論　文

Second Language Proficiency and Communication Strategies in L1 and L2

Chiaki IWAI

I. Introduction

In actual social interaction, we often encounter a situation in which we cannot come up with appropriate linguistic forms. Undoubtedly, this difficulty sometimes arises in a first language (L1); however, this is more common in second language (L2) communication. In such a case, we need to attempt to overcome this difficulty in order to achieve a given communication goal. The set of means by which language users try to overcome such ad hoc linguistic problems is called *communication strategies* (Bialystok 1990: 1). There are large areas covered in the study of communication strategies, such as grammatical forms and speech acts. Among other things, second language researchers have placed a main focus on how L2 learners compensate for lexical deficits since Varadi (cited in Bongaerts and Poulisse 1989: 253) first identified and described communication strategies in L2 performance.

Recent studies on communication strategies have been established on the basis of two different traditional approaches: studies in L1 referential communication[1] and taxonomic studies in L2 communication strategies. The primary objectives of studies in L1 referential communication are twofold: One is to clarify how native speakers solve communication problems; and the other is to examine what processes are involved in referential communication. A series of studies was conducted by Krauss and Weinheimer, in which they investigated how interlocutors described abstract figures or color chips and delivered messages to their partners (Krauss and Weinheimer 1964, 1966, 1967). Adopting experimental procedures, Clark and his colleagues later promoted studies in L1 referential communication and examined related processes in L1 communication such as collaborative process and the roles of concealment (Clark and Wilkes-Gibbs 1986, Clark and Schaefer 1987). These studies, however, were "hardly ever referred to in the L2 literature" until recently as Bongaerts and Poulisse (1989) point out (253).

Another branch of studies, which was developed apart from the studies in L1 referential communication, was mainly conducted to identify different communication

strategies used by L2 learners. Blum and Levenston (1978) carried out a pilot study about lexical simplification by Hebrew learners of English. Later, many L2 researchers attempted to categorize communication strategies theoretically. The most prominent and frequently quoted taxonomy of strategies is the one by Tarone (1980, 1981), where she distinguished five main categories of strategies: *paraphrase*, *borrowing*, *appeal for assistance*, *mime*, and *avoidance*. A descriptive taxonomy by Paribakht (1985) was organized on the basis of L2 learners' knowledge of the target language, which includes four main categories: *linguistic approach, contextual approach, conceptual approach,* and *mime*. Bialystok and Frohlich (1980: quoted in Bialystok 1990: 42) made a distinction between L1-based strategies and L2-based strategies, and other varieties of taxonomies in L2 communication strategies were proposed by different researchers.

The most recent research into communication strategies critically reviews inadequacies of traditional taxonomies of L2 communication strategies due to the fact that they are product-oriented and, therefore, scarcely offer information on the cognitive processes underlying the use of strategies. Poulisse (1987) first argued this weakness and mentioned the necessity of developing a new taxonomy that could capture underlying cognitive processes of strategy use. Bongaerts and Poulisse (1989) also indicated the deficit of product-oriented taxonomies, arguing that "taxonomies that contain such distinctions [of functions or properties] fail to capture an important generalization with respect to referential behavior" (254). Bialystok (1990) proposes three criteria for an adequate taxonomy to account for psychological processes: *parsimony, psychological plausibility,* and *generalizability* (112).[2] A new taxonomy of communication strategies satisfying these criteria was advocated by researchers of what is now known as the Nijmegen project in Netherlands.

The present study is a replication of the empirical Nijmegen project. An experiment under tightly controlled conditions was conducted to investigate native Japanese speakers' use of strategies in their L1 and L2 (English) performance, taking their L2 proficiency level into account.

II. Process-oriented Taxonomy

Bialystok and Kellerman first proposed a process-oriented taxonomy in an unpublished manuscript, according to Bongaerts et al. (1987). This is a parsimonious two-strategy taxonomy which consists of a *conceptual* strategy and a *linguistic* strategy. The former is a strategy that "requires manipulation of the attributes of the concept to be referred to" (Bongaerts et al. 1987: 174). Subcategories such as *approximation, word coinage, and circumlocution* (Tarone's taxonomy) in the traditional taxonomy belong to this category. The latter is the case where the L2 learner uses the "L1 morphophonological form of the

label" (*ibid.* 174), and it is analogous to *literal translation* and *language switch* (also Tarone's terms) in the traditional taxonomy of communication strategies.

The conceptual strategy is further divided in two subcategories: *holistic* and *analytic* (Bongaerts and Poulisse 1989: 256). The distinction between these two subcategories originally came from the empirical study by Clark and Wilkes-Gibbs on L1 referential communication, in which they recognized that their subjects tended to describe abstract figures in either a holistic or segmental perspective (Clark and Wilkes-Gibbs 1986: 30). This dichotomy of strategies is based on perspectives stressing psychological recognition of language users; thus, it primarily emphasizes processes and psychological plausibility.

The process-oriented taxonomy has been revised along with a series of experimental studies in the Nijmegen project, and a three-way distinction in the conceptual strategy was made by Kellerman et al. The three components, *holistic, partitive,* and *linear,* are defined as follows:

> The first general strategy, which we shall call holistic, attempted to label the entire shape by associating it to a "real-world" object or to a conventional geometric figure. ... The second general strategy we call partitive; that is, the shape was treated as if it were not in fact a single figure but a complex of smaller and therefore simpler shapes. ... The third general strategy, which we have termed linear, immediately breaks the shape up into its ultimate one-dimensional components (lines, angles, dimensions, spatial relations) and treats the shape as if it were a series of route directions. (Kellerman et al. 1990: 168-169)

Using the process-oriented strategic criteria, researchers at the University of Nijmegen examined the use of strategies by Dutch learners of English with respect to their L2 proficiency (Bongaerts et al. 1987) and also compared their performance in L1 and L2 (Bongaerts and Poulisse 1989). Main discoveries from the proficiency study were: 1) Dutch L2 learners performed a given task very much in the same way as native speakers; 2) among four proficiency groups, the second highest proficiency group alone favored the use of literal or partitive strategy, and the other three groups preferred to use an analogous or holistic strategy, 3) the most important difference between native speakers' performance and L2 learners' performance was observed in quantitative difference in necessary length of time to complete the task and word counts for their performance, and 4) most importantly, the solution of lexical deficits by Dutch L2 learners was not qualitatively different from that of native speakers.

The comparison between Dutch speakers' L1 performance and L2 performance revealed that: 1) the holistic perspective was predominantly preferred over the partitive and linear strategies regardless of the language used; 2) the main difference between L1 use and L2 use was quantitative, as in the preceding study; and 3) in L2 performance, subjects repeated reanalysis of abstract shapes by either maintaining their preferred perspectives or adjusting their perspectives until they came up with available L2 lexis.

Kellerman et al. (1990) displayed the theoretical relation among subcategories of process-oriented strategies, stating their conviction that "the study of communication strategies should reach beyond description to prediction and explanation" (164). Their theoretical framework represents the three perspectives in the category of conceptual strategy as being hierarchically arranged and cyclically applied in the following manner:

L1		L2
If strategy H	then	H > P > L
P		P > L
L		L

(Kellerman et al. 1990: 172. H, P, and L stand for holistic, partitive, and linear, respectively.)

This predicts that if description of an abstract shape is holistically done in L1, the same strategy or hierarchically lower strategies (i.e., partitive, then linear) will be applied. If, on the other hand, the partitive strategy is used in L1, the strategy in L2 will not go beyond the partitive level.

III. The Present Study

In order to test the applicability of the above mentioned process-oriented taxonomic criteria and to investigate native Japanese speakers' performance in L1 (Japanese) and L2 (English) in comparison with Dutch subjects in the Nijmegen project, the following experiment was conducted, modeled after the research method designed by Bongaerts and Poulisse (1989).

1. Method and Hypotheses

A total of 32 freshman students (5 males and 27 females) majoring in International Studies at the university where the present author is affiliated participated in this experiment at the beginning of the Fall Semester, 1994.[3] A task of picture description in the two languages was given at an interval of one week. To divide the subjects into two groups according to their L2 proficiency, *TOEIC* scores (the Test of English for International Communication), which had been administered in May, 1994, were used. This test is designed to measure L2 learners' communication ability in English, so it can be considered suitable as a criterion for the purpose of the group division for the present study. Each of the two groups, the high English proficiency group (HE) and low English proficiency group (LE), consists of 16 subjects, and the group means are statistically different at the significant level of .01 (two tailed *t*-test, t=6.654, SD of HE=85.72, and SD of LE=55.97).

A set of 12 pictures in Figure 1, initially used by Krauss and Weinheimer (1964) and also adopted by Bongaerts and Poulisse (1989), was used for the description task. The experiment was conducted in a language laboratory installed with computer facilities

Figure 1: The abstract pictures used for the description task

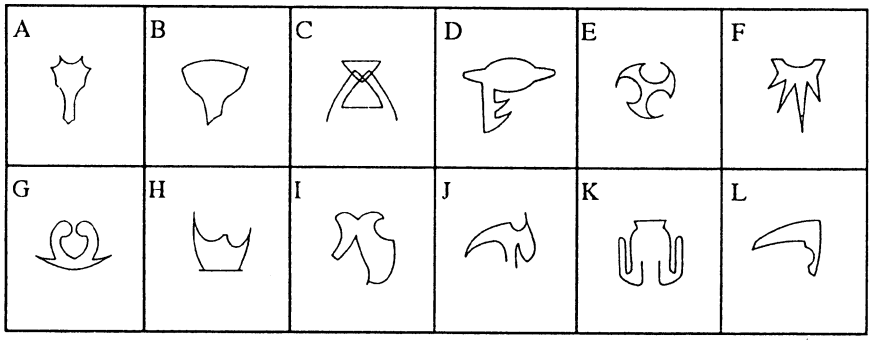

Table 1: Word Counts in Japanese description

	A	B	C	D	E	F
HE	17.8	16.3	18.4	19.6	16.3	16.6
LE	16.6	16.5	18.3	15.3	14.9	16.3

Table 2: Word Counts in English description

	A*	B	C*	D	E*	F*
HE	17.0	12.1	17.5	15.3	17.4	16.9
LE	8.3	8.8	9.8	9.0	11.1	8.9

N=16 in each group. The asterisks next to the picture identification letters indicate significant group differences (two-tailed *t*-test) at the level of $p<.05$.

Table 3: Comparison of strategies in Japanese and English

	H	HP	P
JPN	17 (8.9)	69 (35.9)	73 (38.0)
ENG	62 (32.3)	41 (21.4)	55 (28.6)

N=32. $\chi^2=35.289$ $p<.01$
Figures in the parentheses are percentages.

Table 4: Comparison of two groups in Japanese description

	H	HP	P
HE	4 (4.2)	32 (33.3)	38 (40.0)
LE	13 (13.5)	37 (38.5)	35 (36.5)

N=16 in each group
$\chi^2=4.511$ n.s.

Table 5: Comparison of two groups in English description

	H	HP	P
HE	26 (27.1)	23 (24.0)	31 (32.3)
LE	36 (37.5)	18 (18.8)	24 (25.0)

N=16 in each group
$\chi^2=3.089$ n.s.

Table 6: Strategies across languages

JPN ENG	HE	LE
HP = HP	12	9
H = H	3	7
P = P	10	7
HP ∋ H	20	19
H ∋ H	1	0
P ∋ P	14	15

The equal sign means that the same strategies were used in both language sessions. The sign ∋ indicates the strategies used to describe pictures in English are covered in the strategies to do so in Japanese.

and ordinary LL facilities. The pictures were shown through a computer monitor: first the entire collection of pictures and then picture by picture for descriptions. The description time for each picture was limited to a maximum of one minute. The participants were informed that their descriptions would be recorded on audio tapes so that native speakers could listen to them later and check if they could identify the intended pictures.

The description task was repeated three times in each language version. Nine pictures, which were ordered randomly, were requested to describe in each session. Three pictures were actually distractors, and six pictures (A to F in Figure 1: for the sake of convenience of the following discussion, they are displayed in this order) were used for the analyses of the present study. Later, when the task was completed, it was observed that most students' responses to each picture were very similar in the three repetitive description tasks; therefore, responses in the third session were principally used as representative data. The recordings in both languages were transcribed verbatim later. Both quantitative and qualitative interpretations of their responses are possible; however, the present study will mainly report the results of quantitative analyses, based on a total of 384 protocols (i.e., 32 participants x 6 pictures x 2 languages). Prior to the experiment, the following hypotheses were formulated:

1) Judging from past studies, the holistic strategy will be used predominantly over the partitive strategy in both HE and LE groups, regardless of language.

2) In the English description, the subjects in the LE group will be forced to use strategies which are different from the ones they use for the Japanese description, more frequently than the HE group, because they may not be able to say what they want to say due to their lower English proficiency.

3) The hierarchy of strategies may be task dependent. In other words, strategy use may vary according to the kind of picture the subjects try to describe. This may not be influenced by language proficiency.

2. Results and Discussion

1) Comparison of Word Counts

First, the total number of words used in both the Japanese session and the English session was counted to assess the students' utterances quantitatively and to see if there is any group difference. It is pointless to compare word counts in Japanese and English directly because they are structurally different languages. Thus, they were compared between the two groups and two languages separately (Tables 1 and 2). The following examples illustrate the method of counting words.[4]

(e.g. 1) Japanese description

eeto ... genshijidai-no-hito-ga motteiru tetsu-no-boo-no yooni, shita-ga boo-de ue-ga gizagizashita kanji-no-mono desu (LE 15: A)

(Well, it is like a bar that people in the primeval age had, and the down part is like a bar and the upper part is notched.)

(e.g. 2) English description
... this picture consists of two parts...nn... the ... upside parts is looks like cloud... or UFO .. or erm... Saturn ... and the downside of this picture ... is.. looks like a key (HE 3: D)

The underlined words in the above examples are included in the word counts. In case of Japanese, postpositions and a copula *-desu* were excluded from the word counts. Likewise, articles, the copula *be*, and prepositions were not counted in the English version. Hesitation, repetition, and inaudible words are all excluded.

As shown in Table 1, the averages of word counts in the Japanese description ranged from approximately 15 words to 19 words for the six pictures, and no group difference was observed for any of the pictures. This result was expected before the experiment was conducted due to the fact that their Japanese proficiency, regardless of their English proficiency, would not differ. The comparison in the English version, however, revealed significant differences (computed by two-tailed *t*-test) for four of the six pictures. For all pictures, the utterances by the HE group were about twice as long as those by the LE group. This finding indicates that the subjects in the HE group could expand the description of the pictures far better than subjects in the LE group.

2) Comparison of Strategy Use

The next analysis, which is the main theme of this study, concerns the strategies. The strategic criteria devised by Kellerman et al. (1990) and cited above were used for the analysis of the protocols of each subject. In addition to the holistic and partitive distinctions, two subtypes of these two strategies were marked: analogical and geometrical; hence, there are four types of strategies used for the analysis, which are abbreviated as H1 (holistic-analogical), H2 (holistic-geometrical), P1 (partitive-analogical), and P2 (partitive-geometrical). The linear strategy was not included because its occurrences were extremely rare and also because in a strict sense they were not necessarily *ultimate one-dimensional components* (see the above mentioned definition by Kellerman et al.) even when they appeared. The following exhibit examples of the four strategies:

(e.g. 3) Japanese Description
kore-wa nn.. jyoro-no-yoona katach, ah...wain gurasu-no-yoona katach-o shiteimasu. shita-ni motsu-
H1
tokoro-ga atte...nnn... ue-ni chotto... migi-no-hoo-ni sen-ga haitte-iru (LE 4: B)
P1 P2
(This is a shape like a watering can... like a shape of a wine glass. There's a grip downward, and there is a line in the upper right.)

(e.g. 4) English Description

picture 12 erm... picture 12 is circle and inside this three another circle... look like the ro.... boomerang
H2 P2 H1 (HE 7: E)

In this way, all utterances were analyzed, and the results are summarized in Tables 3, 4, and 5. The figures in these tables represent the number of pictures which are: 1) described with only a holistic perspective (H); 2) with a holistic perspective followed by a partitive perspective (HP); and 3) a partitive perspective alone (P). Example 3 above, for instance, is included in the HP category. Any other descriptive patterns like Example 4 (HPH) are excluded from these tables.

There is a remarkably significant difference between the strategies used in the Japanese description and in the English description ($p<.01$ tested by Chi-square statistics). In Japanese, the pictures were described mainly by a combination of holistic perspectives and partitive perspectives, or by partitive perspectives. In the case of English, on the other hand, reliance on holistic perspectives was much higher. The finding of this analysis, therefore, does not support the above mentioned hypothesis 1), and the Japanese participants in this study showed somewhat different patterns in comparison with the Dutch learners of English in the Nijmegen project, who used the holistic perspective predominantly in either English or Dutch.

In spite of these overall language differences, no significant differences were observed between the HE group and the LE group in both the Japanese session and the English session (Tables 4 and 5); thus, hypothesis 2) was also rejected. Even though a quantitative difference measured by word counts was observed (see the preceding section), language proficiency did not influence the strategy choices. This finding is analogous to the results obtained in the Nijmegen project. That is, language proficiency leads to quantitative differences in utterances, but not to differences in strategy choices.

To examine the ratios of the same strategies which were applied across languages, the total occurrences of such cases were counted and summarized in Table 6. Of the total 96 protocol dyads in each group (i.e., 16 subjects x 6 pictures), 25 cases (26.0%) in the HE group and 23 cases (24.0%) in the LE group were exactly the same between two language sessions. Furthermore, about one third of strategies in the English session, 35 cases (36.5%) in the HE and 34 cases (35.4%) in the LE, were covered by the strategies used in Japanese. No statistically significant difference was obtained between the two groups.

Finally, the third hypothesis was partially supported by the analysis from the present study. Among the six pictures, the holistic-analogical strategy was preferred to describe pictures A and B by all the subjects regardless of the language used, while the partitive-analogical strategy was often applied to pictures D and F. The partitive-geometrical

strategy frequently appeared in talking about pictures C and E, which have obvious geometric features of a triangle(s) and a circle(s), respectively. The statistical evidence is not shown here due to the lack of space; however, the relation between strategy choices and the nature of a task needs to be investigated further.

IV. Conclusion

Using the process-oriented taxonomy of communication strategies proposed in successive studies of the Nijmegen project, oral production in Japanese and English by native Japanese speakers, whose English proficiency levels are different, was comparatively examined. These criteria based on psychological perspectives presented a powerful means to compare the products of structurally different languages. The findings of psychological recognition and linguistic realization in the preceding section would have been missed if a traditional taxonomy had been applied.

The main results obtained from this study are: 1) Japanese learners of English with higher English proficiency can perform the picture description task quantitatively better, but this does not necessarily mean that their strategy choices are different from those with lower English proficiency (Tables 1,2, 4, and 5); 2) the patterns of strategy use were not the same across languages (Table 3); 3) about one fourth of strategies were parallel between the two languages, and about one third of strategies used in the English session were contained in the Japanese session (Table 6); and 4) the strategy choice seems to depend on the task per se, and this needs to be tested further.

The present study dealt with just quantitative aspects of strategy use, and the author of this study recognizes the necessity of qualitative analysis of the acquired data in future study. Furthermore, the experiment in this study was carried out under strictly controlled conditions. The choice of communication strategies in a more natural setting or authentic conversations, needless to say, present more complicated patterns. Further investigations along with methodological sophistication are required to clarify the processes of strategy use in future studies.

Notes

1) Referential communication refers to a situation "in which one participant in a conversation produces an utterance that is designed to enable the other participant(s) to infer correctly what events, beings, abstract concepts, or objects the speaker is referring to" (Bongaerts et al. 1987: 171).

2) These criteria were originally stated by Bialystok and Kellerman in 1987 according to Bialystok (1990). The original paper was unobtainable to the author of the present study.

3) There were originally 50 participants. However, eighteen of them were eliminated because their data in either the Japanese or English version were missing and/or their TOEIC scores were unavailable.

4) The number and letter in the parentheses following the transcript indicate the subject identification number and the picture identification letter, respectively. HE and LE stand for the groups of higher English proficiency and lower English proficiency.

Bibliography

Bialystok, E. 1990. *Communication Strategies: A Psychological analysis of Second-Language Use.* Cambridge, Mass.: Basil Blackwell.

Bialystok, E. & Frohlich, M. 1980. Oral communication strategies for lexical difficulties. *Interlanguage Studies Bulletin*, 5, 3-30.

Blum, S. & Levenston, E. A. 1978. Universals of Lexical Simplification. *Language Learning*, 28(2), 399-415.

Bongaerts, T., Kellerman, E., & Bentlage, A. 1987. Perspective and proficiency in L2 referential communication. *Studies in Second Language Acquisition*, 9, 171-200.

Bongaerts, T. & Poulisse, N. 1989. Communication Strategies in L1 and L2: Same or different? *Applied Linguistics*, 10(3), 253-268.

Clark, H. H. & Wilkes-Gibbs, D. 1986. Referring as a collaborative process. *Cognition*, 22, 1-39.

Clark, H. H. & Schaefer, F. E. 1987. Concealing one's meaning from overhearers. *Journal of Memory and Language*, 26, 209-225.

Kellerman, E., Ammerlaan, T., Bongaerts, T. & Poulisse, N. 1990. System and hierarchy in L2 compensatory strategies. In R. C. Scarcella, E. Anderson, & S. Krashen (eds.), *Developing Communicative Competence in a Second Language.* New York: Harper and Row.

Krauss. B. M. & Weinheimer, S. 1964. Changes in reference phrases as a function of frequency of usage in social interaction: a preliminary study. *Psychonomic Science*, 1, 113-114.

Krauss. B. M. & Weinheimer, S. 1966. Concurrent feedback, confirmation, and the encoding of referents in verbal communication. *Journal of Personality and Social Psychology*, 4(3), 343-346.

Krauss. B. M. & Weinheimer, S. 1967. Effect of referent similarity and communication mode on verbal encoding. *Journal of Verbal Learning and Verbal Behavior*, 6, 359-363.

Paribakht, T. 1985. Strategic competence and Language proficiency. *Applied Linguistics*, 6, 132-146.

Poulisse, N. 1987. Problems and solutions in the classification of compensatory strategies. *Second Language Research*, 3, 141-153.

Tarone, E. 1980. Communication strategies, foreigner talk, and repair in interlanguage. *Language Learning*, 30, 417-431.

Tarone, E. 1981. Some thoughts on the notion of communication strategy. *TESOL Quarterly*, 15, 285-295.