This study investigates the relative effects of two types of input modification—simplification and elaboration—on Korean high school students’ EFL reading comprehension. Six English reading passages in one of three forms—(a) baseline, (b) simplified, or (c) elaborated—were presented to 180 students, who were divided into two proficiency levels (i.e., high proficiency and low proficiency). Comprehension was assessed by an 18-item multiple-choice test, which included items for assessing (a) general, (b) specific, and (c) inferential comprehension. In addition, students’ perceptions of their comprehension were measured by their responses on a 6-point unipolar scale. The test data were analyzed by a 2-by-3 analysis of variance, with least significant difference tests used in post hoc analyses. The results support the suggestion that input should be modified in the direction of elaboration rather than by artificial simplification, because elaboration retains more nativelike qualities than and is at least equally successful as—if not more successful than—simplification in improving comprehension. Instruction with elaborated input should accelerate the progression to fluent reading of unmodified materials, which is the ultimate goal of foreign language reading instruction.
Patten, 1990; Wagner-Gough, 1975). Specifically, much second/foreign language research has focused on input comprehension, motivated by the hypothesis that the learner must comprehend the input if it is to assist the acquisition process (Krashen, 1985, 1991, 1993, 1997; Long, 1983, 1985; Loschky, 1994; Olaofe, 1995; Prabhu, 1997; Sole, 1994). Attempting to investigate this hypothesis in a way that holds promise for developing pedagogical materials, researchers have explored the effects of various forms of input modification on learners’ comprehension to identify the characteristics that make input more comprehensible to second/foreign language learners.

**INPUT MODIFICATION**

Modifications to input can be divided into two types: simplification, in the form of less complex vocabulary and syntax, and elaboration, in which unfamiliar linguistic items are offset with redundancy and explicitness (Yano, Long, & Ross, 1994). More specifically, typical features of linguistic simplification include the use of shorter utterances (in words or in T-units), simpler syntax (in clauses or S-nodes per T-unit), simpler lexis (smaller type-token ratios and avoidance of low-frequency vocabulary), deletion of sentence elements or morphological inflections, and preference for canonical word order (Parker & Chaudron, 1987). On the other hand, elaboration of input involves increasing redundancy and actualizing underlying thematic relations straightforwardly. Thus, elaboration can be defined as follows:

Features such as slower speech, clearer articulation and emphatic stress, paraphrases, synonyms and restatements, rhetorical signaling devices, self-repetition, and suppliance of optional syntactic signals (e.g., relative and complement clause markers) serve neither to “simplify” nor to “complexify” the surface form, rather, they are clarifications of meaning only, opportunities for the listener/reader to better decode the communication. (Parker & Chaudron, 1987, p. 110)

Studies of input modification provide some evidence for the comparative value of elaborated versus simplified aural language as input (e.g., Cervantes, 1983; Chaudron, 1983; Chiang, 1990; Chiang & Dunkel, 1992; Y.-H. Choi, 1994; Fujimoto, Lubin, Sasaki, & Long, 1986; Yi, 1994). In reviewing previous studies in this area, Parker and Chaudron (1987) also noted that elaborative modifications and clear segmenting of the thematic structure of the communication enhanced comprehension, but linguistic simplification in the form of simplified syntax and vocabulary did not.
Modification in Written Input

Despite the apparent value of elaboration for enhancing comprehension of aural input, the conventional wisdom applied to many reading texts is that simplification is desirable for comprehension. Accordingly, studies of written input modification have focused primarily on the effect of simplifying vocabulary and syntax (e.g., Jeong, 1987; Lee, 1986; Strother & Ulijn, 1987). Some such studies of written input modification (Y.-J. Choi, 1996; Jeong, 1987; Kim, 1985; Lee, 1986) have indicated that modification of written input facilitated Korean high school students’ reading comprehension. The modification employed in all of these studies, however, entailed primarily simplification of syntax and lexis, although it was sometimes mixed with elaborative modification. The results of these studies have been taken to indicate that simplification usually improves second/foreign language reading comprehension, and, therefore, extensive use of linguistically simplified texts in second/foreign language reading classes has been advocated (Jeong, 1987; Kim, 1985).

Problems With Simplification

Although simplification may increase the comprehensibility of written input for nonnative readers, several researchers have pointed out its disadvantages. First, the use of limited vocabulary and short, simple sentences in simplified texts is likely to result in “choppy, unnatural” (Blau, 1982, p. 525) discourse, which may differ significantly from authentic target language materials. Secondly, simplified input may not be beneficial for language learning because even though learners may comprehend a text from which all potentially unfamiliar linguistic items have been eliminated, this elimination prevents exposure to items that learners eventually should know (Yano et al., 1994). Thirdly, simplification of the language and content of reading materials could induce learners to develop reading strategies that are inappropriate for unsimplified target language materials (Honeyfield, 1977). Finally, a simplified passage may lack cohesion (Honeyfield, 1977) because the process of simplification often leaves the relationship between pieces of information unclear. This can be problematic, especially when a specific task, for example, inferencing, requires an understanding of those relationships.

These problems highlight the tension between the requirements of input for comprehension, on the one hand, and for acquisition, on the other, and therefore prompt more careful examination of the research
on written input. Johnson (1981) found rather small effects favoring a simplified text over an unmodified one, but the modifications appear to have confounded syntactic ones with elaborative ones. Blau (1982), however, found some advantages for comprehension in texts with more complex syntax over ones with simpler syntax, at least for students in the eighth grade. Moreover, she found that when faced with two versions of complex texts, college students tended to perceive texts with clearer surface signaling of underlying syntactic relationships as easier to understand.

Yano et al.’s (1994) study, from which the present study draws the major insights, attempted to determine the relative effects of simplification and elaboration on Japanese EFL learners’ reading comprehension. The results showed that students who read linguistically simplified passages scored significantly higher on a comprehension test than did students who read the unmodified, original version of the same passages. Readers of elaborated passages also performed better than readers of the unmodified passages, but the difference in scores between the two groups was not statistically significant; nor was a significant difference found between the reading comprehension scores of the students who read the simplified passages and those who read the elaborated versions.

**Learner Proficiency**

In addition to questions about the value of different types of modifications, the potential interaction between modification type and learner proficiency remains an important issue. Might lower level learners need simplification while advanced learners need elaboration to extend their competence? Some evidence suggests that modifications are more useful to learners of lower L2 proficiency (Blau, 1982; Brown, 1987; Chaudron, 1983; Long, 1985; Tsang, 1987), but in other studies the most proficient learners profited most from input modification (Chiang, 1990; Chiang & Dunkel, 1992; Jeong, 1987). Brown (1987) and Tsang (1987) found that texts modified with redundancy (e.g., with paraphrases and synonyms) were as successful in promoting comprehension as syntactically simplified texts were. However, this effect was found only for the lowest levels of learners (in 9th and 10th grades).

**Research Questions**

Although researchers (Brown, 1987; Parker & Chaudron, 1987; Tsang, 1987; Yano et al., 1994) have expected that elaborated input would promote nonnative learners’ reading comprehension, the actual re-
search either involved students in an ESL environment (Brown, 1987; Tsang, 1987) or revealed no significant effect (Parker & Chaudron, 1987; Yano et al., 1994). Thus the present study attempted to determine the relative effectiveness of pure simplification and pure elaboration of written input on the reading comprehension of Korean EFL learners at different proficiency levels. Also examined were the effects of modification type and learner proficiency on three kinds of comprehension process (i.e., general, specific, or inferential comprehension) and on the learners’ perceived comprehension.

The present study investigates whether or not elaborative modification, which has been shown to enhance nonnative speakers’ listening comprehension, can augment reading comprehension as successfully as linguistic simplification can. If elaboration is as effective as simplification for comprehension, it will constitute an alternative approach to written input modification because it allows more nativelike target language input.

The present study investigates the following questions:

1. Will readers of a modified (i.e., either simplified or elaborated) version of a passage comprehend a passage better than readers of an unmodified baseline version, as shown by students’ scores on a multiple-choice comprehension test?
2. Will readers of an elaborated passage comprehend the passage better than readers of the simplified version do?
3. Will the data show an interaction effect of modification type and students’ English proficiency on their overall reading comprehension?
4. Will readers of modified (either simplified or elaborated) versions of passages perceive their comprehension to be higher than readers of unmodified (baseline) versions do, as measured by the responses on a unipolar scale?

**METHOD**

**Participants**

This study, conducted in April 1997, involved 430 Korean second-year high school students. Among them, 105 students who participated in pilot studies were excluded from the main study. All were enrolled in J Women’s High School (a pseudonym) in Seoul and had studied EFL for at least 4 years (4–5 hours a week) during middle school and high school. They were considered to be at an intermediate level of EFL.

On the basis of their scores on the English section of the Nationwide
Sample Test (NST),\(^1\) the students were divided into two proficiency-level groups: high proficiency (HP; scores of 55–80) and low proficiency (LP; scores of 20–45).\(^2\) Of the six classes of students participating in the main study, two classes were also assigned to each of three experimental groups and were given six passages of one type to read: baseline (B), simplified (S), or elaborated (E). Thus, there were six groups in all: (a) HP-B, (b) HP-S, (c) HP-E, (d) LP-B, (e) LP-S, and (f) LP-E. Those who scored between 46 and 54 on the NST were also assigned to one of the three experimental groups because the experiment was conducted during regularly scheduled class sessions from which they could not be excluded. However, their performance was excluded from the statistical analyses in order to maintain clear distinctions between the HP and LP groups.

Data for statistical analyses were collected from 30 students randomly chosen from each of the six experimental groups. In all, the data set comprised the performance of 180 students on the comprehension test: 90 HP students and 90 LP students; 30 in each group had read one of the three text versions (B, S, or E).

To verify that the students at each proficiency level were homogeneous at that level, the mean scores of each group on the NST were analyzed (see Table 1). The results of a least significant difference (LSD) test,\(^3\) with alpha set at .05, indicated no statistically significant difference among the NST scores of the three subgroups at each proficiency level but indicated significant differences between the means of the HP and the LP groups. Thus the test confirmed that the students within the HP and LP groups were at the same English proficiency level.

---

\(^1\)This test, administered nationally by authoritative institutions, was developed to prepare high school students for the university entrance examination in Korea. Assumed to assess overall English proficiency, it is composed of 55 items, 12 for testing listening ability, 5 for speaking ability, and 38 for reading ability. The range of the NST is 0–80: 42 items are worth 1.5 points \((1.5 \times 42 = 63)\), 9 items, 1.0 point \((1 \times 9 = 9)\), and 4 items, 2.0 points \((2 \times 4 = 8)\).

\(^2\)As one of the referees has pointed out, whether the students’ scores on the NST represent their language proficiency or only reading proficiency might be unclear, given that the test appears heavily weighted toward reading ability (i.e., 38 of 55 items, or 69%). However, I regard the two proficiency groups defined on the basis of the NST scores as language proficiency groups rather than reading proficiency groups, because the NST is designed such that items for testing reading ability also address other aspects, including grammar and vocabulary.

\(^3\)The test compares the means among all possible pairs of the six groups to examine whether the differences in means are statistically significant; it provides a 95% simultaneous level of confidence in the conclusions regarding all such pairwise tests collectively.
Instruments

**Baseline Reading Passages**

The six passages adopted for the study were selected from *Fluency in English* and *Developing Skills* (Alexander, 1967a, 1967b). I chose passages that required no specific background knowledge (e.g., episodic stories) to minimize the possible influences of content schema on the reading task. In Pilot Study 1, all but 2 of 52 students surveyed on their familiarity with each of the passages answered that they had not seen or read any of them. Thus, I assumed that the overwhelming majority of students were not familiar with these passages.

**Modified Reading Passages**

To investigate the effect of input modification, I prepared three versions—baseline, simplified, and elaborated—of each of the 6 passages, for a total of 18 passages. Simplified passages contained shorter utterances and less complex syntax and lexis than what appeared in the baseline text. Specifically, I constructed the simplified texts by decreasing the length of sentences and the number of embedded clauses as well as the number of multisyllabic, low-frequency words (which proved difficult for students when tested in a pilot study). A baseline text and the corresponding simplified text follows.

**Baseline text:**

Table 1
Participants’ Mean Scores on the Nationwide Sample Test

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>High proficiency Baseline</td>
<td>30</td>
<td>9.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Simplified</td>
<td>30</td>
<td>66.8</td>
<td>6.4</td>
</tr>
<tr>
<td>Elaborated</td>
<td>30</td>
<td>65.1</td>
<td>5.9</td>
</tr>
<tr>
<td>Low proficiency Baseline</td>
<td>30</td>
<td>36.5</td>
<td>6.1</td>
</tr>
<tr>
<td>LP Simplified</td>
<td>30</td>
<td>33.5</td>
<td>7.8</td>
</tr>
<tr>
<td>Elaborated</td>
<td>30</td>
<td>34.5</td>
<td>6.8</td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
<td>50.2</td>
<td>16.8</td>
</tr>
</tbody>
</table>

We are less credulous than we used to be. In the nineteenth century, a novelist would bring his story to a conclusion by presenting his readers with a series of
coincidences—most of them wildly improbable. Readers happily accepted the fact that an obscure maid-servant was really the hero’s mother . . . .

Simplified version:

We are less believing than we were. In the nineteenth century, a novelist would end his story by many accidental events. Most of the events were not likely to happen in reality. Readers happily believed that a humble servant was really the hero’s mother . . . .

In the simplified version, low-frequency words (credulous, coincidences, and obscure) were replaced by higher frequency words (believing, accidental events, and humble). In addition, the multiword expressions used to be, bring . . . to a conclusion, and accept the fact were replaced by one-word items with similar meanings (were, end, and believe), thereby reducing the length of sentences as well. As it was difficult to find an appropriate higher frequency word that corresponded to wildly improbable, an explanatory verbal phrase, are not likely to happen in reality, was added, although it increased the sentence length.

To construct the elaborated texts, I added redundancy and clearer signaling of thematic structure in the form of examples, paraphrases and repetition of original information, and synonyms and definitions of low-frequency words contained in the baseline passages. The elaborated version of the sample text above follows.

Elaborated version:

We are less credulous than we used to be in the past. We don’t easily believe coincidences, or accidental happenings. In the nineteenth century, a novelist would bring his story to a conclusion by presenting his readers with a series of such coincidences, though most of them were wildly improbable. That’s why so many nineteenth century novels end by some accidental events which are never likely to happen in real life. But, readers in the nineteenth century happily accepted the fact that an obscure, humble maid-servant was really the hero’s mother. . . .

In the past (in the first sentence) and in the nineteenth century (in the last sentence) were added to clarify used to be and readers, respectively, and the second and fourth sentences were inserted to paraphrase the respective preceding sentences. The conjunctions though and but were supplied to clarify the relationships between the preceding and the following information. Although the elaborated passage retains low-frequency lexical items such as credulous, coincidences, obscure, and wildly improbable, supplementary definitions, synonyms, and paraphrases (i.e., don’t easily believe, accidental happenings/some accidental events, humble, and never likely to happen in real life) provide cues to their meanings.

As the above example shows, in the course of elaborative modification,
the addition of redundancy and thematic elaborations generated additional T-units as well as extra S-nodes. Thus, unlike the simplified passages, the baseline and elaborated passages contained a symmetrical distribution of low-frequency vocabulary, relative clauses, sentential complements, and compound and complex sentences. The elaborated passages were much more linguistically complex than the simplified ones (see Table 2). They had more words per passage, more words per T-unit, and more S-nodes per T-unit. The elaborated passages were longer than even the baseline texts but were of approximately the same complexity as measured by words per T-unit and S-nodes per T-unit. Of the three forms of the passages, therefore, the objective linguistic counts showed the simplified versions to be the simplest, and the elaborated and baseline versions were more comparable on these linguistic variables.

**Reading Comprehension Test**

The students’ comprehension of the information in the passages was measured with an 18-item multiple-choice test consisting of 3 items for each of the six passages. All students took the same test irrespective of the form of the reading passage they read. Following Yano et al. (1994), to explore the differential effect of input modification types on different kinds of comprehension processes, the test included three types of comprehension items, assessing (a) general comprehension, (b) specific comprehension, and (c) inferential comprehension (see Appendix A for an example of each type of item).  

4 Yano et al. (1994) call the three types of comprehension questions synthesis, replication, and inference, respectively.

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Simplified</th>
<th>Elaborated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total words (length)</strong></td>
<td>117.0</td>
<td>111.8</td>
<td>185.7</td>
</tr>
<tr>
<td><strong>Total sentences</strong></td>
<td>6.5</td>
<td>11.7</td>
<td>11.5</td>
</tr>
<tr>
<td><strong>Total fragments</strong></td>
<td>4.8</td>
<td>2.6</td>
<td>9.0</td>
</tr>
<tr>
<td><strong>Total T-units</strong></td>
<td>8.3</td>
<td>12.2</td>
<td>13.2</td>
</tr>
<tr>
<td><strong>Total S-nodes</strong></td>
<td>13.3</td>
<td>14.3</td>
<td>22.3</td>
</tr>
<tr>
<td><strong>Words per sentence</strong></td>
<td>19.5</td>
<td>9.7</td>
<td>16.8</td>
</tr>
<tr>
<td><strong>Words per T-unit</strong></td>
<td>14.0</td>
<td>9.3</td>
<td>14.3</td>
</tr>
<tr>
<td><strong>S-nodes per T-unit</strong></td>
<td>1.6</td>
<td>1.2</td>
<td>1.7</td>
</tr>
</tbody>
</table>

---

4 Yano et al. (1994) call the three types of comprehension questions *synthesis*, *replication*, and *inference*, respectively.
General comprehension items required the reader to grasp the main idea of a passage by combining seemingly unrelated pieces of information. For example, students were asked to find the most appropriate title for, or subject of, a passage and sometimes to judge the author’s attitude toward some passage content. In contrast, specific comprehension questions required the reader to pay close attention to explicitly stated factual information in a passage in order to be able to identify the truth or falsity of specific propositions regarding the passage. Inference items required the reader to draw implications from the text. This type of question often asked the reader what the paragraph following a given passage would probably discuss.

In addition to the 18 multiple-choice items, the students responded on a 6-point unipolar scale (marked for 0%, 20%, 40%, 60%, 80%, and 100%) to the written question “What percentage of the passage do you think you understood?” This question served as an assessment of their perceived comprehension.

**Procedures**

**Pilot Studies**

As a preliminary step, two pilot studies were conducted 3 weeks before the main study. The purpose of the first pilot study was to choose 6 of 10 passages that were appropriate in difficulty and content for use in the main study and to identify vocabulary and information that needed modification. After constructing the multiple-choice comprehension test on the 6 reading passages thus chosen, I pilot tested it again in order to identify and modify items that were too easy or too difficult. For example, items that almost all the students had answered correctly or incorrectly were revised to make them more discriminating.

**Main Study**

The main study was conducted with 325 students from six classes during regular, 50-minute English class sessions. In the pilot study, this period of time had been found reasonable for reading the passage and responding to the test. Three kinds of test booklet were prepared, each consisting of only one of the three versions (B, S, E) of the six-passage reading task and test, and each type of booklet was distributed to two classes consisting of approximately 110 students each.

Within each class, the same procedure was followed. Students were told to read and try to understand six short passages and to answer 18
multiple-choice questions. The texts were available to students to refer back to during the comprehension test. No questions concerning the content or definitions were allowed. Students were also asked to respond to the question “What percentage of the passage do you think you understood?” on the 6-point unipolar scale described in the Instruments section.

**Data Analysis**

The data obtained through the procedure described above were divided into groups according to both the students’ proficiency (HP, LP) and the form of reading passages (B, S, E) that they were given. This produced six groups: (a) HP-B, (b) HP-S, (c) HP-E, (d) LP-B, (e) LP-S, and (f) LP-E. Data from 30 participants from each group were randomly selected for statistical analyses; thus the performance of 180 students on the reading comprehension test constituted the data set for the study. All the analyses were conducted using the software SAS (1985), with alpha set at .05.

The data were analyzed by means of a 2-by-3 analysis of variance (ANOVA). LSD tests were used in post hoc analyses to examine which of the mean differences among the six subject groups were statistically significant. To test for a possible relationship between modification type and comprehension test item type, the scores for each type of item (i.e., general, specific, and inferential comprehension test items) were entered separately into ANOVA and LSD tests.

Finally, the effect of modification type on the students’ perceived comprehension was assessed by means of ANOVA. Raw scores—0, 20, 40, 60, 80, and 100—each of which indicates the degree of perceived comprehension with each passage, were summed up (for each participant across passages, then across participants in each group) into one representative perceived comprehension score. The students’ mean perceived comprehension scores thus constituted the dependent variable for the ANOVA.

**RESULTS**

**Effects of Modification Type and Learner Proficiency on Reading Comprehension**

As shown by the mean scores on the 18-item comprehension test (see Figure 1; see Appendix B for complete data), students in the HP group
who read the simplified version of the passages scored highest \((M = 12.8)\), followed by those who read the elaborated passages \((M = 12.4)\); those who read the baselines scored the lowest \((M = 10.1)\). In the LP group, students reading the elaborated texts performed better \((M = 9.4)\) than those reading the simplified texts \((M = 9.1)\), and those reading the baseline texts did the worst \((M = 7.9)\).

According to the results of the two-way ANOVA on the total comprehension scores, there was a strong relationship between learners’ English proficiency and their reading comprehension scores \((F = 79.78, 1 \, df, \, p < .05)\). There was also a significant effect for modification type \((F = 14.34, 2 \, df, \, p < .05)\). No significant interaction was found between learner proficiency and modification type \((F = 1.91, 2 \, df, \, p = .15)\).

The results of the post hoc LSD tests on the differences among the six groups’ means indicated that the HP students outperformed the LP students on all three types of passages to a significant degree. Regardless of their proficiency level, the students who had read the elaborated passages performed significantly better than those who had read the baseline passages (mean difference = 2.30 [HP], 1.43 [LP]). The test scores of the students who had read the simplified passages were also higher than those of the students who had read the baselines, but the difference in scores was statistically significant only in the HP group (mean difference = 2.73 [HP], 1.13 [LP]). The performance of students at both proficiency levels in the simplified and the elaborated passage conditions did not differ to a significant degree.

![FIGURE 1](image)

**FIGURE 1**

Means of Total Comprehension Scores

<table>
<thead>
<tr>
<th>Type of passage</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>5</td>
</tr>
<tr>
<td>Simplified</td>
<td>9</td>
</tr>
<tr>
<td>Elaborated</td>
<td>11</td>
</tr>
</tbody>
</table>

- **High proficiency**
- **Low proficiency**
Interaction of Modification Type and Item Type

Another analysis involved separating the 18 comprehension test items into three groups of general, specific, and inferential comprehension items.

Effects of Modification Type and Learner Proficiency on General Comprehension

In the HP group, readers of the simplified texts did the best ($M = 4.6$), followed by the elaborated text readers ($M = 3.9$), with the baseline text readers doing the poorest ($M = 3.2$) (see Figure 2; see Appendix B for complete data). On the other hand, the means of the LP readers of simplified ($M = 3.0$), elaborated ($M = 2.8$), and baseline passages ($M = 2.8$) were not so different.

The results of the ANOVA for general comprehension items showed a statistically significant relationship between learner proficiency and scores on general comprehension items ($F = 29.01, 1 \, df, \, p < .05$). Modification type also had a significant effect on those scores ($F = 5.93, 2 \, df, \, p < .05$), as did the interaction of learner proficiency and modification type ($F = 3.73, 2 \, df, \, p < .05$).

A post hoc LSD test revealed that the HP readers of the simplified texts and of the elaborated texts scored significantly higher on general comprehension items than did the HP readers of the baseline texts (mean difference = 1.43 and 0.73, respectively). There was also a

![FIGURE 2: Means of General Comprehension Scores](image-url)
statistically significant difference in performance between the HP readers of the simplified texts and those of the elaborated texts (mean difference = 0.70). However, the mean differences among the LP readers of the three passage versions on the general comprehension items were not statistically significant.

**Effects of Modification Type and Learner Proficiency on Specific Comprehension Items**

Mean scores for the six groups’ performance on specific comprehension items are displayed in Figure 3 (see Appendix B for complete data). The ANOVA found a statistically significant relationship between learner proficiency and scores on the specific comprehension items ($F = 60.73$, 1 df, $p < .05$) and between modification type and those scores ($F = 8.45$, 2 df, $p < .05$). No interaction was found between proficiency and modification type ($F = 0.58$, 2 df, $p = .56$).

A post hoc LSD test found that both the HP and the LP readers of elaborated passages achieved significantly higher scores than readers of baseline passages did (mean difference = 0.77 [HP], 0.67 [LP]). Readers of simplified passages also scored higher than readers of baseline texts, but not significantly so in the LP group (mean difference = 1.0 [HP], .57 [LP]). The difference between the mean scores on the specific comprehension items of readers of simplified and readers of elaborated passages was not statistically significant in either group.

**FIGURE 3**
Means of Specific Comprehension Scores

<table>
<thead>
<tr>
<th>Score</th>
<th>High proficiency</th>
<th>Low proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Simplified</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Elaborated</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

Type of passage
**Effects of Modification Type and Learner Proficiency on Inference**

In both the HP and LP groups, readers of elaborated texts scored highest on inference items ($M = 3.8$ [HP], 3.1 [LP]), followed by readers of simplified texts ($M = 3.0$ [HP], 2.3 [LP]), with readers of unmodified baseline texts scoring the lowest ($M = 3.0$ [HP], 2.3 [LP]) (see Figure 4; see Appendix B for complete data). Results of the ANOVA again showed a statistically significant effect for learner proficiency on inference item scores ($F = 17.17$, 1 df, $p < .05$). The relationship between modification type and scores on the inference items was also significant ($F = 8.71$, 2 df, $p < .05$). However, there was no significant interaction between proficiency and modification type ($F = 0.10$, 2 df, $p = .90$).

A post hoc LSD test showed that both the HP and the LP readers of the elaborated passages outperformed readers of the baseline passages to a significant degree (mean difference = 0.80 [HP], 0.73 [LP]). However, the scores of baseline passage readers and simplified passage readers on the inference items were not significantly different (mean difference = 0.30 [HP], 0.40 [LP]), nor was the difference significant between readers of the elaborated texts and those of the simplified texts (mean difference = 0.50 [HP], 0.33 [LP]).

**Effects of Modification Type and Learner Proficiency on Perceived Comprehension**

The ANOVA found a significant effect for learner proficiency on the perceived comprehension scores ($F = 24.13$, 1 df, $p < .05$) and for

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**FIGURE 4**
Means of Inferential Comprehension Scores

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![Graph showing the means of inferential comprehension scores for high and low proficiency groups across baseline, simplified, and elaborated types of passages.](image-url)
modification type on those scores \( (F = 7.05, 2 \text{ df}, p < .05) \). Once again, no significant interaction was found between learner proficiency and modification type \( (F = 2.23, 2 \text{ df}, p = .11) \).

HP and LP students’ mean scores on the three versions of passages show similar tendencies (see Figure 5; see Appendix B for complete data). Their perceived comprehension scores were highest on the simplified passages \( (M = 20 \text{ [HP]}, 14 \text{ [LP]}) \), lowest on the baseline passages \( (M = 15 \text{ [HP]}, 12 \text{ [LP]}) \), and in between on the elaborated passages \( (M = 18 \text{ [HP]}, 14 \text{ [LP]}) \). A post hoc LSD test showed that all the differences in perceived comprehension scores among readers of the baseline, simplified, and elaborated passages were statistically significant in the HP group, whereas none of the differences were significant in the LP group.

**DISCUSSION**

**Effect of Modification Type on Overall Reading Comprehension**

Of the four research questions, two involved the effect of input modification type on overall reading comprehension. Question 1 was answered in the affirmative: Students who had read elaborated passages scored significantly higher on the comprehension test than did those at the same proficiency level who had read unmodified versions of the same...
passages. HP students who had read linguistically simplified passages significantly outperformed those who had read the unmodified baseline versions. LP readers of the simplified passages also performed better than readers of the baseline passages, although difference in their scores was not statistically significant. Question 2, however, was answered in the negative: There was no significant difference between the scores of students who had read the simplified passages and the scores of students who had read the elaborated versions.

**Effect of Simplification**

The results of the study indicate that linguistic simplification facilitated nonnative learners’ overall reading comprehension. Reduced complexity in lexis and syntax seems to have contributed to the better performance of the students who had read the simplified texts, as it did in studies by Kim (1985), Lee (1986), Brown (1987), Tsang (1987), and Yano et al. (1994).

However, the beneficial effect of simplification was not statistically significant for LP students. Jeong (1987), in his study of the effect of syntactic simplification on Korean high school students’ reading comprehension, also found that syntactic simplification significantly influenced HP students but not LP students. He explained the results by suggesting that even simplified texts were too difficult for these LP students. His suggestion, however, cannot explain the results of the present study, because the LP students in this study did benefit from elaboration of the passages, which produced passages that were much longer and more complex than the simplified ones were. It makes no sense to say that, for the same group of LP students, simplified passages are too difficult and elaborated passages are not difficult.

Rather, in this study, the lack of a significant effect of simplification on the LP students’ overall reading comprehension seems to have resulted in part from their poor performance on general comprehension questions. As discussed in detail below, simplification was found to be a great aid, especially when general comprehension was required. However, LP students performed poorly on general comprehension questions no matter what type of passage they had read, presumably owing to their lack of language ability necessary for success on the general comprehension tasks. Only HP students with such an ability were able to take advantage of the simplification mechanism in answering these questions, and this seems to be an important reason that the effect of simplification on overall reading comprehension was significant for the HP students but not for the LP students.
**Effect of Elaboration**

Overall comprehension of the passages significantly improved among students at both proficiency levels as a result of the elaborative modifications, which provides further statistical support for the suggestive but not conclusive results of Yano et al. (1994). Surprisingly, those in the lower range of English proficiency seemed to do best on elaborated passages. For the HP students, the facilitative effect of elaboration was comparable to that of simplification.

Recall that the elaborated passages were 66% longer than the simplified passages, 73% denser in words per sentence, 54% denser in words per T-unit, and 42% denser in S-nodes per T-unit. In a sense, then, the students who read the elaborated passages were at a disadvantage, for they not only had to read more during the allotted time but had to answer the comprehension questions faster than students reading either simplified or baseline passages. In light of the greater length and complexity of the elaborated texts relative to the simplified texts, the fact that the readers of the elaborated passages did as well as the readers of simplified passages is even more remarkable.

Given the fact that the linguistic complexities (as measured in S-nodes per T-unit and words per T-unit) of the elaborated and baseline passages were approximately the same, the linguistic complexity of the elaborated texts must not have been a barrier to the students’ reading comprehension. This means that linguistic simplification may not be indispensable for effective comprehension.

As Brown (1987) noted, comprehension seems to depend not so much on linguistic structure as on the level of information that is made available to the reader and the frequency with which the reader comes across the information. By developing redundancy (through exemplification, repetition, paraphrase, definition, and synonym) and by signaling the thematic structure more clearly, elaborative modification can help the reader exploit more opportunities to process critical information within the text and thus to comprehend the text better, even though the resulting text remains at a high level of linguistic complexity.

**Effect of Learner Proficiency on Reading Comprehension**

Results of the statistical analysis revealed that, given the same type of passage, the HP students always scored significantly higher than the LP students on the reading comprehension test. In other words, the comprehension level of the HP students was higher than that of the LP students. A “language competence ceiling” (Clarke, 1979, p. 138, as cited
in Chiang & Dunkel, 1992, p. 361) may have prevented the LP students from performing as well as the HP students even when texts were simplified or elaborated. This leads to a rather unsurprising conclusion that learners’ proficiency level plays an important role in the comprehension of L2 written texts. Research on the relationship between general language proficiency and L2 reading ability suggests that non-native learners’ performance in reading in a second/foreign language is closely related to their level of proficiency in that language; the higher the level (up to a certain point), the better the chances that a learner will comprehend a reading text.

Interaction of Modification Type and Learner Proficiency

The present study found no significant interaction effect of input modification type and learner proficiency on overall reading comprehension; thus Research Question 3 was answered in the negative. The question about an interaction between the students’ proficiency and the type of modification made to the texts had been based on the idea that the LP students but not the HP students might find the simplified texts more comprehensible than the elaborated texts. Elaborated texts were considered too long and linguistically complex for the students at the lower proficiency level. The results of this study, however, indicate that LP students as well as HP students can profit from elaboration and are not bothered by the greater length and complexity of the elaborated texts.

Note, however, that the HP students benefited from input modification to a greater extent than the LP students did, meaning that modification of the passages had more of an impact on the reading comprehension of the higher proficiency group. The LP students’ insufficient knowledge of the language in general may have been the principal obstacle to their taking as much advantage of either type of modification as the HP students did. Perhaps a certain threshold of linguistic competence is necessary to be able to profit from input modification.

Interaction of Modification Type and Item Type

The type of input modification and the learners’ proficiency influenced, to varying degrees, the students’ performance on general, specific, and inferential comprehension items.


**General Comprehension**

As pointed out earlier, HP and LP students differed markedly in their performance on general comprehension questions. The HP students who had read either type of modified passages scored significantly higher on general comprehension items than did those who had read baseline versions, and of the two types of modification, simplification led to better performance than elaboration did. Conceivably, the more compact the passage is, the easier it is to extract the main idea.

On the other hand, neither type of modification influenced the LP students’ performance on general comprehension items, as shown by the lack of a significant difference in scores among the LP readers of simplified, elaborated, and baseline passages. A possible explanation is that their lack of the ability required for the general comprehension tasks prevented the LP students from profiting from any type of modification when general comprehension was required. General comprehension questions, which demand a relatively high level of ability to combine separate and sometimes apparently unrelated pieces of information in order to get the whole picture of a passage, may be far beyond the LP students’ level of competence. This explanation is further supported by the observation that they were able to take advantage of the modifications on specific comprehension questions, which can be answered successfully with only partial understanding of the passages.

**Specific Comprehension**

The effect of modification type and learner proficiency on the students’ scores on specific comprehension questions remained strong (see Appendix B). A comparison of Figure 1 with Figure 3 reveals that the results on specific comprehension questions are parallel to those on overall reading comprehension questions. Elaboration significantly improved the specific comprehension of the students at both proficiency levels. Simplification also assisted the students’ specific comprehension, although its facilitative effect was statistically significant only for the HP students.

Simplification is thus not the only viable option for modifying written input in order to promote extraction of specific factual information, as long as simplification is understood in terms of structural complexity and vocabulary. In fact, elaborated input seems to offer equally or more useful sources from which readers can get specific information (Yano et al., 1994). Unmodified input (i.e., baseline text), however, fails to aid specific comprehension, presumably because it provides neither linguistic simplifications nor enhanced redundancies, both of which seem to greatly help the nonnative readers comprehend particular surface items.
Inference

The HP and LP subject groups performed similarly on inference items (see Figure 4 above). Students who had read elaborated passages significantly outperformed those who had read baseline passages, but students who had read simplified passages did not. This result is consistent with the finding of Yano et al. (1994) on the effects of text type on Japanese EFL learners’ reading comprehension.

Possibly, some distinctive and useful qualities of the elaborated texts provided the information necessary for the readers to recognize the correct responses to items requiring inferencing. Yano et al. (1994) note that making appropriate inferences necessitates “a linkage from the written text to pragmatic knowledge” (p. 213). As the authors suggest, elaborative modification seems to facilitate the readers’ inferential comprehension process by providing them with a “second look” (p. 213) at critical terms and information that are repeated and expanded through elaboration. By contrast, the short, primarily simple sentences typical of linguistically simplified passages actually are an obstacle to inferencing, because “the relationships and meaning revealed by the formation of complex sentences are apparently lost” (Blau, 1982, p. 525). The results of the present study demonstrate that readers benefit from information regarding those relationships and meaning, especially when they need to draw inferences from the text.

Effect of Modification Type on Perceived Comprehension

The Korean high school students in this study comprehended modified reading materials better than they comprehended unmodified materials. It is worth noting that the subjective judgments of the students themselves confirm this finding. Both the HP and LP students thought their comprehension to be higher when they read either simplified or elaborated passages than when they read unmodified versions of the same passages.

Some discrepancies, however, were observed between the level of achieved comprehension as shown by the test scores of students and the level of perceived comprehension as measured by their responses on a 6-point unipolar scale at the conclusion of the test. For example, the perceived comprehension level of the HP students who had read the simplified texts was significantly higher than that of the HP students who had read the elaborated texts, even though the scores of the students in these two groups did not differ significantly. The reduced complexity of vocabulary and syntax in the simplified versions, in conjunction with
much shorter sentence and text length, most likely significantly enhanced the students’ perceived comprehension, though not their actual comprehension.

Although the LP students as well as the HP students thought their comprehension was higher when they read modified materials than when they read unmodified materials, results of the statistical analysis indicated no significant difference in the perception of comprehension among the LP readers of simplified, elaborated, and unmodified baseline passages. A conceivable explanation is that the students’ consciousness of their own low proficiency induced them to perceive their comprehension to be much lower than it actually was.

In any case, the results of the perceived comprehension measure demonstrate that EFL students, especially those at a high proficiency level, are able not only to profit from either elaboration or simplification of input but also to recognize the “greater facility of comprehension” (Kelch, 1985, p. 88) offered by such modifications.

CONCLUSION

The major findings of the present study can be summarized as follows:

1. Simplified input facilitated Korean high school EFL students’ reading comprehension, although students of low proficiency did not significantly benefit from it.

2. Elaborated input significantly enhanced the reading comprehension of students at both high and low proficiency levels.

3. Comprehension of simplified input and elaborated input did not differ significantly for students at either proficiency level.

4. There was no interaction effect between the modification type (baseline, simplified, or elaborated) and learner proficiency.

5. The type of modifications made to the input interacted with the kind of comprehension process required; specifically, both elaborated and simplified input improved the students’ performance on general or specific comprehension test items, but only elaborated input significantly improved their performance on inference items.

6. Students perceived their comprehension to be higher when they received modified input than when they received unmodified input.

To the question raised by several ESL/EFL researchers—What factors make input more comprehensible to second/foreign language learners?—the findings of the present study suggest one possible answer: The provision of elaborative information in written input enhances the reading comprehension of even low-proficiency learners while exposing
them to nativelike features that are usually absent in simplified input. Although elaboration often produces texts that are longer and linguistically more complex than the simplified versions, elaborative amplification of pivotal terms and concepts can compensate for the greater linguistic complexity and length. Elaborative modification, by multiplying opportunities for dealing with text information through redundancy and clearly signaled thematic structure, seems to improve the comprehensibility of written input.

The present study also confirmed Yano et al.’s finding that effects of input modification on reading comprehension can vary with regard to the kind of comprehension process required. For a learner trying to extract main ideas or detailed information from a text, simplification of syntax and lexis may be enough help. However, only elaborative modification may provide enriched semantic contexts that nonnative readers can use in drawing inferences about the reading materials. Given that students need to be prepared for inferential comprehension as well as general and specific comprehension, elaboration of written input seems superior to simplification.

Current methodology in second/foreign language instruction places special emphasis on using natural materials, or examples of the target language as used by native speakers for authentic, communicative purposes. Becoming a competent second/foreign language reader means being able to read unmodified texts produced by writers who make no adjustment for readers who are as yet immature (Aebersold & Field, 1997; Dubin, 1986; Nuttall, 1996). There can be no doubt, therefore, that the ultimate goal of second/foreign language reading instruction is for students to read unmodified materials. Although one type of modification (i.e., elaboration) seems to be a better approach than the other (i.e., simplification), any kind of modification will most likely mask, to a greater or lesser degree, some characteristic features of unmodified input. If one recognizes the need for a second/foreign language program to utilize some type of modified input to counteract learner deficiencies, however, efforts should aim to increase comprehensibility while maintaining essential features typical of unmodified input. In such efforts, elaborative modification represents a feasible alternative to simplification.

In light of the findings of this study, EFL reading material developers as well as English teachers need to reevaluate the widely held assumption that linguistic simplification is the only viable way of modifying target language written input. The findings also suggest alternative, more reasonable criteria for the selection and preparation of reading materials for foreign language instruction. Instruction with elaborated written input should accelerate the progression to fluent reading of unmodified materials (Brown, 1987) by familiarizing nonnative readers with authentic
features of target language input and by helping them develop the necessary skills, for example, for dealing with unfamiliar linguistic items in unmodified input.

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REFERENCES


APPENDIX A

Three Versions of a Reading Passage and Accompanying Comprehension Questions

Baseline Version
Yet the fact is we know very little about gorillas. No really satisfactory photograph has ever been taken of one in a wild state, no zoologist, however intrepid, has been able to keep the animal under close and constant observation in the dark jungles in which he lives. Carl Akeley, the American naturalist, led two expeditions in the nineteen-twenties, and now lies buried among the animals he loved so well. But even he was unable to discover how long the gorilla lives, or how or why it dies, nor was he able to define the exact social pattern of the family groups, or indicate the final extent of their intelligence. All this and many other things remain almost as much a mystery as they were when the French explorer Du Chaillu first described the animal to the civilized world a century ago.

Simplified Version
But, in fact, we know very little about gorillas. No one has ever taken a good photograph of a gorilla in a wild state. Gorillas live in the dark jungles. No scholar on animals has ever examined the gorilla closely and continuously in the jungles. Carl Akeley was an American naturalist. He took two trips in the nineteen-twenties. He loved animals very much. He now lies buried among the animals. But even he was not able to discover how long the gorilla lives, or how or why the gorilla dies. He could not tell us about their family patterns or how smart they are. All this and many other things remain a mystery. They were a mystery also when the French explorer Du Chaillu first introduced the gorilla to the modern world a century ago.

Elaborated Version
Unlike our common belief, however, the fact is that we know very little about gorillas. No one has ever taken a really satisfactory photograph of a gorilla in a wild state. So we don’t have any good pictures of them. No zoologist, who is a scholar on animals, however intrepid and courageous he or she is, has ever been able to keep the gorilla under close and constant observation in the dark jungles in which they live. That is, gorillas in the jungles have not been fully examined by men. Carl Akeley, who was an American naturalist, led two expeditions in the nineteen-twenties in order to examine these animals in the African jungles. He died there and now lies buried among the animals whom he loved so well. But even Carl Akeley, who took trips to Africa, could not discover much about gorillas. He was not able to discover how long the gorilla lives, or how or why it dies. Nor was he able to define the exact social pattern of family groups, or indicate the full extent of their intelligence; we don’t know yet about the gorillas’ family or their I.Q. All this and many other things remain almost as much a mystery as they were when the French explorer Du Chaillu first described the gorilla to the civilized world a century ago. Since the animal was first known to the modern world, little has been discovered about them.

Reading Comprehension Questions (translated from Korean)

1. According to the passage, Carl Akeley was the first zoologist who examined gorillas in a wild state. failed to reveal gorillas’ intellectual faculties. is still leading expeditions in order to investigate gorillas. introduced gorillas to the world for the first time.

2. Which of the following can NOT be inferred from the passage? People usually believe that they know much about gorillas. Much has been discovered about gorillas during the past one hundred years. Gorillas in a wild state are very dangerous. Gorilla was not made known to the world until the mid 1800’s.
3. Which of the following would be the best title for the passage? [general question]
   (1) Expeditions in the Nineteen-Twenties
   (2) Carl Akeley, the Great Naturalist
   (3) Gorilla—Ancestor of Man
   (4) Mystery About Gorillas

APPENDIX B

Means and Standard Deviations for Comprehension Scores by Type of Item

<table>
<thead>
<tr>
<th>Level and text version</th>
<th>All</th>
<th>General</th>
<th>Specific</th>
<th>Inference</th>
<th>Perceived</th>
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<td>M</td>
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<td>2.0</td>
<td>3.2</td>
<td>1.1</td>
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<td>1.7</td>
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<td></td>
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<td>1.4</td>
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