

The Role of Nonlinguistic Clues in Inferencing in L2 Listening Comprehension

UMINO Tae*

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Researchers and teachers may be intuitively aware of the need for L2 learners to develop their ability to infer the overall meaning of the speaker's utterance from nonlinguistic sources such as the physical environs or the speaker's facial expressions. To develop this ability, video materials are frequently used.

However, although such intuitions are probably correct, not much systematic attention has been paid to the kinds of information in the environment one needs to look for that make inferring possible, nor to how we might instruct the learner to use this information. This is partly due to the lack of empirical studies of the kinds of information L2 learners actually use in their inferencing processes and of the factors that determine the ways in which learners use this information.

The present paper is an attempt to uncover the inferencing procedures of L2 learners of Japanese in listening to conversation along with the classes of clues used in its process. In the study, two groups of subjects of different linguistic proficiency levels draw inferences from the lines contained in the popular video series, "Yan and the Japanese People" (produced by the Japan Foundation) and report their thought processes and the "clues" they have used through immediate retrospection.

The quantitative and qualitative analyses of the reported clues indicated that the number and type of clues that the subjects used are determined by the linguistic proficiency levels of the subjects and by the effectiveness of inferencing. This also seemed to result from the differences in approaches of the two groups. Through the comparison of number and type of clues reported by the two groups of subjects and their different procedures to inferencing, some roles of the nonlinguistic clues in L2 inferencing are discussed. Some pedagogical implications and suggestions for future research are also touched upon.

* 海野多枝: The Graduate School of Languages and Linguistics, Sophia University, Japan.

INTRODUCTION

The main concern of this paper is to understand the clues which L2 learners of Japanese employ to overcome the obstacles to their listening comprehension of the target language. However, the focus here is not on the linguistic means of doing so but rather on the nonlinguistic means and on the combination of these two means. I assume that the exploitation of the latter two means is as important as the exploitation of the former, especially in the early stages of L2 acquisition.

In almost any spoken form of communication, the act of communicating involves the use of nonlinguistic sources. As Riley (1976) claims, "the act of communication in face-to-face conversation can be a shake of a head, facial expression, or a particular intonation, and meaning is the relationship between all these features." The three components supposed by Poyatos (1976)—verbal (possessing +verbal +vocal features), paralinguistic (possessing -verbal +vocal features), and nonverbal (possessing -verbal -vocal features)—also play equally important roles in communicative interaction.

If meaning is to be conveyed through nonlinguistic sources, making use of such sources becomes an important strategy for comprehension for L2 learners. One strategy that involves the use of such nonlinguistic clues in listening is "inferencing."¹ In L2 listening, learners often encounter situations where there are some unknown linguistic fragments in the utterance of the speaker. By utilizing the available nonlinguistic sources, they can infer the overall meaning of the utterance despite the linguistic unfamiliarity.

Although the importance of using such nonlinguistic clues² in listening and the need for instructing or sensitizing the learner in their use has been claimed (Willis, 1983), research on this subject is at best at a 'pre-theoretical' stage (Gosling, 1981), and despite the many and diverse descriptions of particular kinesic features by ethnomethodologists, we have no analogous system for analyzing and accounting for these nonlinguistic elements in such a way as to allow us to develop a teachable pedagogic scheme.

As a step to the developing of such a scheme, the present study attempts to uncover some aspects of the use of nonlinguistic sources by L2 learners of Japanese. First, it classifies the range of clues described in the subjects' immediate retrospection of their inferencing processes. Then it sees how the use of these clues is affected by the degree of knowledge of the target language that the subjects possess, which also causes different approaches to inferencing. Finally, some of the roles of the nonlinguistic clues in L2 inferencing are discussed.

The Study

The subjects of the study consisted of two groups: a group of ten subjects who had not begun their study of Japanese and hence possessed no knowledge of Japanese (Non-

¹ The term "inferencing" was coined by Carton (1971).

² O'Malley and Chamot (1990), for instance, report that the use of this strategy was characteristic of effective listeners.

Table 1 Subjects of the Study

Nationality	Age	Occupation	Length of Stay in Japan
U.S.A. 17	18-20 1	Company employee 7	0-6 months 12
U.K. 3	21-30 12	Military officer 8	7-11 months 2
	31-40 5	Housewife 4	1-2 years 3
	51-60 2	Student 1	above 2 years 3

learner group, NLG),³ and a group of ten who had already begun their Japanese studies and possessed some knowledge of it (Learner group, LG). All were adult native speakers of English living in Japan. (See Table 1.)

The subjects of the two groups watched and listened to conversations in Japanese on video and made inferences as to particular lines in the speakers speech. Those lines on which the subjects make inferences, the "target lines," were either totally or partly new to them: for the NLG, they were almost totally new,⁴ since they barely possessed any knowledge of Japanese. For the LG, they included some linguistic elements which they had not yet studied. The task was to infer the meaning of the target lines despite linguistic unfamiliarity.

The task was performed individually, in their native language (English). After watching and listening to a piece of conversation in Japanese on video, the subject watched and listened to a shorter video clip which contained just the target line. At this moment, he reported his inference of the speaker's meaning and then explained how he reached that inference through immediate retrospection, including the sort of information he had used in his inference. Then he watched and listened to the same conversation again to compensate for memory lapses.

The data collection was performed in the subjects' homes, each lasting approximately 40 to 50 minutes. It was carried out in an unstructured fashion, i.e., subjects reported freely whatever came to mind, although the researcher sometimes asked probing questions to delve more deeply into their thought processes. The data were recorded on audiotape for subsequent analysis.

The materials used for the task were extracted from the video series, "Yan and the Japanese People,"⁵ out of which ten scenes were chosen, according to the clarity of the

³ Although they do not possess any formal knowledge of Japanese, they may know some words and expressions through general exposure.

⁴ They are "almost" totally new, because, as mentioned in footnote three, some subjects have picked up Japanese words through mere exposure and happened to know one or two words that appeared in the target lines.

⁵ This series was selected for the study for two reasons: first, since the purpose of the study was to describe the range of nonlinguistic clues used for inference, the material needed to be authentic or natural, i.e., not textbook-like. Secondly, since it aimed to see the inferencing procedures of *beginning* learners, it needed to be, to some extent, comprehensible, solely by watching. The material met these two conditions and was considered to be adequate.

Table 2 The Target Lines

Segment	Target Line	Translation
1.	<i>Kono tegami o posuto ni irete kudasaimasen ka.</i>	(Would you please put this letter in a mailbox for me?)
2.	<i>Denwa wa dochira o tsukatte mo i desu yo.</i>	(You may use either phone.)
3.	<i>Kore, enpitsu de kaite mo i desu ka.</i>	(May I write in pencil?)
4.	<i>Kono kami mo i desu ka.</i>	(May I borrow some of this paper, too?)
5.	<i>Kono nōto ni hon no namae to bangō o kaite kudasai.</i>	(Please write the titles and book numbers in this notebook.)
6.	<i>Oishī desu ne.</i>	(It's good, isn't it?)
7.	<i>Sutekina ohashi.</i>	(What beautiful chopsticks.)
8.	<i>I oto desu ne.</i>	(It has a nice sound.)
9.	<i>Kochira no hō ga yasui desu ne.</i>	(This one's cheaper, isn't it?)
10.	<i>Yasukatta desu ne.</i>	(That was really cheap.)

Table 3 Selected Elements of the Target Lines

Target line	Selected Elements
1. <i>Kono tegami o posuto ni irete kudasaimasen ka.</i>	post (mail) the letter, "requesting"
2. <i>Denwa wa dochira o tsukatte mo i desu yo.</i>	telephone, use, "giving permission," either one
3. <i>Kore, enpitsu de kaite mo i desu ka.</i>	with pencil, write, "asking for permission"
4. <i>Kono kami mo i desu ka.</i>	paper, borrow (have), "asking for permission"
5. <i>Kono nōto ni hon no namae to bangō o kaite kudasai.</i>	write, the reference of the book, "requesting"
6. <i>Oishī desu ne.</i>	good (tasty, delicious)
7. <i>Suteki na ohashi.</i>	nice (lovely, pretty), chopsticks
8. <i>I oto desu ne.</i>	good, sound
9. <i>Kochira no hō ga yasui desu ne.</i>	this (tape recorder), cheap, "comparative"
10. <i>Yasukatta desu ne.</i>	cheap, "past"

utterance and the comprehensibility of the scene. (See Table 2 for the target line. See Appendix for a full transcription of the text.)

The subjects' inferences were scored to see how successfully each inference was made. Each target line was presumed to contain one or more elements that should be included in any scoring of the subjects' ability to infer (Table 3). For example, for target line three, *Kore, enpitsu de kaite mo i desu ka*, three elements, "with pencil," "write," and "expression of asking for permission" (May I ~?, Can I ~? etc.) were selected. If all three figured in the subjects' inferences, three points were assigned. Twenty-five

elements were so identified in the ten lines: with one point assigned to each element, the possible highest score total was 25.

Results

Classes of Clues

From the data transcribed from the recordings, each piece of information presumed to have been used for the purpose of systematic guessing was identified as a "clue." A classification of the clues was developed, although part of the classification of non-verbal clues was drawn from Willis (1983).⁶

As to what constituted a "clue," the subjects' point of view was the determining factor. Since clues are only tools that they utilize for the purpose of inferencing, the only concern at this stage was to identify them, regardless of the truth or informative value of their content. For instance, in "He took a sip of that soup," the clues were identified as ACTION and OBJECT, regardless of whether or not it was really "soup." Also, when the subject's statement contained several clues at the same time, each embedded clue was regarded as a separate entry.

The clues were first classified into LINGUISTIC and NONLINGUISTIC. LINGUISTIC clues are either VERBAL or PARALINGUISTIC (Table 4). NONLINGUISTIC clues composed of NONVERBAL clues, DISCOURSAL clues, and WORLD KNOWLEDGE. NONVERBAL clues can further be classified into SETTING and BEHAVIOR.

Table 4 Major Classes of Clues Used for Inference

I. Linguistic clues
1. Verbal clues
2. Paralinguistic clues
II. Nonlinguistic clues
1. Nonverbal clues
A. Setting
a. Background (Place, Object, Participants' Clothing)
b. Situation
c. Participants
B. Behavior
a. Posture
b. Action (Gesture, Manner of Action)
c. Facial Expression
d. Eye Contact
2. Discoursal clues
a. Linguistic
b. Nonlinguistic
3. World knowledge

⁶ The subclasses of SETTING and BEHAVIOR was taken from Willis (1983).

Linguistic

- 1) VERBAL clues concern the actual linguistic fragments or information about language.
 - “He said ‘*enpitsu*.’ He was asking a question and he referred to pencil and the response was ‘pen.’ He certainly wouldn’t ask ‘Is this a pencil?’ ’cause, uh, he’s intelligent enough to know the difference. (Laughs.)” (Seg. 1)
 - “I know that he’s asking a question, ’cause he’s saying ‘*ka*’ at the end.” (Seg. 3)
 - “She said ‘something chopsticks.’ In Japanese, you put adjectives before nouns. So, what she’s saying must be some kind of an expletive, describing the chopsticks.” (Seg. 7)
 - “‘*No*’ is a possessive. But I don’t know what ‘*suteki*’ is. Maybe it’s a person’s name or place name, like ‘*suisu no*,’ some descriptive word.” (Seg. 7)
- 2) PARALINGUISTIC clues concern the paralinguistic features of the utterance: intonation, tone of voice, length of sounds, etc.
 - “Usually, when you ask a question, your voice goes up. He’s asking a question, ’cause his voice went up.” (Seg. 4)
 - “I know that she’s happy, because her ending is long, like exclaiming.” (Seg. 10)
 - “She sounds surprised, sort of a gasp, ‘*mā*.’ Breath-taking-away.” (Seg. 7)
 - “She said something in an asking way.” (Seg. 1)
 - “She sounded like, ‘Oh, by the way.’” (Seg. 2)

Nonlinguistic

- 1) NONVERBAL clues concern two classes of clues: SETTING and BEHAVIOR.
 - 1-A) SETTING concerns clues about BACKGROUND, SITUATION and PARTICIPANTS.
 - a. BACKGROUND concerns the *place* where conversation takes place, particular *objects* involved in the conversation, and features of the *clothing* of the participants.
 - “They’re in a library, so they must be talking about book checkout.” [place] (Seg. 5)
 - “He’s holding up a pencil, so he’s asking about it.” [object] (Seg. 3)
 - “I know it’s a present, ’cause it’s wrapped.” [object] (Seg. 7)
 - “He’s not a mailman, ’cause he’s dressed in a suit.” [clothing] (Seg. 1)
 - “He had an open shirt, so it must be hot out there. So, he said, ‘It’s nice and cold.’” [clothing] (Seg. 6)
 - b. SITUATION concerns the general idea or “schema” that the subject draws from the setting or behavior.
 - “It’s in a library and he’s taking out some books. It’s a library checkout. What do they ask you to do at the book checkout? They

ask you to write your name and the name of the book and the book number and so forth, so that they can keep track of who has it.” (Seg. 5)

“The situation is that the secretary’s showing him that this is his desk, this is his locker, . . .” (Seg. 2)

- c. PARTICIPANTS concerns who the participants of the conversation are, their relationships, etc.

“He’s a new employee, so she’s showing him where his things are.” (Seg. 2)

“She’s behaving very politely. She must be a very humble and gracious lady. She’ll never say anything rude to him.” (Seg. 7)

“His boss asked him to write something.” (Seg. 3)

“She’s a librarian. She has some authority.” (Seg. 5)

- 1-B) BEHAVIOR concerns the actual behaviors of the speaker at the time of the utterance.

- a. POSTURE concerns the way in which the body of the speaker is disposed.

“She had her back to him, when she said that throw-away line. So, it was like an afterthought, sort of ‘Oh, by the way’ kind of impression.” (Seg. 2)

“Body posture, relaxed.” (Seg. 6)

- b. ACTION concerns actions of the speaker at the time of the utterance and the manner in which they are performed.

“She opened the gift. So, it’s something about the gift.” (Seg. 7)

“Looks like he’s never tasted the tea before. He had got sort of a questioning look, ‘Do I like it?’ Then he decided, ‘Yes, I do.’ So, he drank it down quite quickly, then. He must’ve liked it.” (Seg. 6)

“She stopped him like, ‘Op! Before you go . . .’ manner.” (Seg. 2)

“She picked it up for a good look.” (Seg. 10)

- c. FACIAL EXPRESSION concerns facial expressions of the speaker at the time of the utterance.

“He’s smiling. He likes the sound of it.” (Seg. 8)

“He looks desperate for what’s on her desk. She looks cool. So, it’s obvious it(paper)’s hers and he’s asking for them.” (Seg. 4)

“His face looked like listening.” (Seg. 8)

“The way he looked up at the guy, sort of ‘asking’ kind of expression on his face.” (Seg. 3)

- d. EYE CONTACT concerns the eye contact, gaze length and the gaze direction.

“He’s looking towards her. Usually, you look at that person when you’re asking a question. So, I know that he’s asking her a question.” (Seg. 4)

- “ He looked up at the guy as if asking.” (Seg. 3)
- 2) DISCOURSAL clues concerns information within the co-text of the target line, i.e., what comes before or after it. It may be either linguistic or nonlinguistic.
- “ The secretary said ‘ *Dōzo* ’ afterwards, so he must have asked her permission to take the papers.” [Linguistic] (Seg. 4)
- “ It must have been a statement, ’cause he said ‘ Thank you.’ ” [Linguistic] (Seg. 2)
- “ I know that he asked for some papers, ’cause after he said it, he ripped two pieces of paper off her desk.” [Nonlinguistic] (Seg. 4)
- “ He passed it onto the other chap to share the good experience.” [Nonlinguistic] (Seg. 8)
- 3) WORLD KNOWLEDGE concerns subject’s knowledge about the world, including cultural knowledge.
- “ Normally, people won’t just go to someone’s desk and rip some papers off unless you ask.” (Seg. 4)
- “ Japanese are very polite, so she must be asking him politely.” (Seg. 1)
- “ Lots of forms today, they use pencil instead of pen in the States.” (Seg. 3)
- “ In England, when we borrow books, we sign our name.” (Seg. 5)
- “ You usually thank somebody and say it’s very good when they give you something.” (Seg. 6)

Comparison of the Two Groups

Comparing the use of the clues between the two groups in terms of frequency, the NLG reported more numbers of nonlinguistic clues than the LG in general. Table 5 shows the raw frequency of clues and the Rank Sum Z scores.

Out of a total of 1,011 clues described by the twenty subjects involved in the study, 565 were reported by the nonlearner group (NLG), and 446 by the learner group (LG). Rank Sum Z scores indicate that there are significant differences in the overall use of the clues between the two groups in terms of frequency.

Looking at the individual classes of clues, the clues that the NLG used significantly more than the LG were PARALINGUISTIC clues, clues concerning SETTING, BEHAVIOR, DISCOURSAL (nonverbal) clues, and WORLD KNOWLEDGE. On the other hand, the LG was observed to be using more VERBAL and DISCOURSAL (linguistic) clues than the NLG.

The rankings of the frequency of clues reported by the two groups show some similarity. (See Tables 6 and 7.) Spearman’s Rank Order Correlation score indicated a relatively high correlation of 0.70 between the two ranks. For example, ACTION, OBJECT and DISCOURSAL (nonlinguistic) were ranked the three most frequently used nonlinguistic clues in both ranks. On the other hand, there were other clues whose positions differed in the two ranks. PARALINGUISTIC clues, WORLD KNOWLEDGE, PLACE and PARTICIPANTS are ranked much higher by the NLG, whereas VERBAL and DISCOURSAL (linguistic) are ranked much higher by the LG.

Table 5 Frequencies of Clues Used by the Two Groups and the Z Scores

Clues	NLG (F)	LG (F)	Rank Sum (Z)	
Linguistic	59	112	**3.51	NLG < LG
Verbal	16	94	**3.78	NLG < LG
Paralinguistic	43	18	**3.44	NLG > LG
Nonlinguistic	506	334	**3.59	NLG > LG
Nonverbal	349	225	**3.29	NLG > LG
Setting	213	124	**4.45	NLG > LG
Background	134	94	**3.51	NLG > LG
Situation	48	21	**2.68	NLG > LG
Participants	31	9	**3.63	NLG > LG
Behavior	136	101	**2.15	NLG > LG
Action	96	79	n.s.	
Posture	2	0	n.s.	
Facial Expression	29	18	n.s.	
Eye Contact	9	4	n.s.	
Discoursal	119	95	2.04	NLG > LG
Linguistic	18	64	2.46	NLG < LG
Nonlinguistic	101	31	2.53	NLG > LG
World knowledge	38	14	**3.44	NLG > LG
Total	565	446	*2.95	NLG > LG

p < .05, * p < .01, ** p < .001.

Table 6 Ranks of Clues Used by the Two Groups

Rank	NLG	LG
1	Object (109)	Verbal Cue (94)
2	Discoursal (Nonlinguistic) (101)	Object (91)
3	Action (81)	Action (73)
4	Situation (48)	Discoursal (Nonlinguistic) (64)
5	Paralinguistic clues (43)	Discoursal (Linguistic) (31)
6	World knowledge (38)	Situation (21)
7	Participants (31)	Paralinguistic clues (18)
8	Facial expression (24)	Facial expression (18)
9	Place (20)	World knowledge (14)
10	Discoursal (Linguistic) (18)	Participants (9)
11	Verbal Cues (16)	Manner of action (6)
12	Manner of action (15)	Eye contact (4)
13	Eye contact (9)	Place (2)
14	Clothing (5)	Clothing (5)
15	Posture (2)	Posture (0)

Table 7 Spearman's Rank Order Correlation between the Ranks of Clues Used by the Two Groups

Ranks of Clues of NLG	
Ranks of clues of LG	0.70

Table 8 Scores of the Two Groups and the Rank Sum Z Score

NLG	LG
14	15
15	16
15	17
15	17
16	17
17	18
18	18
18	18
19	19
19	23

($Z=1.63$ n.s.).

Table 9 Spearman's Rank Order Correlation between the Score and the Frequency of Clues

	Score of NLG	Score of LG
Nonlinguistic clues	0.67	0.06
Linguistic clues	0.25	0.82

Finally, the relationship between the number of clues and the scores was examined (Tables 8, 9). A fairly high correlation of 0.67 was obtained between the score of NLG and the number of nonlinguistic clue use, and a high correlation of 0.82 was obtained between the score of LG and the number of linguistic clue use. This means that those among the NLG who obtained higher scores reported more numbers of nonlinguistic clues than the ones who scored poorly, and those among the LG who scored higher reported more numbers of linguistic clues than the ones who obtained lower scores. This indicates that the number of clues the subjects use has some effect on the success of inferencing.

Discussion

Different Procedures for Inference

As we have seen, there were significant differences in the use of clues between the two groups: the NLG reported a greater use of nonlinguistic clues than the LG, and the

LG reported a greater use of linguistic clues than the NLG. Also, the classes of the clues that were frequently observed in the reports of the NLG but was less likely to be so in the reports of the LG were clues concerning the SETTING, such as the PLACE the conversation took place, the CLOTHES that the participants wore, the relationships of the PARTICIPANTS, and the clues concerned with the PARALINGUISTIC aspects of the utterance. Such differences seem to result from the differences in the general approaches taken by each group.

Let us look more closely at the subjects' introspective reports from each group to see how their procedures differ. The following is an extract of a LG subject's report on the line "*Kono tegami o posuto ni irete kudasaimasen ka.*"

The lady said 'Excuse me' first and handed him the letter. She said '*posuto* something.' I didn't hear the verb. But, if you see someone handing a letter and saying '*posuto*,' there's no other possibility than to mail it. (Extract of LG's report)

This is a procedure typical of the LG subject in guessing the target line of Segment one. In this example, the subject infers that the lady had asked the man to do her a favor from hearing her use the expression *sumimasen* with him, and that she is saying something about the letter from seeing the letter. He knows that she said *posuto*. The only part he reports that he needs to fill in is what verb was used. From seeing her handing it to him, the subject easily infers that the verb is to "put the letter into the mailbox" or simply "to mail it."

In this example, the subject infers from the linguistic clue *posuto* that it has something to do with "mailing the letter." The lady's action of handing the letter to the man confirms his inference. Suppose, for instance, that the lady did not hand him the letter, he would perhaps have to change his hypothesis.

With the NLG, on the other hand, the procedure is quite different. They do not start by focusing on the language, since they hardly possess any knowledge of it. Instead, they observe the nonlinguistic clues from beginning to end and try to find an interpretation that seems to best fit the whole situation.⁷ Since nonlinguistic clues are the only reliable source on which they can base their inference, they pay equal attention to all kinds of nonlinguistic clues to find as much evidence as possible that assist their inference. Their attention on the nonlinguistic clues, therefore, is more or less spread or unfocused.

Let us look at how a subject of NLG made his inference on the same material.

He doesn't look like a mailman. He looks like someone in the neighborhood. She didn't look like she was thinking about the letter but suddenly remembered about it as she saw him. She handed him the letter and said something. It sounded like the English word "post." So, I'm assuming that she asked him to mail the

⁷ This is not to indicate that they don't pay attention to linguistic clues. They pay attention to all kinds of clues that may assist their inferences. Interlingual clues are one such example. Whether they really assist them, however, is another question.

letter for her when he goes. It wasn't a letter for him. If you're giving him the letter, it's not sealed. It wasn't a birthday card, or anything, 'cause birthday cards are square, but that letter was rectangular. And, they didn't look like they were leaving the house. She was doing laundry, right? And that husband looked like he was in his night clothes. (Extract of NLG's report)

Note how various nonlinguistic clues are used in the above extract such as participants' clothes, their relationships, and the features of the letter being sealed as being rectangular and so forth. The NLG who possesses no knowledge of the target language, rather than focusing on the language, focuses on the nonlinguistic clues from the beginning. Many of the subjects of the NLG reported that on seeing Segment one, they were unsure as to whether the speaker was asking the man to mail the letter or to deliver it to someone, or she was simply handing him a letter that she wished to give him. In the above extract, the subject who cannot infer properly just from seeing the speaker's action of handing the man the letter, uses various nonlinguistic clues to narrow down the possibilities and to confirm that his inference is correct. The LG subject, who almost knew from the linguistic clues such as *posuto* that the woman was asking the man to mail the letter, did not need information such as whether or not the man was dressed like a mailman, or what particular shape the letter was.

Such differences in approach seem to affect the numbers and types of clues each subject group uses. The NLG whose attention is unfocused pays attention to a variety of clues that results in the use of a greater number. The LG whose attention is more or less focused needs to use fewer clues. How do these differences, then, affect the types of clues used by each group?

The comparison of the ranks of highly used clues of the two groups showed that there was a relatively high correlation of 0.70 between them. This indicates that the weight of importance put on the types of clues is basically equal. The three most highly ranked nonlinguistic clues were ACTION, OBJECT and DISCOURSAL (nonlinguistic) clues for both groups. On the other hand, the nonlinguistic clues whose positions in the two ranks varied to some extent were clues concerning the BACKGROUND such as PLACE, PARTICIPANTS, PARALINGUISTIC clues, and WORLD KNOWLEDGE. They seemed to have had greater importance for the NLG than for the LG.

The difference between these two groups of clues can be stated as to whether they are the constituents of the conversation or are external to the conversation.

1. Elements that are the Constituents of a Conversational Discourse

All of the LINGUISTIC CLUES, all the subclasses of BEHAVIOR, DISCOURSAL CLUES, SETTING (when it is the referent)

2. Elements that are External to Conversation

All the subclasses of SETTING (when not referent), WORLD KNOWLEDGE

It is not surprising that the clues in Group one are essential for inferencing. However, the results of the study also indicate that the clues in Group two bear equal importance, especially for the NLG. The NLG relied equally on clues in Groups one

and two, when the LG relied extensively on clues in Group one. In other words, the NLG compensated for the linguistic clues with the clues that are external to the conversation.

Finally, a word on the effectiveness of inferencing and the number of nonlinguistic clue used. As mentioned earlier, the subjects of the NLG who made better inferences were observed to have used more nonlinguistic clues than the less effective guessers, and the subjects of the LG who made better inferences than others used more linguistic clues. This indicates that the number of clues that the subjects use has some relevance to the effectiveness of inferencing.

It is worth noting, at this point, that the roles of the nonlinguistic clues are not altogether equal in the procedures of the LG and the NLG.

For the NLG, the effectiveness of inferencing is related to how many nonlinguistic clues they can make use of. In the extract in the previous section, the subject paid attention to various nonlinguistic clues such as the lady's tone of voice and the relationship between the participants to arrive at the correct inferences. Subjects who did not make use of these clues ended up guessing that the lady was simply handing him a letter.

With the LG, it is more complicated. Because they tend to focus first on the linguistic clues, their hypotheses are greatly affected by what the subjects can obtain from the linguistic source. And when there was an inconsistency between what they perceived linguistically and what they saw nonlinguistically, they tended to stay with what they derived from the linguistic source.

Let us look at an extract of an LG subject who, by relying on the linguistic clues, makes a wrong inference.

She said something about *nihon*, the Japanese language, *namae*, and *bangō*, that's his phone number. So, I think he's asking him to write his name and his phone number. But if I didn't know the words, then it would look like she asked him to write the numbers of the book down because he looked at the book before he started writing. Oh, no! I'm confused. But I'll stick to what I heard. (Laughs.)
(Extract of LG)

She reports that there is an inconsistency between what she has seen from the picture and what she has heard. By sticking to what she thought she heard and neglecting to look closely at more nonlinguistic clues for evidence, she ends up making a wrong inference. This kind of misinterpretation would not happen either if she was proficient enough in her listening ability so that she could comprehend even without the help of nonlinguistic clues, or if she was careful enough to monitor the linguistic clues when they are consistent with the nonlinguistic clues, such as the man's action of looking at the back of the book before writing. In order to prevent such misinterpretation, learners are encouraged to use both linguistic and nonlinguistic clues equally and to arrive at an inference which is consistent with both sources.

CONCLUSION AND IMPLICATIONS

In sum, the inferencing procedures of L2 learners in listening, complicated as it is, involves the use of various nonlinguistic clues by the learners. And the ways these clues are used are not altogether uniform but affected by the learner variables, such as the amount of knowledge of the target language they possess. In the study, the NLG tended to use more nonlinguistic clues than the LG. This indicates that the subjects attempted to compensate for the lack of their linguistic knowledge by using more nonlinguistic clues. And the clues outside of the conversation, such as PLACE, PARTICIPANTS and SITUATION played important roles, especially for the NLG.

At the same time, the effectiveness of their inference seemed to be affected by the number of clues they used. The more number of clues they used, the more effective their inferences became. This implies that the strategy training may be needed for those who are not good at or used to making the most use of the available nonlinguistic sources in reaching correct inferences.

The results of the study has special implications for instruction through video materials. Video, which can provide nonlinguistic clues that support learners' inference, is an effective means of presenting materials that are comprehensible to the learner. It is also an effective means of instructing or sensitizing the learners to utilize those nonlinguistic clues in comprehension.

When showing a video in a classroom, teachers can instruct the learners to try to grasp the overall meaning of the speaker's utterance by paying attention to various clues such as the situation of the conversation, the relationship between the participants, the gestures and the facial expressions of the speaker, and paralinguistic features of the utterance, rather than trying not to miss every single piece of linguistic information. Teachers may, at times, focus on a particular scene from a video and let learners practice guessing the meaning of the speaker's utterance and point out some of the available clues they could have utilized. This kind of activity is helpful in sensitizing the learners to the available clues embedded in the scenes as well as letting them realize that one does not necessarily need to understand every single piece of linguistic information in order to communicate effectively when they rely on other nonlinguistic sources. It might be also helpful in hinting learners that watching and listening to linguistic behavior on video is a good opportunity for them to practice inferencing in conversational settings and to eventually develop the abilities to communicate fluently in their target language despite their linguistic limitations.

This is not to say, however, that using any video in classroom is effective. If the teacher wants to provide materials that make it easy for the learners to infer meaning, it should be clear as to where the conversation is taking place, what the relationships between the participants are, in what situations and for what purposes the conversation takes place and so forth. The body movements and facial expressions of the participants should be natural and expressive. The conversation should be carried out with paralinguistic features, which are authentic enough for the learners to use their inter-

lingual knowledge to identify whether a certain line is a question or a request, or whether it expresses a positive or negative attitude.

Finally, some potential for future research is suggested. In order to arrive at a more complete picture of the role of linguistic and nonlinguistic sources in comprehension, it is necessary to consider the effect of other factors concerning the learner and the input.

Some such factors concerning *the learner* are native language, socio-cultural background (including the amount of socio-cultural knowledge he has about the target culture) and age. The inferencing procedures employed by learners whose native language is, say, Chinese or Korean, may not necessarily be the same as that of those whose native language is English. Children, who do not possess as much knowledge about the world as adults, may not succeed as much as the adults do.

Factors concerning the *input* concern the types of material, such as the amount of visual information it contains, its length, and the variations of the situation. It is not surprising if the inferencing procedures of the learner varies according to whether he is listening to video material containing abundant visual information or listening to an audiotape with the help of pictures or without any visual support. It also depends on the length of the text of the material, whether he is given just a few lines or the whole story.

Extending the study in terms of these factors described above will provide us with a better picture of the inferencing procedures of L2 learners and eventually help make the process of L2 comprehension more complete.

Appendix

Transcription of the Materials

Segment 1

F: *Yan-san.*

Y: *Hai.*

F: *Suimasen ga, chotto onegai shitemo ī desu ka.*

Y: *Hai, nandeshō.*

F: *Otōsan. Tegami.*

S: *Hā, hā.*

(He brings out a letter and hands it to Mrs. Suzuki.)

S: *Hai.*

F: *Kono tegami o posuto ni irete kudasaimasen ka.*

Y: *A, ī desu yo.*

F/S: *Onegai shimasu.*

Y: *Hai.*

(He bumps his head on the laundry pole.)

Segment 2

(Ms. Okada enters with a vase of flowers.)

Y: *A, Ohayō gozaimasu.*

- O: *Ohayō gozaimasu. Yan-san, kono tsukue o tsukatte kudasai.*
 Y: *Hai.*
 O: *Sore kara, kono rokkā o tsukatte kudasai.*
 Y: *Dōmo arigatō gozaimasu.*
 O: *Kami ya enpitsu wa, kono hikidashi no naka ni arimasu.*
 Y: *Dōmo sumimasen. (Takes some pencils out.) Kore desu ne.*
 O: *Hai. A, denwa wa, dochira o tsukatte mo ī desu yo.*
 Y: *Hai, wakarimashita.*

Segment 3

(Mr. Kobayashi and Mr. Hara enter.)

- K: *Yā, ohayō.*
 Y: *Ohayō gozaimasu.*
 K: *Yan-san, chotto kite kudasai.*
 Y: *Hai. Nan deshō.*
 K: *Kono shorui ni Yan-san no jūsho, shimei, seinengappi nado o kakikonde kudasai.*
 Y: *Hai. (Yan picks up one pencil.) Kobayashi-san, kore enpitsu de kaitemo ī desu ka.*
 K: *Ie, pen de kaite kudasai.*
 Y: *Hai, wakarimashita.*

Segment 4

- T: *Okada-san. (Takahashi picks up a file on Okada's desk.) Kore o karitemo ī desu ka.*
 O: *Hai.*
 T: *Kono kami mo ī desu ka.*
 O: *E, dōzo.*
 T: *Ni-mai. (Takahashi rips two pieces of paper.)*

Segment 5

(At the office library. Yan takes several books from the shelves.)

- Y: *Kore dake karite mo ī desu ka.*
 O: *E, nansatsu de mo ī desu yo. Ano, Yan-san, kono nōto ni hon no namae to bangō o kaite kudasai. (She hands him a pen and opens a notebook in front of him.)*
 Y: *Hai, wakarimashita.*

(Yan starts to write as he looks at the back of the book.)

Segment 6

(Mrs. Suzuki brings glasses of barley tea.)

- F: *Mugicha o dōzo.*
 Y: *A, arigatō gozaimasu. (Yan takes a sip.) A, tsumetai. Oishī desu ne.*

Segment 7

- S: *Kore, Yan-san no omiyage da yo.*
 F: *Ara, ma, sore wa dōmo arigatō gozaimasu. Ara, nan deshō.*
 Y: *Dōzo.*
 F: *Sō desu ka. Dewa shitsurei shite.*

(She opens the gift.)

Ma, sutekina ohashi.

Segment 8

(At a shop.)

T: *Kore wa ikaga desu ka. Sutereo desu.*

(Yan listens to the headphones.)

Y: *Un, ī oto desu ne. Taro-kun, dō desu.*

(Taro listens.)

T: *Un, sō desu ne.*

Segment 9

Y: *Kore, ikura desu ka.*

T: *Yon-man go-sen en desu.*

Y: *E. Yon-man go-sen en.*

(He points to another one.) *Kochira no hō ga yasui desu ne.*

T: *Sochira wa sutereo ja arimasen yo.*

Y: *A, sō desu ka.*

Segment 10

(Yan opens the box and takes out a tape recorder.)

M: *Wa. Kore ga yon-man en?*

K: (She picks it up.) *Yasukatta desu ne.*

Y: *Ē.*

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