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# A Comparison of Two Different Vocabulary Learning Strategies: Guessing Word Meanings from Context and Rote Memorization with L1 Equivalents

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## ABSTRACT

Learners who learned vocabulary items by guessing their meanings from context and those who learned them through memorizing them with given L1 equivalents were tested in three different dimensions: which learners better acquired the items covered in the instruction, which learners coped better with unknown items not covered in the treatment, and which learners better stored the covered items in long-term memory. The results indicated no significant difference in the comprehension and the short-term retention of the instructed items, clear superiority of the guessing strategy in developing skills for coping with new items, and an advantage for memorization with L1 equivalents for long-term storage of the instructed items. How the proficiency levels of learners related to the effectiveness of each strategy was also explored. The implications of the findings for teaching are discussed.

## 1. Introduction

Vocabulary expansion is of crucial importance, especially to learners of intermediate level. In Japan, this is partly because the vocabulary range that universities and colleges require for their entrance far exceeds the vocabulary high school students encounter in their formal classroom. If students study English exclusively through one of the course books

authorized by the Education Ministry, which the writer believes is the case in many schools, the number of vocabulary items they encounter during the six years of learning English at junior and senior high schools is no more than 2950, being strictly regulated by the Course of Study, whereas the size of the vocabulary required for passages in university entrance examinations is usually estimated to be from 5000 to 7000.

One of the popular measures to bridge this wide gap, employed by the students, and sometimes even encouraged by teachers, is using bilingual lists of words. Numerous word books are sold at book stores claiming that they “feature the words that appear in entrance exams”. Not wondering at all whether there are actually such special words that are frequently used in those exams, many students can be observed memorizing those bilingual pairs not only in schools but also on trains, buses and subways. Typically, these word books contain selected vocabulary items side by side with their L1 equivalents without any context. In many cases, in order to facilitate memorization by the learner, the number of L1 equivalents for each English word entry is limited to one or two.

Not only in outside-the-coursebook context but also in daily preparation for reading classes, this word list strategy is widely employed by students. Typical “preparation” seems to be as follows: Students copy the new words which are printed at the bottom of every page of the coursebook into their notebooks. Using a bilingual dictionary, they write a couple of L1 equivalents that come at the top or are printed in bold letters under the entries, giving little consideration to how the words are used in the text.

Unfortunately, however, it is possible that this word book/list strategy has rather serious drawbacks if employed without care, because the way we learn affects the way we can use the knowledge. Some of the defects derive from the fact that most often these word books/lists deal with words in isolation and others because the lists are bilingual. First, as is well known, words very much depend on the context for the meanings.

Smith (1985) takes *Man the boats* and *Man is gregarious* for example to illustrate that "it looks as if the sentences are giving meaning to the words" (68). Using these word books would give a naive learner the wrong impression that bottom-up processing is the only strategy in reading. Second, these lists tend to make students think that there is always a one-to-one correspondence between words in the L1 and L2, which often is not the case, especially when the two languages are very different from each other, e.g., English and Japanese. It is this fact that made Twaddell to go so far as to call memorizing bilingual word pairs "an educational atrocity" (1973:66). Third, the bilingual word list strategy assumes that L2 should be understood through translation, and even encourages it. It would be rather difficult for a learner who always depends on translation for comprehending the meaning of L2 to become an independent reader with practical reading speed. For this reason, the present writer takes the same position as Twaddell when he calls for "a complete boycott on checking comprehension by calling for translational equivalents" (1973:73).

Added to these drawbacks, memorizing individual words has a clear limitation deriving from the frequency distribution of vocabulary of the English language. As is well known, there exist too many words that readers encounter too infrequently. According to Kucera and Francis (1967), who analyzed fifty 2000-word passages, 56-80 percent of the words in each text occurred only once in that text. Clearly it is not a wise strategy for a learner to try to memorize all these low-frequency words individually.

What alternatives do we have? According to Nation (1982), vocabulary learning strategies can be classified into two kinds: direct vocabulary learning and indirect vocabulary learning. The former takes place if "a conscious effort is made to learn vocabulary" whereas in the latter case, "new words are learned incidentally while reading or listening, usually as the result of information provided by the context".

Furuya (1989) empirically compared direct and indirect vocabulary teaching in terms of short and long-term retention rates. For two weeks, one group of students were taught new words directly, by means of word sheets with synonyms, antonyms, and derivatives of them, while the other group of students were taught the same words indirectly, using word sheets on which the words were presented in context without any explanations. The result of his experiment indicated no significant difference in terms of short-term retention, but favored indirect teaching in the long-term retention test administered two weeks after the end of the treatments. He attributed this superiority of indirect teaching to the fact that the words were presented in context.

Jenkins et al (1989) experimented with instruction in individual word meanings and instruction in deriving word meaning in an L1 teaching situation. In acquiring the words dealt with in the treatments, the subjects who were taught new words individually performed better than those who were trained to derive meaning. On the other hand, the groups trained to derive meaning significantly outperformed the groups taught individual word meanings in deriving the meanings of words not treated in the instruction.

Nation suggests that once learners have about two or three thousand words of vocabulary, they are able to use their skills of reading to make intelligent guesses of the meanings of unfamiliar words in context (1990: 160). This size of vocabulary is exactly what an average student in the 2nd or the 3rd year of high school is supposed to have. However in Japan, as Shizuka (1990) points out, there is little evidence that the strategy of guessing word meanings from context is taught systematically in high school classrooms. This seems to be because the guessing strategy is outshone by the a priori conviction held by many teachers and students that words are to be learned in word books and word lists.

When discussing learning strategies, however, we have to bear in mind that students' proficiency levels may work as an important variable. In

a book reviewing the literature on learning strategies, O'Mally and Chamot (1990) review a study which attempted to investigate learning strategies used by foreign language students at high school and college levels (Chamot et al. 1987). Sixty-seven high school Spanish students and thirty-four college Russian students were interviewed on how they approached nine different language tasks. One of the objectives of the study was to determine differences in strategy use between beginning level and intermediate or advanced level students, and the results indicated that students at the beginning levels relied most on repetition, translation, and transfer, whereas more advanced students relied most on inferencing, though without abandoning familiar strategies such as repetition and translation.

Hence, when comparing the effectiveness of guessing from context and rote memorization with L1 equivalents, how students' proficiency levels relate to the effectiveness must also be investigated.

## **2. The Study**

### **2.1. Research Questions and Hypotheses**

The purpose of the present study is to explore the possibility of guessing word meanings from context as a means of vocabulary expansion by comparing it with the more prevalent strategy of memorizing new words with their L1 equivalents without context. The following research questions are proposed:

- (1) How effective is guessing word meanings from context as a method of vocabulary comprehension compared with memorizing given L1 equivalents of the words?
- (2) Do students improve in deriving word meanings from context by being encouraged and trained to guess word meanings from context?
- (3) How well are the word meanings derived from context, compared with those memorized in the form of L1 equivalents, stored in

students' long-term memory?

- (4) How does students' proficiency level relate to the three questions above?

In attempting to answer these research questions, the following hypotheses are posed. Hypotheses 1-3 are concerned with research questions (1) and (4), Hypothesis 4 with research question (2), and Hypothesis 5 with research question (3).

- H1 Overall, word meanings are as well comprehended and retained in short-term memory by guessing them from context as by memorizing them with given L1 equivalents.
- H2 High proficiency students perform somewhat better at guessing word meanings from context than at memorizing them with their L1 equivalents.
- H3 Low proficiency students perform somewhat better at memorizing word meanings with their L1 equivalents than at guessing them from context.

Previous studies on vocabulary teaching in L2 teaching context indicate that there is no significant difference between direct and indirect teaching groups (Furuya 1989). However, because studies in learning strategies suggest that the ability of inferencing is one of the factors that make high proficiency learners what they are, it is predicted that high proficiency students are better at guessing than at memorizing and that low proficiency students are better at memorizing than at guessing.

- H4 Overall, training in guessing word meanings from context contributes to improving students' skills in deriving meanings of new vocabulary items from context.

Improvement in the ability of deriving meanings was observed in the L1 classroom settings in Jenkins et al (1989). It is predicted that the same holds true in the L2 teaching context. However, because we do not have sufficient knowledge to make a prediction as to what role proficiency plays in guessing training, it remains to be explored on a post hoc basis

whether the effect of training varies in relation to proficiency levels.

H5 Overall, word meanings derived from context are better stored in long-term memory than those provided by L1 equivalents.

As Furuya (1989) indicates, it is assumed that context will help students retain word meanings. However, because the relation between proficiency and long-term memory is not known well enough, no assumption is made in relation to proficiency levels. Post hoc analysis will be carried out to see if any difference is observed in relation to proficiency levels.

## **2.2. Subjects**

The subjects are 54 first-year students, all 15-16 year-old females, at Otsuma Tama High School. They have been learning English for approximately three and half years, the last six months from the present writer, and are now at lower intermediate level. It was confirmed by interviews that none of them had received any systematic training in guessing word meaning skills. They belong to two classes which are considered to be different in terms of English proficiency, one of the classes belonging to "English Course", and the other to "General Course".

A receptive proficiency test was given in order to divide the subjects into two homogeneous groups. The test, a part of the Pre-PET TEST by Cambridge Examination Development Unit administered in 1988, consisted of fifty question items; twenty sentence-level ones and thirty discourse-level ones (see Appendix 1). Every two students who got an identical or nearly identical score on this test were matched and then, randomly, one was put into the experimental group and the other into the control group. After eliminating those who either did not complete one or more sections of the experiment, or who later turned out to have been already familiar with one or more target vocabulary items described in the following sections, 34 students in each group were retained.

Based on the pre-test scores, the 68 subjects were divided into high,



medium, and low score groups in the ratio of 18 : 32 : 18 (=27 : 46 : 27) . For the purpose of attaining a balanced design, 18 subjects were randomly selected from among 32 medium score subjects. Thus, 54 subjects, 9 in each subgroup, were finally retained to be included in the analysis. Means and standard deviations of the pre-test, at each proficiency level, are shown in Table 1. K-R 21 was .654 for this test.

Table 1 Means and standard deviations of pre-test at three proficiency levels

		High	Medium	Low	Overall
Control	Mean	37.70	29.80	23.60	30.37
	SD	1.13	2.92	2.66	5.63
Experimental	Mean	36.20	29.20	22.10	29.17
	SD	2.39	2.14	4.43	5.90

Note. Maximum score=50, n= 9 , N=54

An analysis of variance (ANOVA) was carried out to confirm the homogeneity of the two groups at each proficiency level. The only factor that was statistically significant was between the different proficiency levels (see Table 2) .

Table 2 Two-way ANOVA of pre-test

Source	SS	df	MS	Fo	F
Proficiency A	1791.21	2	895.60	114.83	p< .01
Treatment B	19.44	1	19.44	2.49	NS.
A×B	2.43	2	1.22	0.16	NS.
W	374.36	48	7.80		
Total	1813.08	53			

## 2.3. Material

### 2.3.1. Selection of reading passage

A reading passage was taken from Lesson 12 in Hirano et al., *Crown English Series I New Edition*, the course book the subjects were using on a daily basis. The passage, yet to be read in class, was presumed to be appropriate for the present study in terms of structure because it did not contain any structure which was completely new to the subjects, and also in terms of vocabulary because it was so densely packed with new words that it was assumed to be almost incomprehensible without unfamiliar words being pre-taught. Few subjects were expected to have read this lesson yet because it was three lessons ahead of where they were at the time of the experiment. The passage, about the picture of the universe described by Hawking, was shortened and adapted by the present writer so that most of the unknown vocabulary items it contained were the target words used in this experiment (see Appendix 2 for the original version and Appendix 3 for the adapted version).

### 2.3.2. Selection of target words

Eleven words in the passage, considered by the writer to be crucial for the comprehension of the text and to be unknown to the subjects, were selected as the target words. They consisted of five nouns, two verbs, and four adjectives (see Table 3).

Table 3 Target vocabulary items

Parts of Speech	Vocabulary Items
Nouns	eclipse/horizon/plate/rubbish/sphere
Verbs	describe/orbit
Adjectives	infinite/obvious/ridiculous/vast

### 2.3.3. Word Sheets

For the purpose of creating two different vocabulary learning situations, two different word sheets were developed. On Word Sheet A, the eleven target words were presented in alphabetical order in one to three sentences that provided non-defining but relatively rich contexts for each word. Each context was written by the present writer to make it relatively easy for the students to guess the meanings of the target words and was accompanied with hints in the L1 that would facilitate the guessing process. Of the eleven context clues, three were of Experience Clue type, three were of Inference Clue type, three were of Contrast Clue type, and two were of Synonym or Restatement Clue Type, following the classification by Hirano (1983) (see Appendix 4 for Word Sheet A).

Word Sheet B was intended to provide a typical vocabulary learning situation that Japanese high school students, depending on bilingual dictionaries or word books, encounter. The twelve items were presented, again, in alphabetical order, not in sentences but with their parts of speech and their L1 equivalents. The equivalents were taken from *Taishukan's Genius English-Japanese Dictionary*, one of the commonly used bilingual dictionaries among high school students in Japan. The first three meanings expressed in Japanese following the word entries were mechanically copied from the dictionary, whether or not the meanings were of relevance to the reading text, simulating the behavioral pattern of not a few high school students (see Appendix 5 for Word Sheet B).

### 2.3.4. Test I

Test I was a semi-fixed ratio deleted cloze test made from the reading passage described in 2.3.1. Leaving the first sentence intact, every ninth word was deleted for a total of 35 blanks. If the ninth word was one of the target words, the eighth or the tenth word was deleted. Deleting target words and thus requiring the subjects to produce them was avoided because the present study was mainly concerned with learner's recogni-

tion skills. This test was designed to measure the subjects' comprehension and retention of the meanings of the target words they learned in Word Sheet A or B. In the 333-word-long passage, 23 words were assumed to be unknown, which means approximately one out of 14 words in the passage was unknown to the subjects. Word Sheet A or B provides, in their own ways, the meanings of 16 of the 23 unknown words. Moreover, the words on Word Sheet A or B were presumed to be essential, in terms of content, to the comprehension of the topic discussed in the passage. Therefore it might be reasonably claimed that it was extremely difficult to comprehend the passage without knowing the target words. For this reason, how well the subjects filled in the blanks was assumed to reflect how well they had acquired the target words in the prereading stage (see Appendix 6 for Test I).

### **2.3.5. Test II**

Test II consisted of 11 guessing-from-context items which were taken with some modifications from Ediger et al (1989) and Zukowski/Faust et al (1982). Each exercise item included one underlined word, the meaning of which was to be guessed and written in L1. As a result of the writer's intention to choose those items with rich contexts, all the eleven items happened to include Synonym or Restatement Clue, using the classification by Hirano (1983). Test II was designed to measure the subjects' ability to derive word meanings from context (see Appendix 7 for Test II).

### **2.3.6. Test III**

Test III was a memory test of the target words learned in Word Sheet A or B. The subjects were required to write the meanings of the words in L1.

## 2.4. Procedure

For the first 15 minutes, the subjects were allowed to work on Word Sheets, the experimental group on Word Sheet A and the control group on Word Sheet B respectively. The subjects in the experimental group were instructed to try to guess the meanings of the underlined words, while the subjects in the control group were instructed to "try to memorize the meanings of the words". Subjects of both groups were informed at the beginning of the session that after 15 minutes they would have their Word Sheets collected and would be given a "reading comprehension test of a passage containing these words". All of them were told to circle any of the target words which they were already familiar with. Subjects who circled any were excluded from the analysis.

After the 15 minutes, the word sheets were collected and Test I and II, printed on the same sheet of paper, were handed out. The subjects were allowed to work on the tests approximately for the remaining 30 minutes of the period. In Test I, they were required to fill in the blanks with English words which they thought were the most appropriate. Since the subjects were not familiar enough with the format of a cloze test, it was emphasized that words were deleted almost regularly and that it was not the case that only "big words" were deleted. In Test II, they were instructed to "write the meanings of the underlined words in Japanese". Observation by the writer indicates that all the subjects had sufficient time to finish both tests. After Test I and II were completed, the question sheets as well as the answer sheets were collected so that reviewing the target words might be nearly impossible.

Test III was given, without notice, two weeks after Test I and II were administered. It was unlikely that any of the subjects had reviewed the meanings of the target words because, though some of them might have noticed that those words were taken from a lesson in their course book, they had devoted themselves to preparation for examinations which had nothing to do with that lesson and which had lasted until the day before

Test III was administered. It took less than five minutes for the subjects to complete Test III.

## 2.5. Scoring

The three tests were scored solely in terms of meaning, disregarding any formal problems like grammar or collocation. In Test I, as we were specifically concerned with the subjects' comprehension of the target words, the basic criterion for scoring was whether the subject could be assumed to be reading with the proper knowledge of the target words. In Test II, as our interest was in the subjects' ability to derive meanings of new words, the criterion was to what extent the subject's answer approximated the real meaning of the underlined word, not how well the answer fitted in that particular context. In Test III, parts of speech in the subjects' answer were disregarded. Following these principles, the three tests were first marked in the following graded scale:

- (1) An answer was awarded full credit if it was acceptable in terms of meaning.
- (2) An answer was awarded partial credit if it was marginally acceptable in terms of meaning.
- (3) An answer was awarded no credit if it was unacceptable in terms of meaning.

After the marking, the following two scores were computed:

Strict Score: the number of answers with full credit multiplied by 2.

Generous Score: the number of answers with full credit multiplied by 2 plus the number of answers with partial credit.

Thus, the strict score reflected subjects' ability to arrive at correct answers, whereas the generous score reflected their ability to answer at least acceptably.

## 2.6. Results

### 2.6.1. Test I

Table 4 shows the means and standard deviations of Test I, computed by the two scoring systems. Reliability coefficients, computed using K-R 21 formula, were .934 and .958 for strict and generous scores respectively.

Table 4 Means and standard deviations of Test I at three proficiency levels

		High	Medium	Low	Overall
STRICT SCORE					
Control	Mean	30.40	22.00	22.40	24.90
	SD	5.79	6.32	8.52	7.30
Experimental	Mean	32.20	26.20	20.20	26.20
	SD	7.45	5.61	9.11	9.74
GENEROUS SCORE					
Control	Mean	32.40	25.00	23.70	27.03
	SD	6.36	7.03	8.57	7.67
Experimental	Mean	34.80	28.20	22.00	28.33
	SD	7.60	5.95	9.66	10.20

Note. Maximum score=70, n= 9, N=54,

A two-way ANOVA revealed that only the main effect for proficiency was statistically significant by both scoring systems; the main effect for treatment and the interaction were non-significant (see Table 5).

The correlation coefficients (corrected for attenuation) between the pre-test and Test I are shown in Table 6. They are all statistically significant at  $p < .001$ . By both scoring systems, the pre-test and Test I scores are moderately correlated with each other in both groups, the

Table 5 Two-way ANOVA of Test I : proficiency  $\times$  treatment

Source	SS	df	MS	F <sub>o</sub>	F
STRICT SCORE					
Proficiency A	958.08	2	479.04	9.10	$p < .01$
Treatment B	21.66	1	21.66	0.41	NS.
A $\times$ B	94.08	2	47.04	0.89	NS.
W	2528.19	48	52.67		
Total	1073.82	53			
GENEROUS SCORE					
Proficiency A	1071.75	2	535.87	9.19	$p < .01$
Treatment B	22.81	1	22.81	0.39	NS.
A $\times$ B	62.19	2	31.10	0.53	NS.
W	2798.35	48	58.30		
Total	1156.75	53			

Table 6 Correlation coefficients (corrected for attenuation) between pre-test and Test I

	Strict Score	Generous Score
Control	.589**	.581**
Experimental	.678**	.682**

\*\* $p < .001$ 

overlap in the experimental group (approximately 46%) being higher than that in the control group (approximately 34%).

### 2.6.2. Test II

The means and standard deviations of Test II are shown in Table 7. K-R 21 for this test were .787 and .789 by strict and generous scores respectively.



Table 7 Means and standard deviations of Test II at three proficiency levels

		High	Medium	Low	Overall
STRICT SCORE					
Control	Mean	5.77	2.00	2.88	3.55
	SD	4.04	1.33	1.91	2.95
Experimental	Mean	6.88	4.66	3.77	5.10
	SD	2.13	2.30	2.73	2.95
GENEROUS SCORE					
Control	Mean	6.11	2.11	3.77	4.00
	SD	3.98	1.19	2.19	3.04
Experimental	Mean	7.88	5.44	4.33	5.88
	SD	1.79	2.49	2.44	3.01

Note. Maximum score=22, n=9, N=54

A two-way ANOVA revealed the main effects for proficiency and treatment were both statistically significant and the interaction was of no significance, by both scoring systems (see Table 8). An F-test was carried out and revealed that the treatment factor was significant at medium proficiency level ( $F_0=7.90$ ,  $p<.01$ ), but not significant at high proficiency level ( $F_0=2.25$ , NS.) and at low proficiency level ( $F_0=0.22$ , NS.).

### 2.6.3. Test III

The means and standard deviations of Test III are shown in Table 9. Since all the answers to question items in this test were either acceptable or unacceptable, i.e., no subject came up with marginally acceptable answers, the scores were identical by both scoring systems. K-R 21 for Test III was .903.

A two-way ANOVA revealed that only the main effect for treatment

Table 8 Two-way ANOVA of Test II : proficiency  $\times$  treatment

Source	SS	df	MS	F <sub>o</sub>	F
STRICT SCORE					
Proficiency A	107.82	2	53.91	8.29	$p < .01$
Treatment B	32.57	1	32.57	5.01	$p < .05$
A $\times$ B	8.38	2	4.19	0.64	NS.
W	312.15	48	6.50		
Total	148.77	53			
GENEROUS SCORE					
Proficiency A	114.70	2	57.35	9.20	$p < .01$
Treatment B	48.05	1	48.05	7.71	$p < .05$
A $\times$ B	17.36	2	8.68	1.39	NS.
W	299.28	48	6.24		
Total	180.11	53			

Table 9 Means and standard deviations of Test III at three proficiency levels

		High	Medium	Low	Overall
Control	Mean	2.55	2.00	0.66	1.74
	SD	2.79	2.10	1.33	2.62
Experimental	Mean	0.66	0.66	0.22	0.51
	SD	1.33	1.88	0.64	1.26

Note. Maximum score=11, n=9, N=54

was significant, the control group scoring higher than the experimental group ( $F_0=6.16$ ,  $p < .05$ ). At a closer examination, the treatment effect was significant only at high proficiency level ( $F_0=4.95$ ,  $p < .05$ ).

### 3. Discussion

The results raise several points to be discussed. First of all, no signifi-

Table 10 Two-way ANOVA of Test III : proficiency  $\times$  treatment

Source	SS	df	MS	Fo	F
Proficiency A	13.35	2	6.67	2.04	NS.
Treatment B	20.20	1	20.20	6.16	$p < .05$
A $\times$ B	4.82	2	2.41	0.74	NS.
W	157.41	48	3.28		
Total	38.38	53			

cant difference in the Test I scores according to the main effect of treatment is supportive of Hypothesis 1, which predicted no difference in comprehension and retention of target words between guessing-from-context strategy and memorizing-word-list strategy.

However, there are several factors which make it difficult to interpret the result of Test I. First, it must be admitted that the different treatments, which lasted for about 15 minutes, might have been too short to create any substantial differences between groups. It is even possible that no difference between groups was not because subjects in both groups acquired the target words to the same extent but because they did not acquire many of them. Relatively low scores of both groups, below 30 out of 70, might support this interpretation.

Second, there is no doubt that artificially rich contexts on Word Sheet A and the parts of speech of the target words favored the experimental group. As stated by Jenkins et al (1989:232), natural contexts provide only limited help in deciphering the meanings of unfamiliar words. According to Na (1985), nouns, verbs and adjectives are the three easiest groups of words to guess the meanings of from context. A different result might well have been obtained if natural contexts and/or target words of different parts of speech had been used.

Third, to the writer's knowledge, there is no crystal clear answer yet concerning what exactly is measured by a semi-fixed ratio deleted,

acceptable word score cloze test, like Test I in this study. There are mainly three opinions about what cloze tests actually measure: (1) they are identical to discrete-point tests; (2) they test only basic skills; or (3) they measure high level skills and global proficiency. Fotos (1991) suggests that all three views may be correct depending upon the level of students tested and that with basic students, the cloze test appears to measure basic skills within the context of the sentence, similar to a discrete-point test (331-332). If that really is the case, it might be argued with some reason that, with the lower intermediate level subjects of ours, Test I did actually measure something similar to discrete knowledge like vocabulary. At any rate, given the relatively unknown quality cloze tests tend to have, it might be worth while to replicate the experiment using different types of comprehension exercises.

What must be discussed next is why the result of Test I somewhat conflicts with that of Jenkins et al (1989), which indicates superiority of individual word teaching in having subjects acquire those particular words. An important difference between Jenkins et al and the present study, apart from the fact that the former is a research in L1 vocabulary instruction, is the method of post-tests to measure effectiveness of instruction. They measured subjects' vocabulary knowledge directly, by having them supply or choose definitions or synonyms of the instructed words, whereas we attempted to measure our subjects' vocabulary knowledge, in a sense indirectly, through a cloze test.

There are two reasons why direct measurement was avoided in the present study. First, it seems likely, or even a matter of course, that the subjects taught definitions of the target words perform better in a test which requires them to supply or choose those very definitions. In the first 15 minutes of our experiment, subjects in the experimental group only tried to derive word meanings themselves without being given the correct answers at all. Comparing them against subjects in the control group, who were supplied with the "answers" at hand from the begin-

ning, through a test asking for those “answers” did not seem to be of much meaning. Second, as Jenkins et al themselves admit, “vocabulary instruction should also result in usable word knowledge” (229). It is not because they have to be able to tell definitions of individual words that vocabulary expansion is important for learners of a language. Students need to learn words in order to be able to comprehend a sentence, sentences or paragraphs that contain those words. For these reasons, it might be that our post-test, though measuring somewhat opaque abilities as mentioned above, reflects more of “usable knowledge” of the target vocabulary item.

Hypotheses 2 and 3, about the difference according to overall proficiency, were not supported unfortunately, because the effect of interaction was of no significance in Test I. This, again, might be due to the shortness of the different treatments, but we cannot say for certain whether this is actually the case. However, it is suggestive that non-significant differences in the means of Test I favor the experimental group among high proficiency subjects and the control group among low proficiency subjects. In addition, an interesting finding is that the variance overlap between Pre-Test, which is assumed to reflect subjects’ overall reading proficiency, and Test I, which is designed to measure the acquisition of the target words, was approximately 10% higher in the experimental group. That is, it may be possible to assume that, among high proficiency subjects, deriving meaning strategy worked better than memorizing meanings strategy and the opposite in case of low proficiency subjects. However, though these data seem to be pointing one direction, it remains mostly unclear whether or not the different patterns between the two groups according to proficiency levels are merely accidental.

Hypothesis 4 was supported by the result of Test II. There was a significant difference in the ability of deriving word meanings from context between the two groups. Although all the mean scores were low in spite of rich contexts, the difference between the groups were remark-

able, if the shortness of different treatments is taken into consideration. If we assume that the scores of the control group were representative of the experimental group before the treatment, then, as is observable from Table 7, the 15-minute-treatment was responsible for a 44 to 47 percent improvement in the ability to derive word meanings, depending upon the scoring system. This result supports Jenkins et al (1989), which observed 83 to 93 percent improvement after 9 to 20 days of instruction. At a closer look, the improvement was significant only at medium proficiency level. It might be the case that 15 minutes of deriving meaning practice had the greatest influence on medium proficiency subjects because, as predicted by Hypotheses 2 and 3, high proficiency subjects were already relatively good at making use of context clues and low proficiency subjects were too poor at the skill to be influenced substantially in the short treatment.

Hypothesis 5 was completely rejected by the result of Test III. The subjects who had memorized word meanings through L1 equivalents performed significantly better at this long-term memory test. Examined in more detail, the treatment effect was significant at high proficiency level only. In addition, the main effect for proficiency was not significant. Namely, high proficiency subjects in the control group performed significantly better than all the subjects in the other subgroups. This finding is of interest, because it implies that high ability of rote memorization is one of the characteristics of high proficiency learners. Furthermore, examined qualitatively, an interesting difference is observed between the groups. While many subjects in the experimental group did not write anything on their answer sheets, there were many in the control group who scored low by writing the L1 equivalent of a target word as the answer to a different target word. The implication of this result is twofold; word meanings seem to be better kept in long-term memory when accompanied with L1 equivalents, but it is often the L1 equivalents themselves, not the association with the target L2 vocabulary items, that are memorized. However, it might be possible that a different result

would have been obtained if the test had required the subjects to supply meanings of the words in sentences, as Furuya (1989) implies, or if the experiment had been carried out over time. An important feature of guessing from context is how frequently students meet a new word—the issue of recycling for retention. Most often, one guesses to understand the whole text, and recalling the meaning of individual items later is not the purpose. More exposure is needed to memorize these individual items.

#### **4. Conclusion and Implication**

Hypotheses 1 and 4 were confirmed, Hypotheses 2 and 3 were mildly supported, and Hypothesis 5 was rejected by the results of this study. That is, (1) words were, helped by rich contexts, as well comprehended through guessing from context as through memorizing given L1 equivalents, and (2) the learners trained and encouraged to guess from context even for 15 minutes markedly developed better skills and attitudes to cope with unfamiliar words, and (3) the learners provided with L1 equivalents had word meanings, or clues to word meanings, better stored in their long-term memory. It still remains mostly unclear how a learner's proficiency level and his/her ability of guessing word meanings from context relate to each other.

Though this research is clearly limited by the short length of the treatment, what vaguely emerges from it is the following implications for vocabulary teaching.

- (1) For teaching specific vocabulary items, it might be recommended that learners be given chances to guess the meanings of the words in context with or without the help of the teacher.
- (2) Guessing word meanings seems worth practicing regularly and systematically because it can contribute to improving learners' skills to derive word meanings themselves, and thus, to making them approach independent readers.

- (3) L1 equivalents seem to be better stored in long-term memory than vaguely guessed meanings. But it tends to be the equivalents alone, not the association between the L1 equivalents and the L2 words, that can be recalled.

Needless to say, it is not at all suggested by the writer that vocabulary teaching should depend exclusively on the guessing strategy because, as Rivers (1981) points out, learners will “need to know how to use dictionaries...to check on that elusive word that even context cannot elucidate” (466). In reality, it is not an either/or situation. Perhaps a combination of the strategies, e.g., guessing and then word lists with contextualized sentences, would be the most helpful in the long run. We need to give students a range of strategies for dealing with vocabulary so that they can find which suit their individual learning styles. Further research will be necessary to test the results and the implications of this study on larger, more carefully controlled corpora of data on a longitudinal basis.

### Acknowledgement

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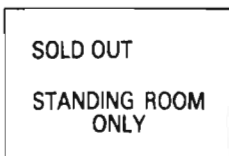
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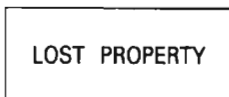
6



この掲示が見られるのは

- A 本屋.  
B デパート.  
C 映画館.  
D 旅行会社.

7



この看板の所に行くのは

- A 友達とはぐれたとき.  
B 道に迷ったとき.  
C 忘れ物をしたとき.  
D 空欄にあったとき.

8



This advertisement means that a sale

- A started last week.  
B finished last week.  
C starts this week.  
D finishes this week.

9

OPENING HOURS		
	Weekdays	Sat. Sun. and Public Holidays
Park Opens	8:00 a.m.	8:00 a.m.
Park Closes	7:30 p.m.	9:00 p.m.

The park

- A closes later at weekends.  
B opens later at weekends.  
C opens earlier at weekends.  
D closes earlier at weekends.

10

INTERNATIONAL DEPARTURES				
AIRLINE	FLIGHT NUMBER	DESTINATION	DEPARTURE TIME	GATE
BA	388	GENEVA	10:05	8
NW	615	FRANKFURT	10:24	10
PANAM	789	VANCOUVER	10:37	13
JAL	604	STOCKHOLM	10:56	9
KLM	505	BANGKOK	11:03	3
SAB	674	PARIS	11:06	14
JAL	333	ROME	11:19	25

From this airport departures notice board, we understand:

- A Flight 615 is coming from Frankfurt.  
B Flight 604 lands at 10:58.  
C Two planes take off between 10:20 and 10:50.  
D Two planes arrive between 10:20 and 10:50.

### Question 2 Things in the Home

次の1～10の文は英語学習者の辞書からとったものです。それぞれの定義に最も適する語を下のA～Oよりそれぞれ1つ選び、その記号を解答用紙にマークしなさい。

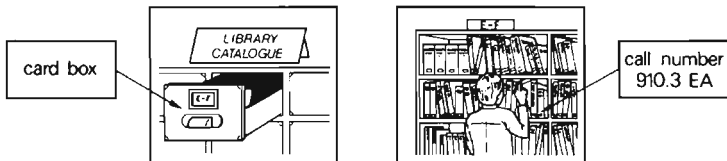
- 1 A letter is sent through the post in it.
- 2 You heat it until the base is hot; it is used for making clothes smooth.
- 3 A lamp you carry in your hand; it gets its power from batteries.
- 4 A small tool used for cutting paper or cloth; it has two blades.
- 5 It can be used to keep a room cool in summer.
- 6 It is a container with a long handle; it is used for cooking things in.
- 7 It has one or two doors at the front and usually has shelves inside.
- 8 It is often used for holding and carrying water.
- 9 You use it to measure things or to draw straight lines.
- 10 It is a small, thin piece of metal used for sewing.

A bucket	B basket	C cupboard
D envelope	E fan	F heater
G iron	H knife	I needle
J pan	K pin	L ruler
M scissors	N stamp	O torch

**Question 3a Library**

次の A~F の文を読み、図書館で Earthquake という本を探して借りるまでの順序を正しく並びかえ、  
答えを解答用紙にマークしなさい。なお 1 番目 (C) はすでにマークしてあります。

- A Then go to the catalogue and find the card box which contains the cards for E.
- B The library staff will stamp the date in the book for you: this will remind you when it has to be returned.
- C To save time, the first thing to do when you go into the library, is to look in the card catalogue for the call number of the book you want.
- D Having found your book, take it to the counter together with your personal library card.
- E If you can't find the catalogue, go to a librarian and ask where it is. The staff are very helpful.
- F When you have found the card you need, make a note of the call number, and then match this with the book on the shelves.



### Question 3b Disneyworld

次の1～5の人々は、Disneyworld に出かけようとしています。そこでは6種類のチケットが用意されています。説明を読んで、5人の人々に最も適切なチケットをそれぞれ A～Fの中から1枚選び、その記号を解答用紙にマークしなさい。

Disneyworld Ticket Information: 1988

	Type of Ticket	Prices			Description of Ticket
		Adult (18+)	Junior (12-17)	Child (4-11)	
A	DISNEYWORLD PASSPORT	¥ 4,400	¥ 4,000	¥ 3,100	A ticket good for general admission and all attractions.
B	BIG 10 TICKET BOOK	¥ 4,100	¥ 3,700	¥ 2,800	A set of tickets good for general admission and a choice of ten attractions.
C	GUIDED TOUR PASSPORT	¥ 4,900	¥ 4,400	¥ 3,400	A guided tour of Disneyworld (four attractions with the tour) and DISNEYWORLD PASSPORT tickets.
D	SENIOR PASSPORT	¥ 3,500	—	—	DISNEYWORLD PASSPORT ticket for people aged 60 and over.
E	MOONLIGHT	¥ 3,400	¥ 3,000	¥ 2,200	A set of tickets good for general admissions and choice of any 5 attractions. Time: 5 p.m. - 10 p.m. only.
F	GENERAL ADMISSION	¥ 3,100	¥ 2,800	¥ 2,100	Admission to Disneyworld and to the free shows and entertainment. Admission to other attractions extra.

- Mrs Takase is sixty-five years old. She wants to spend a day at Disneyworld with her sister who is two years younger.
- Miss Saito wants to see the fireworks and one or two other attractions. She plans to go after work with a friend.
- Yaeko and Mariko are high school students. They just want to visit Disneyworld to take photos and can't afford to spend too much money.
- Mr Asano is sixty-two years old; he is on his first visit to Disneyworld and wants to be shown around everything. He can afford expensive tickets.
- Peter and Simon are on holiday from England; they want to spend all day at Disneyworld and hope to see all of the attractions.

## Question 4

次の英文を読んであとの質問に答えなさい。

## Japanese Actor Buys Castle

An old Scottish castle built 160 years ago has been bought by actor Masahiko Tsugawa who intends to rebuild it in Hokkaido.

The castle will be known as "Santa's Castle" and will be part of an amusement park called "Santaland" which will be built by Hiroo Town. Hiroo is the terminal of the Hiroo Line of Japanese Railways which has now been closed. The line was famous for its stations with romantic names and Tsugawa hopes to reopen the line, calling it the "Happiness Line".

The castle will be shipped to Hokkaido next year and will be rebuilt at the foot of the Hidaka mountain range. Tsugawa

found the castle this January while he was touring Europe with his daughter Mayuko, 12 years old, in order to promote the "Happiness Line".

Tsugawa, 47, decided to open a toy store ten years ago as he spent so much time looking for toys for his daughter. The castle will be opened in about three years from now as a toy museum, with some parts being used as a hotel.

It will cost about 2 billion yen to rebuild the castle and Tsugawa will pay for it partly with bank loans and partly with his own money made from his acting and from running the toy store.

A 次の 1～5 の文について、本文と内容が一致すれば T、本文と内容が一致しなければ F を解答用紙にマークしなさい。

- 1 A Scottish castle will be rebuilt near Hiroo town.
- 2 Mr Tsugawa wants to promote Japanese Railways.
- 3 Mr Tsugawa became interested in toys because of his daughter.
- 4 Part of the castle will be used as a toy store.
- 5 Mr Tsugawa made all his money from his acting.

B 本文で述べられた 1～5 の「出来事」と A～H の「時」を組み合わせ、答えを解答用紙にマークしなさい。

- 1 Tsugawa opened a toy store
- 2 The castle was built
- 3 The castle will be shipped to Hokkaido
- 4 Tsugawa found the castle
- 5 The castle will open as a museum

- |   |                |
|---|----------------|
| A | 160 years ago. |
| B | in January.    |
| C | 12 years ago.  |
| D | next year.     |
| E | 10 years ago.  |
| F | 47 years ago.  |
| G | in 3 years.    |
| H | last year.     |

## Question 5

次の英文は外国人のための観光案内書からとったものです。よく読んであとの問いに答えなさい。



## HACHIKO

Hachiko is probably the (1) known dog in modern Japan. For many years he (2) to go with his master, Professor Ueno, to Shibuya Station, and every evening he was waiting (3) the station to meet his master.

Then, one day, on May 21st 1925, the Professor did not come home. He (4) died during a lecture at Tokyo University. But still Hachiko came every evening to Shibuya Station, (5) to find the Professor. He became a familiar sight for passengers returning (6). Everyone knew his sad story.

The first statue of Hachiko was erected in front of the station on April 21st 1934. Less (7) a year later he died in the snow. During the war this statue was taken down (8) its metal was needed to make guns.

After the war the citizens of Shibuya (9) the sight of the statue, and decided to replace it. The present statue, put up in 1948, has (10) a common meeting point in busy Shibuya. Recently a movie made the name of Hachiko popular again.

1~10の空所に適切な語をA~Dから選び、その記号を解答用紙にマークしなさい。

- 1 A good  
B well  
C most  
D best

- 2 A was using  
B used  
C was used  
D use

- 3 A at  
B for  
C on  
D upon

- 4 A has  
B had  
C is  
D was

- 5 A hoping  
B hopes  
C hoped  
D hope

- 6 A house  
B to house  
C home  
D to home

- 7 A of  
B than  
C for  
D by

- 8 A because  
B despite  
C however  
D so

- 9 A missing  
B misses  
C missed  
D miss

- 10 A became  
B become  
C came  
D come



### **Appendix 2: Reading Passage [The Original Version]**

A well-known scientist (some say it was Bertrand Russell) once gave a public lecture on astronomy. He described how the earth orbits around the sun and how the sun, in turn, orbits around the center of a vast collection of stars called our galaxy. At the end of the lecture, a little old lady at the back of the room got up and said, "What you have just told us is rubbish. The world is really a flat plate supported on the back of a giant tortoise." The scientist gave a superior smile before replying, "What is the tortoise standing on?" "You're very clever, young man, very clever," said the old lady. "But it's turtles all the way down!"

Many people would find the picture of our universe as an infinite tower of tortoises rather ridiculous, but why do we think we know better? What do we know about the universe and how do we know it? Where did the universe come from, and where is it going? Did the universe have a beginning, and if so, what happened before then? What is the nature of time? Will it ever come to an end? Recent breakthroughs in physics which were made possible in part by fantastic new technologies suggest answers to some of these questions. Someday these answers may seem as obvious as the earth orbiting around the sun or perhaps as ridiculous as a tower of tortoises. Only time (whatever that maybe) will tell.

As long ago as 340 B.C. the Greek philosopher Aristotle, in his book *On the Heavens*, was able to put forward two good arguments for believing that the earth was a round sphere rather than a flat plate. First, he knew that eclipses of the moon were caused by the earth coming between the sun and the moon. The earth's shadow on the moon was always round. This would be true only if the earth was shaped like a sphere. Second, the Greeks knew from their travels that the North Star appeared lower in the sky when viewed in the south than it did in more northern regions. The Greeks even had a third argument to believe that the earth must be round, for why else does one first see the sails of a ship coming over the horizon, and only later see the hull?

### **Appendix 3: Reading Passage [The Adapted Version]**

A well-known scientist once gave a public lecture on astronomy. He described how the earth orbits around the sun and how the sun orbits around the center of a vast group of stars called our galaxy. At the end of the lecture, a little old lady at the back of the room got up and said, "What you have just told us is rubbish. The world is really a flat plate which is put on the back of a huge tortoise." The scientist gave a smile and answered, "What is the tortoise standing on?" "You're very clever, young man, very clever," said the old lady. "But it's tortoises all the way down!"

If someone says our universe is an infinite tower of tortoises, most of us will think that the idea is rather ridiculous. But why do we think so? What do we know about the universe? Where did the universe come from, and where is it going? Did the universe have a beginning, and if so, what happened before then? Recent findings in astronomy suggest answers to some of these questions. Someday these answers may seem as obvious as the earth orbiting around the sun—or perhaps as ridiculous as a tower of tortoises.

More than two thousand years ago, the Greek philosopher Aristotle was able to put forward two good reasons for believing that the earth was a round sphere, not a flat plate. First, he knew that eclipses of the moon were caused when the earth came between the sun and the moon. The earth's shadow on the moon was always round. This would happen only if the earth was a sphere. Second, the Greeks knew that the North Star appeared lower in the sky when it was seen in the south than it did in more northern places. The Greeks even had a third reason to believe that the earth must be round; when a ship comes over a horizon, we see its sails before we see its hull.

#### Appendix 4: Word Sheet A

1 年 組 番

---

下線部の単語のだいたいの意味を、文脈から推測してみましょう。必ずまわりに手がかりがあるはずです。(約15分後に、この紙を回収し、その後、これらの単語を含む文章の読解テストを行います)

※下の単語は、すべて新しい単語のようですが、もしすでに知っていたものがあれば、番号にまるをつけて下さい。成績等といっさい関係ありませんので、正直に答えてください。

1. "Could you describe how you come to school?" "Sure. I take Keio Line from Chofu to Tama Center and change to Odakyu Line..." (答えている内容から、わかりますね?)
2. "Did you see the eclipse of the sun yesterday?" "Yes. It was so strange. Though it was 3:00 in the afternoon, it was dark like the night." (昼なのに太陽が暗くなるのは...)
3. At Shonan beach, the sun just coming up over the horizon was so beautiful! (海で、太陽が昇ってくるのは...)
4. "How many stars are there in space?" "They are infinite. We can't count them." (下線部の内容を言い換えている部分があります)
5. I was not sure what he thought of me. But today he asked me for a date! Now it is obvious that he is interested in me. (下線部と反対の内容を表している部分があります)

6. "Is the sun orbiting around the earth or is the earth orbiting around the earth?"  
 "What? Didn't you study science? Of course the earth is orbiting around the sun!"  
 (状況からわかりますね?)
7. In the old days, people used to think that the earth was a plate. Today even a small child knows that it's not a plate but a sphere. Every planet is a sphere. (plate と sphere が対比されていますね?)
8. Did you pay ¥30,000 for that dress? That is ridiculous! I bought the same one for only ¥10,000! (状況からわかりますね?)
9. "I'm thinking of becoming a doctor in the future." "Rubbish! Science is your poorest subject, isn't it? How can you become a doctor when you don't like science at all?" (状況からわかりますね?)
10. We cannot draw a really good map of the world on a flat sheet of paper because the world is not a flat plate. The earth is a sphere. (7 と合わせて考えましょう)
11. What I like about our school is that it has vast space around it. The playgrounds are large and, on fine days, we can see a lot of mountains because there are no tall buildings around. (例からわかりますね?)

## Appendix 5: Word Sheet B

1 年 組 番

これから約15分間で、下の単語の意味を覚えてください。約15分後に、この紙を回収し、その後、下の単語を含む文章の読解テストを行います。

※下の単語は、すべて新しい単語のはずですが、もしすでに知っていたものがあれば、番号にまるをつけて下さい。成績等とはいっさい関係ありませんので、正直に答えてください。

- |               |  |
|---------------|--|
| 1. describe   | [他動] ①特徴を述べる、状況を説明する ②描写する、記述する、表す、物語っている ③言う、評する      |
| 2. eclipse    | [名] ①(太陽・月の)食、食の継続時間 ②光の消失 ③(名声などの)失墜、没落               |
| 3. horizon    | [名] ①地平線、水平線、地平 ②(思考などの)視野、展望                          |
| 4. infinite   | [形] ①無限の、無数の、数えきれない、完全な、果てしない<br>[名] ①無限のもの、無限の空間 ②無限大 |
| 5. obvious    | [形] ①明らかな、明白な、見てすぐわかる ②理解しやすい                          |
| 6. orbit      | [名] ①軌道、軌道の一周<br>[動] ①周りを回る ②軌道に乗せる                    |
| 7. plate      | [名] ①皿、平皿 ②金属製の食器類 ③(金属・ガラスなどの)板                       |
| 8. ridiculous | [形] ばかげた、ばかばかしい、こっけいな、おかしい                             |

9. rubbish [名] ①(主に可燃性の)廃棄物, がらくた ②くず, 駄物 ③ばかな!  
 10. sphere [名] ①球, 球体, 球形, 球面 ②天体, 惑星 ③範囲, 領域  
 11. vast [形] ①広大な, 広漠とした, 非常に広い ②莫大な, 膨大な, ものすごい, 大変な  
 [名] ①広大な広がり

### Appendix 6: Test I

【1】次の文章からは、単語が約9語おきに削除されています。まわりをよく読んで( )に入る単語を書きなさい。規則的に削除されていますから、いわゆる重要な単語が入るとは限りません。冠詞や前置詞かも知れませんが、形容詞や名詞かも知れません。あるところで削除されている単語が、別の部分で使われていることもあるかも知れません。その場では分からなくても、後ろの方で読むと分かる場合もあります。

[注] lecture講演 tortoiseかめ Aristotleアリストテレス

A well-known scientist once gave a public lecture on astronomy. He described how the earth orbits around the (1) and how the sun orbits around the center (2) a vast group of stars called our galaxy. (3) end of the lecture, a little old (4) at the back of the room got up (5) said, "What you have told us is rubbish. (6) world is really a flat plate which is (7) on the back of a huge tortoise." The (8) gave a smile and answered, "What is the (9) standing on?" "You're very clever, young man, very (10)," said the old lady. "But it's tortoises all (11) way down!"

If someone says our universe is (12) infinite tower of tortoises, most of us will (13) that the idea is rather ridiculous. But why (14) we think so? What do we know about the (15)? Where did the universe come from, and (16) is it going? Did the universe have a (17), and if so, what happened before then? Recent (18) in astronomy suggest answers to some of these (19). Someday these answers may seem as obvious as the (20) orbiting around the sun—or perhaps as ridiculous (21) a tower of tortoises.

More than two thousand (22) ago, the Greek philosopher Aristotle was able to (23) two good reasons for believing that the earth (24) a round sphere, not a flat plate. First, (25) knew that eclipses of the moon were caused (26) the earth came between the sun and the (27). The earth's shadow on the moon was always (28). This would happen only if the earth was (29) sphere. Second, the Greeks knew that the North Star (30) lower in the sky when it was seen (31) the south than it did in more (32) places. The Greeks even had a third reason to (33) that the earth must be round; when a (34) comes over a horizon, we see its sails before (35) see its hull.

## Appendix 7: Test II

【2】下線部の語の意味を日本語で書きなさい。

1. The house of the future will have many time-saving devices. There will be new and better machines to clean, prepare meals, and keep people comfortable. These machines will make housework very easy.
2. Teachers are interested in a student's ability to speak because a student's verbal ability shows how well he or she is learning.
3. Giving food to poor people has good results for everyone. The poor people benefit because they have food to eat. Givers also benefit because they feel good about helping other people.
4. The music that is called jazz began in the Deep South. It originated among African people who mixed their music with European music.
5. Sick people often feel resentful. They seem to be angry because they are ill. They think that it is not fair for them to be sick when others are enjoying good health.
6. The cotton shirt became too small for the boy after he washed it in hot water. He didn't know washing cotton clothes in hot water makes them shrink.
7. The anxiety of the patient keeps him from getting well. He worries about his disease, and he is afraid of the future.
8. Galileo improved the telescope(望遠鏡), and he sold his better telescope all over Europe.
9. The PTA did not want the students to read about Newton's ideas. So they put his books on the prohibited list.
10. Of the 5 million kinds of plants and animals on earth, almost half live in forests. But we may lose thousands of species of plants and animals if all the trees are cut down.
11. A person should not cook FUGU fish. A person should not play with matches. A person should not pick up a snake. These are all activities he or she must avoid. There are good reasons not to do these things.

(大妻多摩高等学校)