

## The Impact of Simplified and Interactionally Modified Input on Reading Comprehension of Iranian EFL Learners

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### Abstract

The present study aimed at investigating the role of input modification in text comprehension. Traditionally, modification of written input has been limited to linguistic modification or text simplification. The use of the idea of interactionally-modified input, originally studied in the area of oral interaction in text comprehension, is a new development which can potentially be useful in organizing reading instruction. A comparison was made in this study between linguistically-modified (LM) texts and interactionally-modified (IM) texts through repeated measure design. The result of using texts under the two afore-mentioned conditions and the control condition of using unmodified (U) texts showed that the learners' comprehension was highest under the interactionally-modified text condition and lowest under the unmodified text condition with the linguistically-modified text condition in between. The results are discussed and suggestions are made for the improvement of reading pedagogy.

Keywords: Linguistic Input, Linguistic Interaction, Meaning Negotiation, Text Simplification, Collaborative Reading

## تأثیر متن‌های ساده شده و تعدیل شده از طریق تعامل شفاهی بر خواندن و درک مطلب زبان‌آموزان ایرانی

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### چکیده

هدف پژوهش حاضر مطالعه نقش جرح و تعدیل متن بر درک مطلب می‌باشد. سنت ساده‌سازی متون تاکنون به تعدیل زبانی آن‌ها محدود می‌شده است. ایده تعدیل متن از طریق تعامل که ابتدا در حوزه ارتباط شفاهی مطرح شد پیشرفت جدیدی است که می‌تواند بالقوه در سازماندهی آموزش خواندن مفید باشد. در تحقیق حاضر بین متون تعدیل شده از طریق تعامل شفاهی و متون ساده شده با استفاده از طرح تحقیق تکرار سنجش مقایسه‌ای به عمل آمد. نتایج کاربرد متون تحت شرایط آزمایشی فوق و شرایط کنترل استفاده از متون اصلی ساده نشده نشان داد که درک مطلب زبان‌آموزان در شرایط تعدیل از طریق تعامل شفاهی در بالاترین سطح و در شرایط کاربرد متون اصلی ساده نشده در پایین‌ترین سطح و در شرایط کاربرد متون ساده شده در بین دو حالت فوق قرار داشت. در مقاله حاضر نتایج پژوهش مورد بحث قرار گرفته و پیشنهاداتی برای بهبود آموزش خواندن ارائه شده است.

کلیدواژه‌ها: درونداد زبانی، تعامل زبانی، چانه‌زنی معنایی، ساده‌سازی متن، خواندن مشارکتی

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## 1. Introduction

All types of data from a target language that the learners are exposed to and from which they learn are called "input". To date much foreign and second language research has focused on input comprehension, under the influence of the hypotheses that assume a relationship between the comprehension of the input and its contribution to the acquisition process. Written input through reading materials is one, if not the most important, source of input in EFL situations. Since reading comprehension is intrinsic to understanding much of the input that FL learners are exposed to, proposals suggesting methodologies for developing reading comprehension skills can potentially be of help to language teachers.

It has been widely acknowledged that input should be comprehensible if it is to help the process of SLA (Krashen 1981, 1982, 1985, and 1994). In order to make input comprehensible several methods have been proposed. Krashen (1985) suggested two solutions: first the use of context by the learner and second the use of simplified input by the teacher. The other way to make input comprehensible is through what Long (1983, 1985) calls 'negotiation strategies'. According to Long (1985, 1996) input can be made comprehensible through interactional adjustments. These are attempts by learners and their conversation partners to overcome comprehension difficulties so that incomprehensible or partly comprehensible input becomes comprehensible through meaning negotiation. The interactional modifications include discourse moves such as clarification requests, confirmation checks, comprehension checks and self/other repetitions. The rationale for these modifications is also informed by cooperative learning which is claimed to provide a fertile environment for SLA to occur. As a variation of cooperative learning, collaborative reading can offer promising set of strategies for L2 reading comprehension and development. Collaborative reading or paired reading is a type of instruction that pairs two students (usually a skilled reader with a less skilled reader) and gives them time to negotiate the meaning of the passages after reading a text. Paired reading provides the one-to-one instruction that is vital to the successful outcomes that so many students and parents hope for.

## 2. Background

Here, we will review simplification, interaction hypothesis and input modification.

### 2.1. Simplification

The notion of simplification has sparked off a lot of discussion in the field of language education, and a consensus has not been reached yet over the use of simplified texts versus the use of authentic texts as the source of language input for L2 learners. Simplification is said to have the objective of creating unambiguous language that can be understood by non-native readers of English texts.

Widdowson (1979: 185) refers to simplification as a kind of "intralingual translation whereby a piece of discourse is reduced to a version written in the supposed interlanguage of the learner". Perhaps Krashen's (1981, 1985) theory of Comprehensible Input is the most influential hypothesis that supports the use of simplified texts in L2 learning. Many proponents of simplified texts especially for beginning and intermediate L2 learners (e.g. Day and Bamford 1998; Hill 1997; Shook 1997; Tweissi 1998) believe that the mechanisms in simplified texts mimic the language found in caretaker talk and teacher talk and help the language learner acquire a language in a relatively structured way. Simplification is not without its critics, though. Even if simplification is helpful in facilitating L2 comprehension, it involves removing items that L2 learners need to learn. In fact, it is assumed that simplified texts deprive learners of opportunities to learn the natural forms of language. Long (1987) calls this the logical problem of simplifying input: if structures and lexical items with which the readers are unfamiliar are removed, how can they learn language from it?

Considering the drawbacks of simplified texts, many scholars have stressed the need for using authentic texts with L2 learners at all different levels of language proficiency (e.g., Bacon & Finnemann 1990; Swaffer 1985; Tomlinson, Bao, Masuhara and Rubdy 2001). Peacock (1997) defined "authentic materials" in this way: "materials that have been produced to fulfill some social purpose in the language community." According to Guariento and Moreley (2001: 384), "The question now ... is not whether authentic texts should be used, but when and how they should be introduced".

## 2.2 Interaction Hypothesis

Long's early version of the interaction hypothesis (1983a, 1983b, 1985) derived from his ideas about the relationship among comprehensible input, conversational interaction, and second language acquisition. According to this hypothesis, learner output facilitates acquisition when it elicits modified input. Long's (1996: 451- 452) updated version of the interaction hypothesis states that "negotiation of meaning... facilitates acquisition because it connects input, internal learner capabilities, particularly selective attention, and output in productive ways".

Interactionist theories view language learning as a process which necessitates participation in discourse, particularly in face-to-face communication. It is assumed that when learners get into interaction and negotiation to clarify meaning, they obtain comprehensible input and feedback and generate comprehensible output, all of which is claimed to promote acquisition (Pica 1992, 1994).

## 2.3. Input Modification, Comprehension and Acquisition

The impact of input modification on second language comprehension and acquisition has been the subject of study of much second language research. The

common stand of many SLA theories from Corder's (1967) claims to Krashen's Input Hypothesis (1981) and Long's Interaction Hypothesis (1985) is that input must be comprehended by the learner if it is to help the acquisition process.

Parker and Chaudron (1987) in a comprehensive study comparing the effects of different types of modifications on L2 learners' comprehension of academic discourse, found a greater correlation between comprehension of an elaborated passage and independent measures of reading than between comprehension of a simplified passage and independent measures of reading. Yano, Long, and Ross (1994), however, distinguishing between simplified and elaborated input, found no significant difference between the performance of the learners on elaborated and simplified passages.

Following Yano et al. (1994) Sun-Yong Oh (2001) investigated the relative effects of two types of input modification- simplification and elaboration –on EFL learners' reading comprehension. The results of this study and others by Urano (1998, 2002) also lend support to the idea that input should be modified in the direction of elaboration rather than linguistic simplification.

There is substantial evidence for the claim that premodified input is highly effective in promoting comprehension (see Chaudron 1988 for a review of this research), although, until recently there has been no research to investigate whether interactionally modified input is more effective in promoting comprehension than premodified input. Pica, Young and Doughty (1987) investigated this question in a study that compared learners' comprehension of directions under the three conditions of baseline, interactionally modified, and premodified input. They found that learners comprehended the directions best in the interactionally modified condition and worst in the baseline condition. Comprehension in the premodified condition lied in between.

Pica et al.'s (1987) study provided a basis for a study by Ellis, Tanaka, and Yamazaki (1994) investigating the effects of modified interaction on comprehension, and the acquisition of word meaning. They found that interactionally modified input resulted in improved comprehension, and more new words were acquired by this group than the premodified input group.

The focus of another important study in 1994 by Gass and Varonis was investigating the impact of interaction on NNS comprehension and production. Whereas both input conditions -negotiated and modified input- turned out to facilitate NNS' comprehension, only negotiated interaction yielded better L2 production. This, in part, can be considered as evidence for interaction having an effect on L2 production.

Another study is that of Kris Van den Branden (2000) which investigated the effect of negotiation of meaning on reading comprehension. The results of the study showed that negotiating the meaning of unmodified written input led to higher comprehension than pre-modifying the same input. Further, it was revealed that meaning negotiation in which the teacher was involved was superior to peer negotiation. Baleghizadeh and Borzabadi (2007), among others,

also found that interactionally modified input condition improves reading comprehension more than linguistic modifications do, thus confirming the findings of the previous studies i.e. Pica et al. (1987) and Ellis et al. (1994). The present study was an attempt in the same line of research to investigate the effects of interactionally modified input through collaborative reading and pre-modified reading texts on learners' reading comprehension.

### 3. Method

The aim of the current study was to investigate how simplified, interactionally modified and unmodified input might impact Iranian EFL learners' comprehension of written texts. In fact, the focus of the study was the participants' performance not their language development. In specific, the study was aimed at finding difference, if any, in students' comprehension of text presented under the three above-mentioned conditions.

#### 3.1. Participants

Originally 44 second-year students majoring in English as a foreign language (EFL) participated in the study. After administering the Nelson English Language Test, however, three learners whose scores fell two standard deviations below or above the mean were removed from the study. The subjects' ages ranged from 19 to 24, and both sexes were represented in the classes, 18 male and 26 female students.

#### 3.2. Materials and Instruments

The subjects were administered the 350 level Nelson English Language Test (W.S. Fowler and Norman Coe 1976) for two different purposes: first, to ensure the subjects were roughly at the same level of language proficiency; and second, to use the results of this test to check the validity of the reading comprehension tests. For treatment purposes, authentic texts were selected from a book titled 'Doctors to the World' (Murray Morgan 1958). The texts were the stories of the WHO projects and their implementers with whom the writer worked.

The simplified versions of the passages were available in a drill book titled 'reading faster' (Fry 1963). The simplified versions found in this book were comparable to the original texts in terms of readability and length. The average SMOG readability level for the original texts and the simplified formats was 12.87 and 11.22 respectively. Texts had been modified on three levels: (a) vocabulary level had been reduced to a basic word list of 2000-word count; (b) the syntactic structure of the texts had been simplified by a reduction of the number of long and embedded sentences; and (c) a greater proportion of anaphoric references through the use of verbatim repetitions had been introduced.

The passages in the simplified book were divided into three parts and ten multiple-choice comprehension questions were provided at the end of each of

the three parts. Most of the questions focused on the students' comprehension of the main ideas in the text. To cope with the test, then, comprehension of the passage was crucial.

Pre-testing of the comprehension passages showed that the average discrimination index for the questions was, although not perfect, but acceptable (0.43). The average facility index of the tests was 0.72 and most of the distracters functioned well. Using Kuder-Richardson Formula 21 (K-R 21), the researchers calculated the reliability of the reading comprehension tests and the result came out to be 0.70. Also the criterion-related validity of the reading comprehension tests estimated through calculating the Pearson Product Moment correlation between the scores on the reading tests with that of the Nelson tests turned out to be 0.81 which is considered acceptable.

### 3.3. Procedure

The subjects received the input data under three conditions: the linguistically-modified condition using simplified texts; the interactionally-modified condition using the original texts; and the unmodified input condition using again the original texts. As the study had a 'repeated measures' or 'same subject' design, to combat its major drawback which is the 'order effect' (Robson 1993) the researchers decided to counterbalance the treatment types by repeating the study three times; and sticking to a different order of treatment each time the study was carried out.

On the first round of data collection, the input conditions were sequenced as follows: linguistically modified condition, interactionally modified condition, and unmodified input condition. The simplified part was first presented and the students were told that they would have 15 minutes to read the text and then would have 7 minutes to answer the comprehension questions. Then, the second part of the same text was presented in its original form while the students were given the opportunity to negotiate with another student about the meaning of incomprehensible words and phrases in the way they had previously learned in the pilot study. For this condition the students were teamed up with a friend of theirs, so as to make sure that no one felt inhibited to ask for clarification or to exhibit non-comprehension of the text (following Varonis & Gass 1985; Van Den Branden 2000). The amount of time, like the first phase, was 15 minutes for the reading and interacting phase and 7 minutes for comprehension questions. Finally, the third part of the same text was presented in its original form and the students were given time to read in silence and after having finished reading this part, to do the comprehension questions.

One week after the first session, on the second round of data collection, the order of input conditions changed in this way: interactionally modified condition, linguistically modified condition, and unmodified input condition. And finally on the third round of data collection the order of treatment conditions was changed as follows: unmodified input condition, interactionally modified condition, and linguistically modified condition.

#### 4. Results

In the analysis phase of the study, the results obtained from the three treatment sessions were summed up and the procedures of descriptive statistics were conducted on them. A repeated measures ANOVA was then run in order to find out if there was a significant difference among the groups of scores or not. Then a post hoc investigation was conducted to compare the sample means in a pairwise manner (i.e., unmodified vs. interactionally modified, unmodified vs. linguistically simplified, and interactionally modified vs. linguistically simplified). The researchers made each of these three comparisons via a paired t-test, with a Bonferroni correction made on the alpha level (by dividing the desired study-wide alpha by 3).

The results of the treatment conditions are presented in table 1.

Table 1. The descriptive statistics for the research instruments

	N	Min	Max	Mean	SD
U	41	5.00	8.66	7.07	.84
LM	41	5.00	9.66	7.55	1.08
IM	41	6.00	9.66	7.94	.93

U= unmodified LM= linguistically modified IM= interactionally modified  
Table 1 and figure 1 clearly indicate that the students scored highest in the 'Interactionally Modified condition' (M = 7.94), and lowest in the 'Unmodified condition' (M = 7.07), with the 'Linguistically Modified condition' in the middle (M = 7.55).

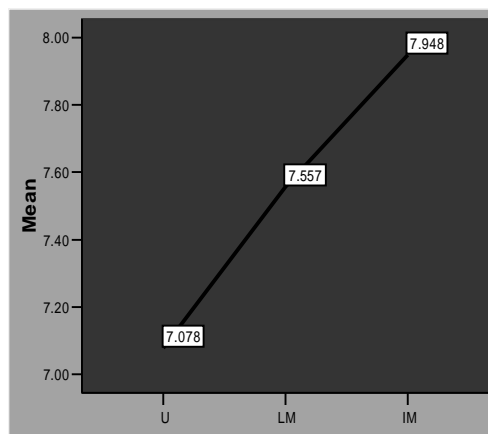


Figure 1. Means of total reading comprehension scores

The results of running a one-way repeated measures ANOVA indicated that there was a statistically significant effect for modification type on total reading comprehension scores,  $F(2, 120) = 8.43, p = .000$  (Table 2).

Table 2. Repeated measures ANOVA for total reading comprehension scores

Source	df	SS	MS	F	Sig.
Modification Type	2	15.57	7.78	8.43*	.000
Error	120	110.93	.92		

\* $P < .05$

The results of the use of paired t-test on each pair of means are presented in table 3.

Table 3. Paired t-test of differences across the three groups for comprehension scores

Comparison Between Groups	Mean Differences	Sig.
IM-U	.87	.000
LM-U	.47	.000
LM-IM	.39	.000

\* $P < .016$

Table 3 shows the results of post hoc comparison between the mean scores of different treatment conditions in a pair-wise manner and indicates that comprehension level in all pairs are significantly different.

## 5. Discussion

Although learners in all three conditions achieved some acceptable comprehension scores, the opportunity to negotiate whenever they thought to be necessary while doing the tasks appears to have helped the negotiation group attain the highest level of comprehension. These findings support those of previous studies (Ellis et al. 1994; Loschky 1994) and augur well for Long's (1981, 1983a, 1983b, 1996) Interaction Hypothesis. Although, most of the previous studies (Ellis et al. 1994; Pica et al. 1987) were concerned with listening



rather than reading comprehension, the results of this study in line with those of others (Branden 2000; Baleghizadeh and Borzabadi 2007), confirm the hypothesis that interactional modifications improve reading comprehension to a considerable degree. The benefits of negotiations of meaning were first demonstrated for learner-native speaker oral exchanges (Hatch 1978; Long 1981), but further investigations have shown that these benefits hold true for learner-learner oral interactions as well (Gass & Varonis 1994).

Long's Interaction Hypothesis (1996) assumes a very important role for attention during interaction. It is said that during instances of negotiation for meaning, learners' attention is focused on specific aspects of language in which they are lagging behind and this, in itself, can trigger language development.

Empirical studies by Gass and Varonis (1985) and Doughty and Pica (1986) have suggested that non-native speakers (NNSs) do indeed use interactional adjustments to generate a supply of Comprehensible Input. When confronted with a gap in understanding, they signal the problem and request clarification from their interlocutor, who are then obligated to follow up with a repetition, elaboration or simplification of the original utterance.

The results of this study are consistent with those of Yano et al. (1994) and Oh (2001) who found beneficial effects for input simplification on comprehension. The findings, however, are not completely in line with those of Chiang and Dunkel (1992), Branden (2000), and Baleghizadeh and Borzabadi (2007) in this regard. They had found just a selective beneficial effect for input simplification on reading comprehension. Chiang and Dunkel (1992) and Branden (2000) observed that linguistic elaboration worked more effectively for the high-proficient students than for the low-proficient students. Baleghizadeh and Borzabadi (2007), however, found that the low-proficiency students benefited from linguistic modifications, but the more proficient students did not.

The results of this study, in line with those of many others, suggest that for reading purposes the use of authentic unmodified texts can be more beneficial than the use of simplified text provided that the former is accompanied with meaning negotiation through collaborative reading. The students should gain the potential skills of dealing with unsimplified English as soon as possible. This fact provides support for the use of interactional modifications in lieu of linguistic modifications. Dealing with authentic texts with the help of interaction and negotiation can be an alternative approach that would enable learners not only to comprehend the texts better, but also to gain the enabling skills of reading more quickly.

### Conclusion

Whereas previous studies have focused on oral interaction and its effects on oral input, this investigation was an attempt to study dyadic interaction and its effect on the comprehension of written input. The results of this study lend more empirical support to Interaction Hypothesis as applied to reading unmodified

texts. The findings of this study suggest that a paired reading environment could provide many of the alleged benefits ascribed to the Interaction Hypothesis, but with greatly increased possibilities for access outside of the classroom (especially for ESL students). Considering the importance of meaning negotiation in the SLA process (i.e., the Interaction Hypothesis), providing the right conditions for this process to occur in second language reading classes might be a welcome change with better outcomes for reading instruction. Providing students with increased opportunities to engage in meaning negotiation, in the sense defined above, could direct language teachers to accord paired or group reading a more expanded role in the L2 curriculums. Investigation of the language produced in small groups has provided promising results. It has been found, for example, that when interacting in small groups, students talk more than they do in teacher-fronted activities (Pica and Doughty 1985), that they do not talk less accurately or carefully (Porter 1983), and that they have the opportunity to practice a greater variety of speech acts (Long et al. 1976). Also research on pair work indicates that Adult ESL students can work productively in pairs, even at beginning levels of instruction (Harris 2005; Garland 2002).

By all accounts, paired reading provides a great inducement for meaning negotiation, perhaps because it requires each partner to contribute and seek contribution from the other partner in the process of reading comprehension. This leads to high levels of cooperation, convergence, and a pooling of resources. All negotiation tasks appear to provide ideal conditions for SLA, with the paired reading medium being no exception. In the paired reading, L2 learners heighten their metalinguistic awareness of where they are in their own L2 development and where they still need to go in order to gain more targetlike language skills. Doing paired reading tasks in an interactive environment, then, generates apperceived input, which can subsequently be used to modify and improve learners' vocabulary.

With regard to the texts the teachers are supposed to provide learners with in reading classes, it should be noted that whereas interactional modifications to input almost always has shown to result in higher levels of comprehension, evidence regarding the value of linguistic modifications to input is rather shaky. The findings of this study and those of many others during the last twenty years (e.g. Bacon & Finnemann 1990; Swaffar 1985; Tomlinson Bao, Masuhara, & Rubdy 2001) also, suggest the use of authentic texts regardless of the learners' level of language proficiency. This is suggested because of the fact that interactional modifications yielded to highest level of comprehension in this study and nearly all other studies that have investigated this issue (Ellis et al. 1994; Pica et al. 1987; Branden 2000; Baleghizadeh and Borzabadi 2007).

In drawing together this part, it should be pointed out that teachers should bear this in mind to continuously try to link reading with purposeful communication. For many learners, the EFL classroom is the one place the students get to think about language, practice it, take risks with it, and reflect on

their use of it. Providing learners with activities that nurture this exploration and that allow for interaction is important for language development and for preparing learners to use the language successfully when they leave the class environment. To be successful in meeting this challenge, the teacher should (a) provide students with meaningful tasks associated with the reading, (b) develop activities that encourage students to communicate without making undue oral demands beyond their competence in the new language, (c) give students freedom to experiment with the language they possess, and (d) create a classroom environment in which students feel free to express the ideas that have been stimulated by their reading and to work their way toward more and more valid interpretations through the refinement of discussion in a non-corrective atmosphere.

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