types of negative feedback and NNS reactions were examined (See Table 12).

Table 12

NNS reactions to each feedback type

	Identifiable	Anonymous
Explicit feedback	1	1
Recasts	1	2
Recast and confirmation check	0	3
Confirmation checks	2	2
Clarification requests	3	3

It could be noted that whereas a combination of a recast and a confirmation check type did not induce NNS reactions in the identifiable dyads, it was generally frequent in the anonymous condition, although this should be cautiously discussed because of its small instances.

Table 13 and 14 illustrate the relationship between the types of negative feedback and the types of NNS reactions.

Table 13

"Modify" type of reactions to negative feedback types

	Identifiable	Anonymous
Explicit feedback	0	0
Recasts	1	1
Recast and confirmation checks	0	2
Confirmation checks	2	2
Clarification requests	3	3

Table 14

"Other type" of reactions to negative feedback types

	Identifiable	Anonymous
Explicit feedback	1	1
Recasts	0	1
Recast and confirmation checks	0	1
Confirmation checks	0	0
Clarification requests	0	1

As in Table 13, the distribution of NNS reactions to each type of negative feedback is not very different between the two conditions, except that the combination type induced two instances of NNS reactions in the anonymous dyads, while no instances were found in the identifiable dyads. Table 14 indicates that the NNSs in the anonymous dyads showed

their noticing to negative feedback to more various types of negative feedback in the present study.

Summary of Results

As can be seen in Table 1 through Table 14, and in Figure 3 through 11, there was no statistical difference between the identifiable condition and the anonymous condition, in terms of provision of negative feedback. In contrast, in terms of NNS reactions to negative feedback, the difference between the identifiable condition and the anonymous condition was statistically significant. Contrary to Hypothesis 2, the NNS reacted more frequently in the anonymous condition. With regard to the nature of negative feedback, the tendency for the frequent types of negative feedback was not very different, while when the two conditions were compared, the frequency within negative feedback types between two conditions was slightly different. The anonymous dyads outnumbered in the explicit feedback type and the recast type, while the identifiable dyads outnumbered in the confirmation check type and the clarification request type. With regard to the nature of NNS reactions, NNS showed that they noticed non-target-like forms in their utterances more in the anonymous condition than in the identifiable condition.

Discussion

One of the goals of the present study was to investigate whether anonymity influences negative feedback in CMC. Anonymity in the present study was manipulated in terms of face visibility; that is, whether one can see his/her interlocutor's face during interaction was controlled. The finding of the present study indicates that negative feedback to non-target-like forms is provided during a task-based online chat activity both in the identifiable condition and the anonymous condition. However, the amount of negative

feedback observed in the present study was rather small. The percentages of negative feedback provided in the present study were 15.9% of the time in the identifiable condition, and 16.1% of the time in the anonymous condition. In the previous literature, Mackey et al. (2003) found that 46 % of non-target-like turns involved negative feedback, Oliver (1995) observed that 61% of NNS error turns received implicit negative feedback, and Oliver (2000) also found negative feedback 47 % of the time to non-target-like utterances. These high percentages of negative feedback provision were found in face-to-face communication. Given that face-to-face communication includes phonological feedback in a large amount (Mackey et al., 2000), the low percentage of negative feedback observed in the present study might not be too surprising, since the present study of text-based online chat did not include phonological elements. However, compared to the research on negative feedback in text-based CMC by Iwasaki and Oliver (2003), where negative feedback was observed 21.58% of the time, the percentage found in the present study is still small.

There are several possibilities to explain the low rate of negative feedback in the present study. First, it would be possible that the task type might have influenced negative feedback provision. Iwasaki and Oliver (2003) had their participants have conducted "free online conversation," while the present study adapted a two-way communication task to compare the identifiable condition with the anonymous condition. The difference might be explained by Pica et al.'s (1993) claim that although the opinion-exchange task does not seem to provide opportunities for comprehension, feedback, and modified production as much, opportunities may be provided more than in the other task types. Smith (2003) investigated the effects of the tasks on negotiated interaction in CMC.

He compared the jigsaw task with the decision-making task in the CMC environment. With the tasks manipulated in terms of lexical saliency, he found that the decision-making task elicited more negotiated interaction, which is inconsistent with the previous literature on face-to-face communication. Not many studies have been done on the task effects in CMC, the task effects on negative feedback in CMC in particular. Thus, it might not be clear yet if task types matter for negative feedback provision. This awaits future research. Second, the language should be taken into consideration. The present study was conducted in the contexts of English as a second language and a foreign language, while Iwasaki and Oliver (2003) used the context of Japanese as a foreign language. The difference in provision of negative feedback to non-target-like forms might be attributed to the nature of the language. Acceptability of non-target-like forms might possibly differ across languages, negative feedback to which might also differ. Lastly, the variables concerning participants should also be taken into consideration. For example, gender, proficiency level of learners, and age of participants need to be considered.

With regard to the impact of the anonymity variable on the provision of negative feedback between the identifiable condition and the anonymous condition, no statistical difference was observed in the present study. Rather, the amount of negative feedback between the two conditions was almost the same. This could indicate that NNSs possibly receive a certain amount of negative feedback regardless of anonymity (i.e., face visibility) in the task-based CMC, and that the amount of negative feedback does not necessarily differ according to anonymity.

This does not support the prediction that there would be more negative feedback in the anonymous condition. Although the previous research on anonymity proposes that

anonymity has features, such as reducing social responsibility and relieving one from social pressure, and that anonymity presumably brings more aggressive behaviors, more honest self-expression, and more criticism to others, it might not necessarily be that anonymity helps provide more negative feedback, because anonymity may be multidimensional (Holden, Magruder, Stein, Sitarenios, and Sheldon, 1999). Another possibility is that since the electronic medium per se deindividualizes the communication, making it more socially psychologically anonymous (Zhao, 1998 for a summary), the anonymity manipulation in the present study (i.e., face visibility) might presumably not have given a significant impact on negative feedback provision.

Findings concerning the nature of negative feedback seem interesting as well. The results that show a relationship between opportunities for negative feedback and negative feedback provision between the identifiable and the anonymous conditions suggest that use of opportunities for negative feedback might not be categorical depending on anonymity. In comparison to the provision of negative feedback when the opportunity was provided and when the opportunity was not provided, there was no significant difference between the identifiable and the anonymous conditions, in terms of use of opportunities.

Next, in terms of types of negative feedback, as shown in the previous section, negative feedback in the present study was found in two forms with five types stemming from them. In the present study, negative feedback is comprised of explicit negative feedback and implicit negative feedback. Implicit negative feedback comprises three groups: negotiation strategies, recasts, and a combination of a recast and one of the negotiation strategies. Negotiation strategies include two types: confirmation checks and

clarification requests. A combination type consists of a recast and a confirmation check. The results indicate that all types of negative feedback used for classification in the present study were identified in both the identifiable and the anonymous condition. Also, though the distributions were similar, there was a tendency for interactions in the anonymous condition to emphasize explicit feedback and recasts and for interactions in the identifiable conditions to make use of negotiation strategies when negative feedback according to each type was compared.

In the course of analyzing the nature of negative feedback types, I explored the relationship between negative feedback type and the anonymity variable. As shown in Table 7 and Figure 8 in the previous section, with regard to negotiation strategies, both confirmation checks and clarification requests were found more frequently in the identifiable condition than in the anonymous condition. A combination type that includes a confirmation check and a recast was equally frequent between the identifiable and the anonymous condition. Recasts, another type of implicit negative feedback, and explicit negative feedback were more frequent in the anonymous condition.

Although it is not possible to determine the reason for this from the data of the present study, it could be said that the features of anonymity might have affected the sociolinguistic factors of interaction. In the identifiable condition, the participants were able to see each other. That is, NSs could possibly see their interlocutor's facial expressions and emotional reactions when they would provide negative feedback. However, since the procedure of the present study did not provide the evidence that the participants actually saw each other with video or saw their partner's avatar during the task, it might be necessary to investigate the eye placement of the participants during the

task-based CMC so as to examine how face visibility affects CMC interaction. Negotiation strategies, such as confirmation checks and clarification requests, seem to require more interlocutor involvement in the interaction, since negotiation strategies can lead to elicit interlocutor output, while explicit negative feedback and recasts seem to have a relatively one-way nature, and they seem to require less involvement therefore. The face visibility might have helped NSs in the identifiable condition provide negative feedback that sounds more interactive to the interlocutors, and face invisibility led NSs in the anonymous condition to provide negative feedback that is less interactive. That is, NSs might have felt secure providing negative feedback that is likely to elicit interlocutor's output when they see their interlocutor's face.

I have argued that face visibility helps interactants be more involved. An interesting example in the data from the identifiable condition supports this. There was a focus on form that seems to be attributed somewhat to face visibility, as a result of which, explicit feedback was provided by a NS. As seen in the previous section, there was the same number of instances for the explicit negative feedback type between both the identifiable and the anonymous conditions. However, when the environment of the interaction was examined in depth, in the identifiable condition, the negative feedback was elicited by the NNS's behavior (See Example 28).

(28) Example of the explicit negative feedback type

NS: but no pattern behind the bench fence?

NNS: yeb

NNS: the back of the fence

there are woods

NS: woods?

NNS: How can i explain?

NS: behind the fence ←

NNS: yeb

NNS: do u hve?

In Example 28, the NS's confirmation check, "woods?," triggered negotiation between the NNS and the NS, which might have made the NNS realize that his/her turn included a non-target-like form, although it is difficult to determine where he/she actually paid attention from this data. The NNS, who seems to be noticing the gap, asked the NS for feedback, instead of modifying or repeating his/her original non-target-like utterance. As discussed before, there is a possibility that face visibility in the identifiable condition led the NNS to use the negotiation strategies that require more interactants' involvement, which resulted in explicit negative feedback from the NS in this case. It might be noted that, as with this case, although there is explicit negative feedback provided, the linguistic environment should be taken into consideration.

Furthermore, how NSs view their negative feedback act might also be considered. Although negative feedback in the present study was interpreted as the behavior that might be promoted by the aggressive feature of anonymity, it is not necessarily true that

NSs perceive the negative feedback act as aggressive. Rather it might also be possible that they consider the negative feedback act as helpful. Therefore, it is would be useful to investigate how the NSs perceive the negative feedback act in the future research.

Thus far, given that there was no significant difference between the identifiable condition and the anonymous condition in terms of negative feedback provision in the present study, the results do not support the prediction that anonymity would facilitate negative feedback. However, it is clear that negative feedback exists in CMC, though the amount might not be as large as the previous literature suggests. Also, an analysis of the nature of negative feedback could lead us to think that anonymity might have an impact on the nature of negative feedback. There is room for future research with different task types, languages, and different CMC interfaces. In addition, the interactants' perception on anonymity and its influence on their linguistic behavior could be explored in the future.

Another goal of the present study was to investigate whether anonymity influences NNSs' reaction to negative feedback. Although it should be cautiously discussed because of the small number of instances of NNS reactions, it is clear from the results of the present study that NNSs used negative feedback in both the identifiable and the anonymous conditions. In face-to-face communication, Mackey et al. (2003) found that negative feedback with opportunities for modified output involved modified output 34 % of the time, and Oliver observed 35 % (1995) and 33 % (2000). Although the rate is not as high as that in face-to-face communication, the previous literature on interaction in CMC also found a certain amount of reaction to negative feedback in CMC. NNS

reactions to negative feedback occurred 25.6 % of the time in CMC (Iwasaki & Oliver, 2003).

The result of the present study is quite interesting. The prediction that NNSs would provide less reaction to negative feedback in the anonymous condition was not supported. In comparison of occurrences of NNS reactions to negative feedback when opportunities for NNS reactions were provided, in the identifiable condition NNS reactions occurred 10 % of the time. In contrast, in the anonymous condition the NNS reactions occurred 31 % of the time ($p = 0.057 > 0.05$)[8]. Further, in comparison of the number of NNS reactions to all negative feedback including both when opportunities were provided and when opportunities were not provided, only 7 % of the time NNS reactions in the identifiable condition happened, while reactions to negative feedback occurred 24.4 % of the time in the anonymous condition, and the difference between the two conditions was statistically significant ($p = 0.036 < 0.05$). There are a couple of possibilities for the significant difference. First, it is possible that sociolinguistic factors might play a role. The previous literature on CMC says CMC carries an anonymous feature, and there is more learner participation in CMC (Kern, 1995). Face invisibility might presumably have promoted this feature, which possibly resulted in more NNS reactions. In contrast, face visibility in the identifiable condition might have provided nonverbal cues, such as facial expressions, which possibly resulted in fewer NNS reactions. In other words, in the anonymous condition, since NNSs knew that their NS interlocutors could not see their reaction through the screen, they might have felt necessary to show their reactions somehow, whereas in the identifiable condition, since interactants can see their partner through the screen, NNSs did not have to worry about their NS interlocutor's perception

of their reactions. Another possibility is that NNSs in the anonymous condition might have paid attention to form more than NNSs in the identifiable condition, perhaps because an anonymous feature in CMC, that is, face invisibility in this case, reduced pressure for communication, and provided a more relaxed environment. However, these explanations are only speculative. Future research on sociolinguistic factors is required to determine the reasons.

There were also interesting findings in analyzing the nature of NNS reactions. In examining the nature of reactions, I explored the types of negative feedback and the following NNS reactions. Table 15 illustrates a comparison of NNS reactions according to the negative feedback type.

Table 15. *NNS reactions to each feedback type*

	Identifiable		Anonymous	
Feedback type	reaction / feedback (%)		reaction / feedback (%)	
Explicit feedback	1 / 2	(50 %)	1 / 2	(50%)
Recasts	1 / 42	(2.4%)	2 / 36	(5.6%)
A recast and a confirmation check	0 / 13	(0%)	3 / 11	(27.3%)
Confirmation checks	2 / 6	(33.3%)	2 / 4	(50%)
Clarification requests	3 / 6	(50%)	3 / 4	(75%)

Although it should be discussed with caution because of the small number of instances, as seen in Table 15, all the NNS reaction rates in the anonymous condition are higher than those in the identifiable condition, except with explicit feedback. Among them, it is

noticeable that 3 out of 11 instances (27.3%) of the combination type of negative feedback resulted in NNS reactions in the anonymous condition, while none resulted in NNS reactions in the identifiable condition. It is plausible that psychological factors might interact with the type of negative feedback to which NNSs react. As discussed before, I speculated that the numbers of NNS reactions to negative feedback differ between the identifiable and the anonymous conditions, perhaps because anonymity, that is, face invisibility, promotes more participation for NNS reactions. Given that NNS reactions occurred more frequently to all types of negative feedback in the anonymous condition in the present study, it might be that this feature of anonymity promoted NNSs' reactions in the anonymous condition. In addition, given that the identifiable condition did not lead reactions to a combination type, whose possible reaction could be yes/no answer, it might be that face visibility discouraged the NNSs to react verbally since there were nonverbal cues available through the screen in the identifiable condition, which might have resulted in the fact that the NNSs did not pay attention to form.

Furthermore, it might be interesting to look at the types of NNS reactions closely. NNSs reactions were categorized into either the "continue" type (no reaction), the "repeat" type, the "modify" type, or "other." As illustrated in Table 11 in the Results section, in either the identifiable or the anonymous condition, the "continue" type of reactions comprised the largest percent of all the reaction types. No "repeat" type was found in both conditions, perhaps because interactants can see all the chat conversations on the screen in text-based chat CMC so that they can reread anytime they want. Repetitions of negative feedback might sound redundant during the task, where interactants work for a clear goal. With regard to the "modify" type, comparing Tables 13

and 14, six out of seven instances (85.7 %) of the total reactions were categorized as the "modify" type in the identifiable condition, while in the anonymous condition, eight cases out of twelve (66.7 %) were of the "modify" type. One case out of seven, 14.3 % of all reactions in the identifiable condition, and four cases out of 12, 33.3 % of all reactions in the anonymous condition, involved "other", which does not fit either continue, repeat, or modify types (See Table 11). In this the "other" type, NNSs did not modify but showed their attention to negative feedback provided (See Examples 29 through 33 below). Example 29 is the only example observed in the identifiable condition, and 30 through 33 were found in the anonymous condition.

(29) Example of the "other" type of the NNS reaction

NNS: woman hair is wave?

NS: hmm

I would have said 'curl

'curls'

NNS: girl hair color is black??

ah~~~~~~~~ ←

NS: Is it shoulder length hair?

NNS: thanks.. ←

(NS 12, NNS 14, Identifiable)

In Example 29, although interrupted by the disrupted turn adjacency, it seems the NNS noticed that his/her original turn, "woman hair is wave?" was non-target-like when he/she received negative feedback, "I would have said 'curls'." The NNS expressed thanks to the NS's negative feedback.

(30) Example of the "other" type of the NNS reaction

NNS: I am disappointing.

(3 turns)

NS: In English you say....I am disappointed. Not (ing)

I am disappointed. This is disappointing. Do you

understand

NNS: Sorry. ←

(NS 4, NNS 5, Anonymous)

In Example 30, the NNS apologized when he/she received explicit negative feedback from the NS.

(31) Example of the "other" type of the NNS reaction

NNS: post? I see porl

(4 turns)

NS: Yeah. I think I misunderstood before. You could see a

pole? Then there is no difference.

NNS: I ,m sorry speling miss m(_ _)m[9] ←

(NS 6, NNS 4, Anonymous)

Example 31 illustrates that the NNS noticed his/her non-target-like form, "I see porl," was non-target-like, when negative feedback was provided and then he/she apologized.

(32) Example of the "other" type of the NNS reaction

NNS: left side of enter

pump on the left

NS: yes the pump on the left

NNS: right pump

do you have?

NS: wait wait, lets start over

i'm confused

NNS: ok

sorry

NS: it's ok

oh, ok, I missed it before, sorry,

I do se SALE

NNS: ok

NS: to the left of the entrance

NNS: yes ←

thanks..

I want to say it..

^^

(NS 6, NNS 4, Anonymous)

In Example 32, negative feedback was provided to the original NNS non-target-like form, "left side of enter" through negotiation of meaning. The NNS noticed the negative feedback.

(33) Example of the "other" type and "modify" type of the NNS reactions

NNS: Can you see grandfather??

(2 turns)

NS: what do you mean when you say "can you see grandfather"?

NNS: sorry. ←

(3turns)

NNS: in front of picture, there is grandfather with stick~ ←

(NS14, NNS 14, Anonymous)

In Example 33, the NNS first apologized when negative feedback was provided, then the NNS tried to modify the original non-target-like form. As seen in the examples, the NNSs reacted by expressing either thanks or apologies. The examples of "the other" type of NNS reactions indicate that NNSs noticed the negative feedback. Thus, it is clear that in the present study NNSs reacted to negative feedback by showing awareness, as well as by modifying their original non-target-like forms.

One finding of the present study is that the forms of negative feedback provided in both the identifiable and the anonymous conditions in task-based CMC are usable, and they are actually used. This could partially satisfy the first two of the four requirements necessary for negative feedback to play a role in language acquisition (Grimshaw & Pinker, 1989; Pinker, 1989; Beck & Eubank, 1991). The four requirements are: (a) Negative feedback should exists, (b) exist in a usable form, (c) be used, and (d) be necessary for language acquisition. However, it should be noted that the percentages of provision and use of negative feedback to all non-target-like turns found in the present

study is relatively small, compared to the results of Iwasaki and Oliver (2003) in CMC and to the previous literature in face-to-face communication. Although according to Levine (1963), concept learning was possible even when corrective feedback was provided on fewer than 25% of trials, it is unclear whether the amount of negative feedback in the present study can be proven to be beneficial for learning. Mackey, et al. (2003) state:

> ... If we establish that feedback can promote development, we then need to study whether more feedback leads to more development, whether there is a minimal level that is sufficient, and whether timing, quality, type, output opportunities, and context of feedback are relevant factors, as we suspect they are. (pp. 56-57)

In sum, the present study investigated whether anonymity influences negative feedback and reactions to it in task-based CMC. Several interesting findings were observed. First, NNSs can receive negative feedback in task-based CMC regardless of anonymity. Second, there were no significant differences in terms of the relationship between opportunities and negative feedback. Third, there was a significant difference dependent on anonymity in terms of reactions to negative feedback. The anonymous condition resulted in more frequent reactions. Thus, although the amount is not as large as in the previous literature regarding face-to-face communication, the present study suggests that negative feedback exists, it is usable, and is actually used regardless of anonymity in task-based CMC. It is difficult to determine the reasons for the results of the present study, yet there seems to be room for sociolinguistic factors to play a role.

Further research should investigate the effects of anonymity on negative feedback with different variables such as age, task type, and language in the CMC environment.

Footnotes

[1]~ is often observed in chat data of Korean students. It signifies making the last sound of a word longer.

[2] In the examination of the negotiation of meaning in CMC, Toyoda and Harrison (2002) based their study on the model of negotiation of meaning established by Varonis and Gass (1985). The components of the model of negotiation of meaning are a trigger, an indicator, a response, and a reaction to response. Toyoda and Harrison examined the causes of triggers.

[3]The data collection was done in two locations. Since there was no statistical difference between the two populations across variables, the data collected from the two populations comprise one corpus for the present study. For logistical reasons, in the experiments in Japan, the native speakers' experiments occurred in a computer lab, while the nonnative speakers used their home computers. In the experiments in the United States, both the native speakers and the nonnative speakers used their home computers.

[4]Although the participants were volunteers, they were compensated with cash incentives of 15 dollars in the US, and 2,000 yen in Japan (around 15 dollars at the time of the research) when they completed the research participation.

[5]A pilot study was conducted proceeding the present study. In the pilot study, two NS-NNS dyads conducted a two-way communication task with five pictures, in order to examine which picture might possibly elicit more non-target-like forms from the NNSs. In determining the pictures, the vocabulary used during the task, and learner proficiency levels were also taken into consideration.

[6]^ ^ is an emoticon favored by Asian people and some NSs in the present study, which signifies smiling.

[7]The analysis for the reaction types included all the reactions in the database, not just 80 or 100 turns.

[8]Oliver (1995) examined the provision and use of negative feedback according to the age of the learners and the context of the interaction. Her finding was that in an initial analysis, NNSs incorporated just 9.9 % of recasts. However, in post hoc analysis, where she was looking at whether the tokens without opportunities for the use of negative feedback were excluded, 35 % of negative feedback involved NNSs reactions. Given that the definitions of an opportunity in the present study are different than her study, the percentage of reactions found in the anonymous condition in the present study is relatively high. In her

study, NNSs incorporation (35 %) was counted when given the opportunity and when it was appropriate to do so. For example, if the NS recast had been in the form of a yes/no question, then the most appropriate response for the NNS was simply yes or no. In the present study, an opportunity was considered given when NSs turns ended with negative feedback to non-target-like turns without changing topics.

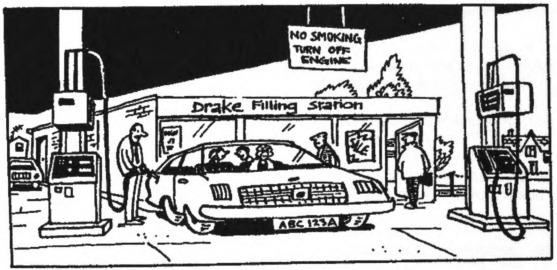
[9] m(_ _)m is an emoticon favored by Japanese learners signifying apologizing.

APPENDIX

Appendix

Picture set 1

Picture set 2



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