



The processing of ambiguous sentences by Iranian EFL learners A Study of Relative Clause Attachment

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Abstract. The current study examined the way adult Iranian EFL learners resolve relative clause attachment ambiguities, for example, in sentence: Someone saw the maid of the actress who was on the balcony. The main problem posed by those sentences is that the learners fail to process the ambiguous sentences, in fact, they don't know that which noun they should prefer the attachment? 100 Inter-mediate Persian learners of English (Aged 15 up to 21) recruited from two English language Centers in Qazvin, a province in Iran. Safiran and Apple Institute, the participants are asked to take part in an off-line questionnaire study, they replied to English off-line questionnaire. Their performance was revealed by the answers. the results indicated that Iranian EFL students do not opt for low attachment in resolving relative clauses, rather they choose high attachment in resolving relative clauses. An implication of these findings is that there is semantic relationship between the two options or possibilities which the parser tries to analyze them .

Keywords: Processing, Persian ambiguous relative clauses, Attachment ambiguity, Parsing strategies, Iranian EFL learners

1. INTRODUCTION

It is becoming increasingly difficult to overlook the ambiguous sentences and their different interpretation. However, a major problem with this kind of application is that the details of an EFL learner's processing system are still largely unknown. In this study, it will be tried to show the way adult Iranian EFL learners resolve their relative clause attachment ambiguities. It can be interesting to know that how Iranian EFL learners recognize their preference. Absolutely, the comparable results with different kinds of that can be attractive and thinkable.

In fact, we want to analyze their method of parsing in order to know why do they prefer so and what are the main items that they refer them to parse the sentences, Of course, if they make any mistake, their mistakes can help us to provide solutions or understand why do they parse so.

Needless to say that, there are two preferences in parsing High preference and Low, it can be asked that do Iranian EFL students opt for low or high attachment in resolving ambiguous sentences?

And of course, does their native language structure affect their parsing in target language? These kind of questions make us to analyze deeply to realize more detail, and on the whole, if

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we want to know the unknown reasons of wrong or different parsing, we should take any possibility into account. Cuetos, Mitchell & Corley (1996), the ambiguity has different aspects because attachment preferences can be related to different points. For instance, native speakers of English were found to prefer attachment to the second noun" (p. 73-105). but do Persian EFL learners think so ?

For example let's consider the bellow sentence (1).

(1)Someone saw the maid of the actress who was on the balcony.

There are some possibilities for this sentence:

- a. The maid was on the balcony.
- b. The actress was on the balcony.

As you see, there are two possibilities for this sentence and we should be able to suggest some methods in order to analyze the ambiguity and pave the way to understand it precisely.

1.2. Statement of the Problem

Capability of processing the ambiguous sentences may help us to realize the problems and provides enough opportunity to analyze them, but recent studies showed that some of the problems which are related to the comprehension of the ambiguous sentences are still unknown. The importance of this study can be related to the introduction of the more suitable ways and techniques in order to disambiguate the ambiguous sentences. According to Marefat & Meraji (2007), there may be a lot of factors which affect the processing the ambiguous sentences, one of this factors can be the absence of discourse clues in the written text" (p.111-127). According to Adams & Hoshino (1998), they have conducted a study on processing the ambiguous sentences by bilinguals in Japan, they understood that Native Japanese speakers preferred late closure strategy, when instructed in English. On the other hand, when instructed in Japanese, readers preferred the early closure responses, so it can be concluded that when the discourse clues are absent in the written text, the context of the environment could guide sentence processing (Marefat & Meraji, 2007, p.111-127)

According to Maia and Maia (1999), those who were not bilingual illustrated different preferences, it shows that, there is cross linguistic differences in processing ambiguous sentences. Most of disambiguating ways have been introduced by different studies, but in fact, they failed to provide the clear explanation about disambiguating the sentences. In this study, it has been tried to show how it can be possible to solve the ambiguity, of course there may be a lot of suggestions, but what we want to express here is the illustrating the results that show us the most common mistakes in parsing and ways to disambiguate them, it tries to discuss the reasons precisely.

Although there are a lot of techniques in parsing, we should be able to know the most important and, of course, the most suitable one. And now it may be asked that, which of them can be regarded as a most common used option and of course more reliable one. In this study, they have been illustrated and some useful examples have been provided. Ambiguous sentences have special aspects and if we want to analyze them we should be familiar with the different structures and different ways to disambiguate them, some of the most important ways were introduced.

1.3. Significance and Purpose of the Study

This study aims at examining the organization of Persian language, in terms of, how is it learned and understood. As it was mentioned before, the main purpose of this study is that do Iranian EFL students opt for low or high attachment in resolving ambiguous sentences? This question can be analyzed in different ways, it can be asked that why do they choose this way? It is related to their L1, or what does affect their selection and the way of resolving the ambiguity? This types of question, may cause different answers, on the whole, they may help us to know the differences between Persian and English language. As it was mentioned before, one of the most important factor in ambiguous sentences is the absence of discourse clues in the written text, but according to Papadopoulou & Clahsen, (2002), the next factor that we should know it, is thematic properties of the antecedent such as: and/or which affect the attachment of the RC, i.e., there is no absolute tendency for one of these attachments” (p. 501-528).

So the important items that are the main factors of ambiguity are introduced here and try to solve them, on the whole, attention to the structure and different ways of analyzing is the goal of this study in order to find it's own favorite answer, especially, the main question of this study which is, do Iranian EFL students opt for low or high attachment in resolving ambiguous sentences? It should be answered precisely.

Another significance of this study is to analyze different parsing strategies to solve the ambiguities, of course, the favorite one is parallel method, which is almost perfect way to do that, because, as it mentioned before, this method uses different sources to solve the ambiguity.

1.4. Research Questions of the Study

1- Do Iranian EFL students opt for low or high attachment in resolving ambiguous sentences?

1.5. Hypotheses of the study

In order to fulfill the purpose of the present study, the following hypothesis has been proposed:

Structural awareness has a positive effect on understanding the different structure in order to know the different possibilities in an ambiguous sentences, it can help them to disambiguate the sentences easily.

2. REVIEW OF LITERATURE

A considerable amount of literature has been published on the processing of ambiguous sentences and the results of them can be taken into account. It is said that there may be a lot of reasons in order to know why every person is familiar with the processing of his or her own language, the most possible answer about general comprehension for everyone is that processing mechanism is fully innate (Frazier & Fodor, 1978)

Of course, according to Marefat & Meraji, (2005), it doesn't include all aspects of processing because some roles in processing can be different in different languages such as: late closure in different language can be different” (p. 111-127).

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And in Persian the way of processing may be associated with different reasons, it should be noted that Persian has its own especial features that can be regarded as its uniqueness for example according to recent studies on the structure of Persian language the some of its uniqueness were known and were regarded.

Previous studies (Marefat & Meraji, 2005; Moghaddasian, 2008) show that in Persian the RC is attached high (NP1). It can be argued that Persian language has its own specific features. According to Karimi" (2005), the word order in declarative sentences in Persian language is SOV" (p. 31), it means Persian language is null-subject and verbfinal language and what is supposed to introduce its relative pronoun is the complementizer *ke*, the problem is that the complementizer *ke* doesn't regard animacy (Marefat & Arabmofrad, 2008).

There are many studies on adult native speakers have revealed a preference for the relative clause to be attached to the second NP (Cuetos & Mitchell (1988), Carreiras & Clifton (1999),¹, Frazier & Clifton (1996), Roberts (2003), among others)

According to these studies, we can understand the preference in native speakers processing, and try to use and compare it with Persian speakers processing to know their differences.

In addition to these studies, there may be another studies, for example: recent study on children's processing by Traxler (2002), showed the especial results which they may help us to compare with adults' processing, the results may help us to know is there any differences between them or not, but if we want to analyze more, the questions in terms of adults' processing are unanswered. Recent study which has been conducted by Gilboy (1995), it was about Spanish language and its features, in fact, he compared English and Spanish, in terms of, its readers' interpretations of sentences with complex noun phrases, through this study he has found that different readers have their own special factors in order to process any sentences, while, the ambiguity was same for them, Some researchers claimed that Spanish was biased toward having the RC modify NP. So as you see, there may be a lot of factors and elements which may affect the processing, especially, when your cases are from different languages.

In addition, Adams and Hoshino (1998) investigated the effect of the language to see which parsing method is used by bilinguals in L2. He had tried to compare the Japanese and English language students' processing strategies .

3. METHODOLOGY

3.1. Participants

To investigate Iranian EFL learners relative clause attachment preferences, 100 Inter-mediate Persian learners of English (Aged 15 up to 21) recruited from two English language Centers in Qazvin, a province in Iran. Safiran and Apple Institute, the participants are asked to take part in an off-line questionnaire study. criteria for selecting the subjects were as follows : a) they were native Persian speakers and they understand the Persian structure perfectly b) their English knowledge was not so well as their Persian spoken language .It can help us to get a more reliable result because the participants English knowledge has little effect on their decision.

¹ Carreiras & Clifton (1999,p. 826-833)

3.2. Materials

An off-line questionnaire was prepared, and the students were asked to answer them carefully, absolutely, their method of thinking and the way, they prefer, will be released through their preference, low or high. This study was conducted in the two institutes in different days.

3.3. Procedure

20 questions were answered by each participants, they are asked to underline their favorite preference, of course, before the main experiment, the words which were used in the test, were translated for them orally to understand the questions perfectly, this experiment were conducted within the 4 times in different days, the group, itself, was divided into 4 groups, 25 students in each of them. The results of these four groups were compared with each other, and the average conclusion was taken into account. Each student should recognize the favorite preference, for example, one of the sentences is provided here:

Someone saw the maid of the actress who was on the balcony.

- 1-The servant was on the balcony.
- 2-The actress was on the balcony.

3.4. Methods of Analyzing Data

In order to analyze the data to investigate this hypothesis, One-way repeated measure ANOVA was conducted.

4. RESULTS

4.1 Introduction

The aim of this study was to find out whether Iranian EFL students opt for low or high attachment in resolving relative clauses. The data collection procedure was carefully performed and the raw data was submitted to SPSS (version 19.0) to calculate the required statistical analyses in order to address the research questions and hypotheses of this study. This chapter provides the detailed statistical analyses conducted throughout the research and testing the hypothesis of the study based on the obtained results. Every step which was taken in analyzing the obtained data is presented in form of tables and figures in this chapter.

In order to meet the above-mentioned objectives of the study, the following research question was asked:

Do Iranian EFL students opt for low or high attachment in resolving relative clauses?

Based on the above research questions, the following hypothesis was proposed:

Iranian EFL students opt for low attachment in resolving relative clauses

4.1.2. Descriptive statistics results.

Before discussing the results of ANOVA, the descriptive statistics for high and low attachment scores on relative clauses test were assessed. As appeared in Table 4.1, the students' preference for high attachment ($M = 11.48$, $SD = 1.50$) is more than low attachment ($M = 8.52$, $SD = 1.50$).

Table 4.1. Descriptive Statistics for High and Low Attachment Scores on Relative Clauses Test

	Mean	Std. Deviation	N
High	11.48	1.501	100
Low	8.52	1.501	100

Figure 4.1. Below graphically displays the results as represented in Table 4.1.

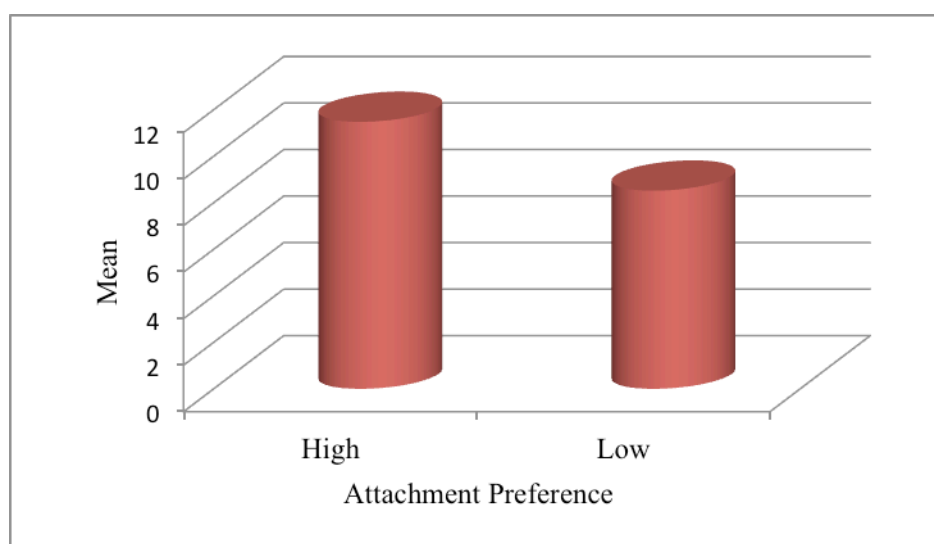


Figure 4.1. High and low attachment scores on relative clauses test

High attachment scores on relative clauses test are provided in Table 4.2 below. As can be seen from the table, the minimum score is 7 with the frequency of one, and the maximum score is 15 with the frequency of one.

Table 4.2. High Attachment Scores

Score	Frequency	Percent	Cumulative Percent
7	1	1.0	1.0
9	6	6.0	7.0
10	23	23.0	30.0
11	20	20.0	50.0
12	23	23.0	73.0
13	18	18.0	91.0
14	8	8.0	99.0
15	1	1.0	100.0
Total	100	100.0	

Low attachment scores on relative clauses test are presented in Table 4.3 below. As obvious in the table, the minimum score is 5 with the frequency of one, and the maximum score is 13 with the frequency of one.

Table 4.3. Low Attachment Scores

Score	Frequency	Percent	Cumulative Percent
5	1	1.0	1.0
6	8	8.0	9.0
7	18	18.0	27.0
8	23	23.0	50.0
9	20	20.0	70.0
10	23	23.0	93.0
11	6	6.0	99.0
13	1	1.0	100.0
Total	100	100.0	

4.2.2 Inferential statistics results.

The results of One-way repeated measures ANOVA that was used to compare the scores at high and low attachment on the relative clause judgment test are set forth in Table 4.4

Table 4.4. One-way Repeated Measure ANOVA; Multivariate Tests for Comparing High and Low Attachment Scores on Relative Clauses Test

	Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Factor	Pillai's Trace	.496	97.259	1.000	99.000	.000	.496
	Wilks' Lambda	.504	97.259	1.000	99.000	.000	.496
	Hotelling's Trace	.982	97.259	1.000	99.000	.000	.496
	Roy's Largest Root	.982	97.259	1.000	99.000	.000	.496

A one-way repeated measures ANOVA was conducted to compare the scores on the relative clause judgment test at high and low attachment. The results as appeared in Table 4.4, indicated that there was a significant effect between the two high and Low attachment preferences, Wilks' Lambda = .50, $F(1, 99) = 97.25$, $p = .000$, $p < .001$, multivariate partial eta squared = .49; accordingly, the hypothesis of the current study as Iranian EFL students opt for low attachment in resolving relative clauses was rejected. So it can be concluded that Iranian EFL students do not opt for low attachment in resolving relative clauses, rather they choose high attachment in resolving relative clauses.

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Although we have found a statistically significant difference between the two sets of scores, we also need to assess the effect size of this result. The value of effect size was .49 in this study that suggests a very large effect size based on the commonly used guidelines proposed by Cohen (1998, pp. 284-7).

5. DISCUSSION

5.1. General discussion

The findings show that Persian second language learners pay a lot of attention on semantic relation in an ambiguous sentences to solve its ambiguity, by and large, their tendency were revealed through their answers, learners remembered the Persian style of processing in their process, of course, to some extent, their English knowledge was effective but not so much, on the whole, it has not had any significant effect on their processing. However, the effect of two languages is impossible to be ignored; we came to the conclusion that Iranian students opt for high attachment to solve the ambiguity and their tendency to select NP1, is taken into account strongly. It should be mentioned here that learners use Persian as the supplier language when they face problems in disambiguate the ambiguous sentences, The use of Persian seems to be influenced by the characteristics of their first language and could be influenced by the use of Persian as the studying language in their lifetime. This result could be changed in any way, the Proficiency in Persian language affect a lot their processing, in fact, if they were proficient in English too, the result would change, Finally, the most likely explanation for the greater influence of Persian proficiency compared to English proficiency is that Persian has been the academic language.

6. CONCLUSION

As a result, as it is said before, it was concluded that, Iranian EFL students use their mother tongue's features to analyze their second language, of course, it is so clear when they wanted to parse the ambiguous sentences , semantic relationship was so effective in their way to process the ambiguous sentences. But, it should be noticed that their preference shouldn't be forgotten, their choice revealed the favorite answers, as it said earlier, Iranian EFL learners prefer the high preference, this conclusion can be used and analyzed in future research and can help us to know the differences better than this.

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