

Vocabulary assessment: Examining the role of syntactic complexity of texts and syntactic awareness

Sayyed Mohammad Alavi

Associate Professor, English Department, Faculty of Foreign Languages,
University of Tehran

e-mail: smalavi@ut.ac.ir

Shiva Kaivanpanah

Lecturer, English Department, Faculty of Foreign Languages, University of
Tehran

e-mail: shkaivan@ut.ac.ir

Abstract

The present paper investigates the role of three syntactic modifications in the performances of EFL test takers on vocabulary measures across proficiency levels. It also addresses the relationship between syntactic awareness and performance on syntactically modified vocabulary tests. A proficiency test, three syntactically modified vocabulary tests, and a syntactic awareness test were administered to participants (N=112). The analyses of the results revealed that syntactic modification of vocabulary tests and level of language ability influence participants' ability to restore the words that best complete the test. Moreover, it was found that syntactic awareness is positively correlated with performance on different versions of syntactically modified vocabulary tests. On the basis of the findings language teachers are advised to raise students' syntactic awareness in order to help them use sentence context more effectively to understand the meaning of new words.

Key Words: Syntactic complexity, syntactic awareness, syntactic modification, context-dependent vocabulary tests, context-independent vocabulary tests, language proficiency.

Introduction

Vocabulary knowledge is linked to the amount of success in second language learning and is used as a measure of school success and language proficiency (Vermeer, 2001; Meara, 1990). Because of the importance of vocabulary knowledge and its contribution to reading skill (Read, 2000; Nation and Snowling, 2000; Qian, 2002, Schmidt and McCarty, 1997; Alavi, 2004) it is extremely important to find the effect and contribution of factors influencing test takers' performance on vocabulary tests. The present study is an attempt to investigate the role of one such factor, i.e., context of test.

Vocabulary testing: issues and options

As interest in vocabulary learning and acquisition increased, similar and parallel changes took place in the field of language testing. Read (2000) itemizes two major approaches to vocabulary testing. Discrete point approach (DPA) that "involves designing tests to assess whether learners have knowledge of particular elements of the language: word meanings, word forms, sentence patterns, sound contrasts, and so on" (Read, 2000: 3) is characterized by multiple-choice, completion, translation, matching, and true/false vocabulary tests.

As Bachman (1990: 296) rightly puts it "broader views of language use, language teaching, and language acquisition have broadened the scope of language testing". Therefore, the shift of attention from linguistic form to function in language teaching motivated language test developers to change the design of their tests. For that reason, by the advent of communicative approach, language testers moved towards communicative approach (CA) to vocabulary testing. This approach is characterized by the inclusion of communicative tasks assessing test-takers' knowledge in real life situations. The CA to testing does not aim at assessing words or grammar in isolation. Rather, as Schmidt (2000) states, it advocates contextualized measures.

Therefore, one line of research on vocabulary assessment has focused on the type of context for vocabulary tests. As a result, context-dependent and context-independent vocabulary tests have been developed. In context-independent vocabulary tests words are presented in isolation and test takers are required to select appropriate response without relying on the linguistic context (Read and Chapelle, 2001). In contrast, in context-dependent vocabulary tests attention to contextual features is necessary for successful performance on the test.

Language learners are able to read and comprehend different and difficult texts if they recognize the contextual clues (i.e., informational and linguistic clues). To show the contribution of context to vocabulary learning, Nagy (1997: 64) argues

What a word means on any given occasion is mediated by the many contexts in which it is used, and such contexts provide considerable input from which language users clearly pick up huge amounts of vocabulary knowledge, apart from any explicit vocabulary instruction they may receive.

To elaborate on the role of context in L2 vocabulary acquisition, Nagy (1997) argues that L2 learners have a greater need to use context as a clue to the meaning because they come across unknown words more frequently than native speakers. He refers to three sources of knowledge that according to Katz and Fodor (1963) contribute to the performance on tests. As they proposed linguistic and extralinguistic knowledge may disambiguate a word by enabling L2 learners to make “context-based” inferences. They are linguistic knowledge including a) syntactic knowledge, b) vocabulary knowledge, and c) word schemas, world knowledge, and strategic knowledge.

As mentioned earlier, context influences the meaning learners attribute to words and derive from texts. Since doing cloze test requires an understanding of context, it can be used as a possible way of examining

how context influences the meaning learners assign to words. In other words, it is possible to think of cloze as a measure of vocabulary knowledge. In this connection Read (2000:103) suggests

if we are particularly interested in vocabulary, we want to know to what extent lexical knowledge has contributed to the test-takers' performance in the test and also which particular items can be seen as assessing vocabulary rather than something else. Another question is whether we can modify the cloze procedure to make it more a measure of vocabulary ability.

Syntactic complexity/simplicity

If cloze test is used as a measure of vocabulary knowledge, text characteristics such as deletion ratio, the rhetorical structure, informational context, and syntactic context might influence test takers' performance. Therefore, one line of research in SLA has been concerned with examining the effects of linguistic modifications on L2 learners' comprehension. The research into the effects of modifications on L2 input is of special importance to second language learners, as input modifications are believed to facilitate second language learners' comprehension (Chaudron, 1983; Yano et al., 1994; Jeong, 1987; Kim, 1985, as cited in Oh, 2001). Moreover, it is argued that simplification or modification of input provides more grammatical information for L2 learners and consequently contributes to the development of their internal linguistic system (Leow, 1997).

Regarding the role and effects of modifications of NS's input on L2 learners' language acquisition Chaudron (1983) concludes that:

- a) Target linguistic modifications enhance perception and comprehension.
- b) Linguistic modifications enhance correct and meaningful use of target language
- c) Structures are acquired according to their frequency of occurrence in input.

The frequency of morphological and syntactic structures in NSs' input are listed as factors influencing learners' output (Chaudron, 1983). It is found that learners' a) access to L2 forms, b) low affective filter, and c) knowledge of the rules of grammar and their appropriate use influence their intake of linguistic facts. Nonetheless, comprehensible input as a comprehension facilitator and a prerequisite for appropriate use of structures in learners' production is of special importance. Therefore, the investigation of the contribution and effects of input features seems imperative. Input modifications that presumably assist comprehension are generally referred to as simplifications.

Having argued in favor of simplification, Leow (1993: 334) focused on the effect of simplification on second language learners' comprehension and intake of structural forms. Simplified input, as he argues, facilitates comprehension and provides more grammatical information for learners to incorporate into their own system. This simplification or simplified input is defined as "second language input that has been modified by a speaker or writer to facilitate SL learners' comprehension...[and] include phonological (on oral input), morphological, syntactic, lexical, and discourse modifications".

Modifications of input can either be conversational adjustments or linguistic modifications (Yano et al., 1994). Conversational adjustments are more frequent and provide a source of ideas for elaborative modifications. Linguistic adjustments are made in the domains of phonology, morphology, syntax, and semantics.

Most modification studies of oral input support the conclusion that elaborated input enhances comprehension, but researchers investigating the effects of input modifications on reading have been tempted to believe that simplified input also increases comprehension. As a result, written input modifications have mainly been concerned with the effect of simplification

of vocabulary and syntax on reading comprehension (Chaudron, 1983; Yano et al., 1994; Jeong, 1987). These studies have indicated that modifications in the form of simplification facilitate L2 reading comprehension. For example, Droop and Verhoeven (1998) studied a group of 70 Dutch, Turkish, and Moroccan children to find out whether linguistic complexity of texts and background knowledge influence their reading comprehension. The results revealed that for both groups the performance on linguistically complex texts was lower than the one on simple texts. They argue that limited proficiency children cannot benefit from background knowledge or familiarity with the topics when the texts are linguistically complex and beyond the level of their reading comprehension.

The literature has predominantly been concerned with the investigation of the effect of different types of modifications, whether linguistic or lexical, and as it became surprisingly apparent no research has been done investigating the effect of syntactic modification on the ability of test takers to find out which words make sense in sentence context.

Syntax, syntactic awareness, and reading comprehension

The syntax of a language constitutes the core of the language, as it links meaning with sounds or written symbols. Richards et al. (1992: 370) define syntax as “the study of how words combine to form sentences and the rules which govern the formation of sentences”. Blau (1990: 746) argues for the role of syntax in comprehension with greater force. She states:

Few would deny that comprehensible input (CI), in conjunction with other factors, is an essential ingredient for SLA. Acquisition is fuelled by exposure to input that is somehow rendered comprehensible either by the opportunity for negotiation of meaning via interaction or through the aid of characteristics of the input itself.

Blau's (1990) study demonstrated that non-native speakers'

comprehension of a foreigner version, i.e., modified version, of a lecture is better than unmodified version. However, as Blau mentions, it is not clear which of these modifications i.e., less complex syntax, rephrasing, restatement, and slow rate of delivery or combinations of them is responsible for better comprehension. To address this issue, a number of studies were carried out. In the first study, Having addressed the effect of syntax in aural input on comprehension, Blau concludes that “sentence structure, which made more of a difference in the reading comprehension study ... conducted with a similar sample of Puerto Rican students, seems to be a less salient modification when the input is aural rather than written.” (p. 748)

In the second study, Ulijn and Strother (1990) investigated the effects of input modifications, background knowledge, and linguistic knowledge. The results of their study indicated that while syntactic modifications do not facilitate reading comprehension, background knowledge and linguistic knowledge assist reading.

In the third study Johnson (1981) compared the effects of linguistic complexity and cultural origin of content on L1 and L2 readers. The results showed that cultural origin of the text has a greater effect on reading comprehension than the level of syntactic complexity.

The fourth study was conducted by Leow (1993) who addressed the effect of simplification, type of linguistic item, and L2 experience of the learners on the assimilation of those items from written texts. Leow found that “the simplification of written text does not have a significant effect on a reader’s intake of either of the two linguistic variables investigated whereas language experiencedoes” (p. 35).

Blau’s (1990) findings indicating that the greater the awareness of L2 learners of the syntactic rules, the better their comprehension was also supported by Rego (1997) and Tunmer (1989).

To specify the possible contribution of syntactic awareness, Myers

(1996: 581) argues “when students read widely, they develop an awareness of the purpose and structure of texts, and when they experiment frequently with sentence combinations, they develop syntactic awareness.”

Nation and Snowling’s (2000) argument further illustrates the issue. They assert:

Since fluent reading requires that meanings of single words be integrated at the sentence level and text levels and that ongoing comprehension be monitored, sensitivity to the syntactic and semantic constraints of the language might be viewed as a resource that “bootstraps” literacy development. (p. 229)

They suggest that “syntactic awareness may also facilitate reading development via a more direct contribution to word recognition” (p. 229). Having referred to the conclusions arrived at by Tunmer and Hoover (1992), Tunmer, Nesdale, and Wright (1987), Nation and Snowling (2000: 230) comment that “Knowledge of the constraints of sentential context can provide enough information for unfamiliar words to be decoded successfully. Those children with good syntactic awareness are more likely to benefit from context support”. Successful reading as they argue requires the integration of the meaning of words at sentential and textual levels, monitoring comprehension, and sensitivity to syntactic constraints of the language.

Believing that syntactic awareness relates to understanding of syntactic structures and sensitivity to grammatical violations, Nation and Snowling (2000) associate it with reading comprehension. They refer to studies reporting that children with specific difficulties in reading comprehension have an inadequate understanding of syntactic structures and are less sensitive to grammatical violations. The results of the study conducted by Rego (1997: 358) with Brazilian children showed that “syntactic awareness was significantly correlated with contextual facilitation and with reading

comprehension”.

There are also studies that support “the causal relationship between syntactic abilities and students’ performance in reading and sentence recall tasks” (Layton, et al., 1998: 7). Although these studies have focused on a limited range of syntactic abilities, they provide a partial support for a causal relationship between syntactic abilities and reading comprehension.

According to Ryan and Ledger (1984 cited in Layton et al., 1998: 7) “good and poor readers differ in their ability to attend to sentence structure.... They [good readers] are also more proficient than poor readers at predicting words from context”. Finally, Durgunoglu (2002) relates the importance of syntactic awareness to the ability of learners to monitor performance. Syntactic awareness, as Durgunoglu suggests can enable readers to monitor ongoing comprehension and notice when a word does not fit the ongoing representation of the texts. For example, if a reader misreads the verb *stares* as *stars* in the sentence *The cat stares at the mouse*, syntactic awareness enables the child to realize that it should have been an action word and not the name of an object. (p. 3)

He also asserts that syntactic awareness enables inexperienced readers to use sentence context to verify or enhance the incomplete information they have extracted when reading unfamiliar words in a text.

The present study

It appears that the role and importance of vocabulary in second language acquisition, the knowledge of syntax and its influence on performance of test takers on vocabulary tests has not been addressed adequately.

The present study is, therefore, an attempt to investigate the effects of syntactic context on the ability of test takers to find out which lexical item makes sense in the sentence context. More specifically, the present study addresses the following research questions:

Does the syntactic modification of a test result in differences in the performance of EFL test takers on vocabulary measures?

Do learners from different proficiency levels perform differently on the short, complex, and simple tests?

Is there any relationship between syntactic awareness and performance on different versions of syntactically modified vocabulary tests?

Method

Participants

A total of 112 undergraduate university students participated in this study. They were students of Politics, Persian Literature, and English Translation at Islamic Karaj Azad University. They were in their second and third year of their study and represented different proficiency levels. Their age ranged from 18-45.

Instrumentation:

The first step in the study that required the development of three different versions of syntactically modified vocabulary tests proved to be challenging for two reasons. The first difficulty was related to the selection of texts comprising a representative sample of academic vocabulary. There were a large number of texts that could serve this purpose. However, the major issue was that they were related to certain subject areas and required specific background knowledge. To resolve this issue, general texts not related to particular areas were selected and their academic vocabularies were identified. This type of text selection did not meet the objectives of the study because the academic vocabularies were few. Therefore, it was decided to select texts from encyclopedic sources that deal with topics in academic ways. In line with this decision, a total of 257 articles related to

general topics were taken from Encarta Reference Library, 2003. The texts were analyzed to identify academic words developed at the School of Linguistics and Applied Language Studies at Victoria University of Wellington. The academic word list (AWL) does not include the most frequent 2000 words of English.

The second step involved the selection of six texts that had the potential of being syntactically modified. Although some texts had adequate number of academic words, they were written at a level of syntactic complexity that did not yield themselves for further modifications.

Finally, six texts were selected and syntactically modified. A word of caution is necessary here; in the process of syntactic modifications, content and vocabulary were held constant and only syntactic context or the structural features of the tests were manipulated. Version 1 contained primarily simple sentences. A number of 15 academic words were deleted from the text. Version 2 included complex structures, relative clauses, and passive sentences; therefore, this version had fewer but longer sentences. A total of 19 academic words were deleted from the text. Version 3 was the same original text that was controlled for length. The text was left intact and only short sentences comprised the body of text. A total of 16 academic words were removed from the test.

To develop appropriate distractors, a number of 15 ESL learners and 3 Psychiatrists were asked to fill the blanks with appropriate words. Their responses were employed in the construction of distractors for the vocabulary tests.

Next, a Syntactic Awareness Test (SAT) was constructed based on a review of literature (Nation and Snowling, 2000; Durgunoglu, 2002, Layton, et al., 1998). The test battery included 16 items representing the following eight grammatical categories: problems with modifiers, word order, nouns, pronouns, prepositions, verbs, comparative structures, and connectors. The

items were selected from different TOEFL and Grammar books. Participants were asked to read the sentences and identify the one word or phrase that should be changed in order to make the sentence grammatically correct.

Procedure

The study was carried out in two phases. In phase one a pilot study was conducted. The three versions of syntactically modified tests with 50 omitted words were administered to a group of university students representing the target population. The purpose was to examine test item characteristics. Based on the results, nonfunctioning items and distractors were omitted or replaced with other lexical items.

In the second phase, the actual study was conducted. The participants received two passages for each version of vocabulary tests. They were asked to restore lexical items in the three versions of the tests from the distractors. The participants also received a recent version of Michigan language proficiency test comprising 20 grammar, 20 vocabulary, and 10 reading comprehension items. The Michigan language proficiency test was used to determine the level of their proficiency. Finally, two weeks after the administration of the the Michigan language proficiency test, participants received the Syntactic Awareness Test (SAT). The scores in all tests were then converted into a scale of 100.

Results and discussions

The descriptive statistics in Table 1 show that participants had the worst performance in syntactically complex texts ($\bar{x} = 37.31$). The repeated measures ANOVA reveal that syntactic modification results in a significant difference in the performance of EFL test takers on the simple, complex, and short texts ($F_{(2,109)} = 45.66, p < 0.000$)

Table 1: Descriptive statistics of tests takers' performances on different test structures

	Mean	Std. Deviation
short tests	52.2024	26.6049
simple tests	43.4710	20.7948
complex tests	37.3120	20.0266

This implies that syntactic features of the text account for the observed differences and influence test takers' ability to understand which words best complete the sentence. This finding supports the hypothesis that syntax influences the meanings learners attribute to words.

In order to investigate the contribution of the level of language proficiency to syntactic modifications, participants were divided into three groups on the basis of the mean score (16.97) and standard deviation (8.55) on Michigan Test. The Distribution of the participants and their performances in simple, complex, and short texts appears in Table 2.

Table 2: Descriptive statistics of tests takers' performances

		Low (42)	Intermediate (33)	Advanced (37)
Short Text	Mean	30.79	54.54	74.41
	SD	19.08	24.52	13.65
Simple Text	Mean	26.63	45.45	60.81
	SD	15.98	16.77	12.20
Complex Text	Mean	21.67	37.32	55.04
	SD	11.92	19.12	11.87

To find out whether learners across proficiency levels perform differently on the simple, complex, and short texts, a repeated measures

ANOVA was run. The results as presented in Table 3 indicate that the main effects for text structure and level are significant. ($F_{(2,109)}= 45.66, p<0.000$).

Table 3: repeated measures ANOVA results for the effect of text structure and proficiency level

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Text Structure	13003.380	2	6501.690	45.66	.000
Text Structure * Level	1426.149	4	356.537	2.50	.043
Error	31038.920	218	142.380		
Level	81322.154	2	60661.077	77.351	.000
Error	52297.931	109	525.669		

In other words, both text structure and level of language ability of the participants influence their ability to find out which words best complete the text. However, the results should be interpreted with care because there is a significant interaction between the two variables of text structure and level. ($F_{(4,109)}= 2.50, p<0.043$) This interaction is particularly important for the researchers who want to investigate whether the level of language ability combines with text structure to influence learners' performance.

To find where the differences lie, Scheffe tests were conducted for text structure and level. The results indicate that the greatest difference lies between the performance of test takers representing low and advanced proficiency levels in short, simple, and complex texts. The reason for the better performance of participants on short texts seems to be related to the number of words in each sentence. It can be argued that the number of words per sentence has a great contribution to the ability of the participants to understand which words complete the text.

A correlational analysis was run to find a relationship between syntactic

awareness and performance on different versions of syntactically modified texts. The results indicate that there is a positive and strong correlation between the variables investigated.

The result indicated that the strength of association between syntactic awareness and performance on short texts is greater ($r = .68$). This indicates that university students rely more on their syntactic awareness while processing short and simple sentences. This seems to suggest that sentence length is an important factor affecting comprehension. The strong correlations might also be a reflection of working memory capacity of students. It can be argued that students are more successful in using their knowledge of sentential constraints in short contexts where the performance is less influenced by the working memory constraints.

Conclusions and implications of the study

Convincing evidence was found that shows the influence of syntactic modifications on the performance of test takers in vocabulary tests. This study revealed that participants from different proficiency levels performed better in short and simple texts and had less trouble in finding out which words best complete the sentences in these tests. The conclusion that might be drawn from the results is that syntactic manipulation in the form of shortening and simplification of the texts promotes comprehension and assists learners in finding out appropriate words to complete the texts. This particular finding seems to have a contribution to teaching vocabulary items. It may be argued that, as Allen (1983) reminds us, context of sentence clarifies the meaning of words. Therefore, to teach new words, it is better to present them in short sentences, where learners can better use sentence context to understand the meaning of new words. The short context may also contribute to better retrieval of the meaning of the new words.

The present study suggests that syntactic awareness is an important

factor correlating positively with performance on all versions of vocabulary tests. This might imply that for those learners who experience difficulties in understanding the meaning of words and making sense of the texts a major source of difficulty might be lack of awareness of sentential constraints (organizational features of the texts). Therefore, one way to help learners read better is to raise their awareness of syntactic structure of the texts.

The stronger correlation between syntactic awareness and performance on the short version of vocabulary tests might suggest that for practical reasons, especially at the elementary levels when learners' competence is low, it is better to use shorter texts. This is beneficial from two perspectives. First, learners will have less difficulty in understanding syntactic structure of the texts they read. In this way, the number of ambiguities will be reduced and their comprehension will not be marred by the complexity of syntactic structures. Second, when learners encounter new words in short contexts they can memorize them and, as a result, the probability of remembering new words is maximized. However, this argument does not amount to the claim that complex texts should not be used. In the light of this study, it is believed that learners should gradually be exposed to more complex texts in order to gain experience in reading. Moreover, it is believed that overexposing learners to simplified input, as Yano et al. (1994) assert, can affect their output and therefore, impede their acquisition of complex structures.

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