Journal of Applied Linguistics and Language Research Volume 4, Issue 5, 2017, pp. 242-253

Available online at www.jallr.com

ISSN: 2376-760X



Investigating the Rate of Foreign Language Attrition: The Case of Grammar

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Abstract

The present study was carried out to investigate the rate of attrition in an EFL component in terms of grammar. The second aim of this was to find out and compare language attrition rate in different levels and sections of young adult Iranian learners while continuing their studies. To this end, three achievement tests (three grammar multiple choice tests) were utilized as the instruments in this study. Each test included forty items and four parts. I 16 EFL learners were selected from the highest levels of the three sections of Run, Race and Reach: 39 participants from Run4 level (20 males and 19 females), 39 participants from Race4 level (19 males and 20 females), and 38 participants from Reach4 level (18 males and 20 females). The results of the repeated measure ANOVA indicated that learners experienced significant grammar attrition in Reach section. The results also revealed that different levels of Run, Race and Reach (with grammar attrition) sections were significantly different in terms of mean scores.

Keywords: language attrition, young adult Iranian EFL learners, grammar

INTRODUCTION

Second or foreign language attrition, as the result of an individual's reduced use of the attrited language due to declining or the termination of an instructional program (Olshtain, 1989), originated as a new subfield of SLA in a conference on the "Loss of Language Skills", which was held at the university of Pennsylvania by Lambert and Freed (1982). The first research papers were published in America and later on in Europe. As time passed, more and more studies were carried out, relevant theories and hypotheses were proposed and confirmed (Wei, 2014), while some others were rejected. But till now EFL attrition issue is still a young field especially in Iran and in young adult department, and so much seems to be unknown which needs further investigation in order to shed more light on this field and have new insights into the development of EFL educational system in Iran.

Research Questions

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This study aims to answer the following questions:

- 1. Is grammar as an EFL component affected by attrition?
- 2. Does language attrition occur in different sections and levels of young adult EFL learners in terms of grammar, with the same degree?

LITERATURE REVIEW

Beginning in the 1970s until today, a new and especially young field in the area of second language acquisition was developed as language attrition. "First studies dealing with the topic of language loss or language attrition were published in the late 1970" (de Bot & Weltens 1989, p. 127). In 1980, the University of Pennsylvania hosted the conference "The Loss of Language Skills" (Lambert and Freed, 1982). The aim of this conference was to discuss areas of second language attrition and to ideate on possible areas of future research in L2 loss. Since then various research papers mainly within America have been published. In other countries however, language attrition research was paid rapidly any attention (de Bot & Weltens 1995). The field gained new momentum with two conferences held in Amsterdam in 2002 and 2005 some series of graduate workshops and panels at international conference such as the International Symposium on Bilingualism (2007, 2009), the annual conference of the European Second Language Association, and the AILA World Congress (2008) were also held in this field. The outcome of some of the meetings has been published in edited volumes (Schmid, Köpke, Keijzer, & Weilemar, 2004; Kopke, Schmid, Keijzer, & Dostert, 2007) and special issues of journals such as the Journal of Neurolinguitics (2004), the International Journal of Bilingualism (2004) and Bilingualism: Language and Cognition (2010). Compared to the field of second language acquisition, language attrition is still relatively young and so much is still unknown.

Definition of Language Attrition

Among definitions presented by different linguists, the most notable ones are presented below:

Language attrition refers to the deterioration of language skills in neurologically impaired patients and to the decline of certain types of language usage by the elderly. Likewise, language attrition may be used to describe the death of an entire language. There is yet another sense in which the term language skill attrition is used which has received considerably less attention that is loss of language skill by those who have studied and then discontinued the use of a foreign or second language. According to Schmid (2008), the following list is a collection of widely repeated, and sometimes contradictory ideas about language attrition process.

- "1) Attrition is the reversal of acquisition
- 2) Attrition usually takes place within the first 10 years of emigration
- 3) Attrition doesn't set in until ten years after emigration
- 4) Attrition is most severe where the two language systems have similarities
- 5) Attrition is most severe the more different the two language systems are

6) Attrition is most severe in cases where there is little or no contact with other speaker of the language." (Schmid, 2008, p. 9)

According to Schmid (2008, p. 9), defining attrition as a process of loss, forgetting, and deterioration implies that there are two stages of linguistic knowledge: a pre-attrition stage A and an attrited stage B, and the apparent difference between A and B caused by a process of attrition, is the phenomenon of attrition.

Taxonomical Framework of Language Attrition

This taxonomical framework in terms of which language is lost and in which environment it is being lost was provided by Els (1986, p. 4) with the following categories:

- "1. L1 loss in L1 environment: Dialect loss
- 2. L1 loss in L2 environment: Immigrant
- 3. L2 loss in L1 environment: Foreign language attrition
- 4. L2 loss in L2 environment: Language reversion in elderly people"

Grammar as a Linguistic Component

According to Zhang (2009), grammar is often misunderstood in the language teaching field. The misconception lies in the view that grammar is a collection of arbitrary rules about static structures in the language. It is a subject that everyone involved in language teaching and learning has an opinion.

The most traditional description of grammar is given by Bade (2008) who present it as the structure of a language, a set of rules that shows changes in words and the way they connect together to form new units. Rivers states that grammar is often seen as a set of rules, which are expressed with a difficult terminology and have many exceptions. Today grammar is not considered as a mere set of morphosyntactic rules, but as a means to communicate, that is to mediate words and context (Duso, 2007). In This way grammar becomes a set of rules that allow the speaker to understand a language and produce correct utterances.

Grammar is now seen as a way of describing regular language patterns and the way these patterns function to make meaning in particular contexts or cultures. In learning about grammar, students learn to understand how these systems work and to make grammatical choices appropriate to particular context or situation.

Importance of Grammar in Language Teaching and Learning

According to Nordquist (2015, p. 6), "by gaining a clear understanding of how our language works (studying grammar), you should also gain greater control over the way you shape words into sentences and sentences into paragraphs, i.e. Studying grammar may help you become a more effective writer".

Mart (2013) stated that Grammar instruction holds an important place in foreign language learning. It needs to be noted that grammar skills will make great contribution to language competence. The study of structure and history of language, including English grammar, is a valuable asset to a liberal education and an important part of the English program.

Teaching grammar is to show how language works. Accurate teaching of grammar guides learners how to use the language correctly. Azar (2007) highlighted the significance of teaching grammar as one important aspect of grammar teaching is that it helps learners discover the nature of language. In another idea about why teaching grammar is important, Ellis (2006) declared that "grammar teaching involves any instructional technique that draws learners' attention to some specific grammatical form in such a way that it helps them either to understand it metalinguistically and / or process it in comprehension and / or production so that they can internalize it" (p. 84).

Language acquisition without grammar will be confusing. Learners will fail to use the language correctly without grammar skills. "People now agree that grammar is too important to be ignored, and that without a good knowledge of grammar, learners' language development will be severely constrained" (Richards, Renandya, 2002, p. 145). Teaching grammar will help learners to understand the nature of language. With a good knowledge of grammar, the relationship between grammatical concepts gets clear. Being aware of this relationship facilitates understanding the language.

Grammar instruction provides learners with a better improvement. Mart (2013) argued that grammar knowledge increases learners' comprehension of the language. "Grammar is the invisible central spine that holds everything together" (Cook, 2001, p. 24). Nontraditional approach sees grammar as interesting and helpful for effective language learning in itself and an opposite to traditional grammar rule-teaching. Rather than the learning of perspective rules, grammar has become a means of developing learners' ability to communicate meaningfully, appropriately and effectively, i.e., an integral part of language use and "a voyage of discovery into the patterns of language" (Hawkins, 1984, p. 150). By many experts "language learning is essentially grammar learning and it is a mistake to think otherwise and knowledge of a language means knowing its grammar" (Ur, 1996, p. 76). Essentially, contemporary FL/L2 teaching/learning experts agreed that "The essence of language lies in grammar" (Nunan, 1999, p. 96) since grammar exists to enable us to mean.

Students' goals are to communicate in FL/L2. Grammar contributes to that goal, therefore, it must be regarded as an obligatory optional extra. Grammar has held and still holds a central position in language teaching due to the fact that "there is ample evidence to demonstrate that teaching grammar works" (Ellis, 2006, p. 102).

Theoretical Perspectives Related to Grammatical Attrition

In contrast to studies that have concluded that grammar is more resilient than lexicon, Yoshitomi (1992) suggested that for lower level learners, grammar is more likely to

show loss than the lexicon. Feuerhake et al. (2004) reported that all four competence areas (lexicon, grammar, phonology, morphology) are affected by language attrition but some of these like grammar and lexical knowledge seem more likely to be affected than others and suffer a high attrition process. According to Schmid (2002), in syntax it might be more difficult to conclude whether attrition is more influenced by external (L2) or internal (simplification) factors. Wei (2014) remarked that syntactic structures, which are basic and frequently used, or are with high functional load would be less vulnerable to L2 attrition. On the contrary, De Bot and Weltens (1995) reported that after zero, two and four years of disuse of a foreign language by learners, displayed greater attrition in grammar than in phonology and lexicon. Yoshitomi (1992; 1999), stated that less proficient students lose more grammar than vocabulary, while the pattern is reversed in more proficient students.

METHOD

Participants

The participants (all native Persian speakers) were learning English as a foreign language in Iran Language Institute in young adult department. As the researcher was herself an English teacher in the mentioned institute, she conducted this study based on convenience sampling of respondents in this English institute. 116 learners were selected to take part in six achievement tests. They were students of the highest levels of each section selected from 6 classes (three male and three female classes). Each pair of male and female class of the same level took the same achievement tests. There were three sections in this department and each section included four levels which totally make twelve levels as follows:

- 1) Run section (Run1, Run2, Run3, Run4): 39 participants
- 2) Race section (Race1, Race2, Race3, Race4):39 participants
- 3) Reach section (Reach1, Reach2, Reach3, Reach4): 38 participants

The age of the learners ranged between 10 and 14. All the learners took these multiple choice grammar achievement tests at the end of the same semester.

Instruments

In order to carry out this study and collect the required data the researcher utilized the following instruments. There were three achievement tests: (three grammar multiple choice tests), prepared (gathered and modified) by the researcher (the teacher) from ILI young adult Test Time book series (compiled and revised by Nick Ghojogh & Hosseinzadeh, 2009). Each multiple choice test included 40 items and every of its 10 items were selected from each level of the three sections of Run, Race, and Reach, e.g. in Run section (the same as Race and Reach sections) as mentioned in 3.1, there are four levels: Run1, Run2, Run3 and Run4, the first ten items (items numbered from one to ten) of multiple choice tests pertain to Run1 level, the second ten items (items from eleven to twenty) to Run2 level, the third ten ones (items twenty-one to item thirty) to Run3 level and the fourth or the last ten items (items from thirty-one to forty) refer to Run4 level

i.e. Run4 male and female learners took the same grammar tests containing the materials from Run1 to Run4. One score was considered for each item and totally 40 scores were considered for a whole forty-item test. Then the score forty was multiplied by 2.5 so that the final score was calculated out of 100. Each pair of tests of the same level was administered to a pair of male and female classes of the same levels as the tests. Each class of participants contained about 20 young adult EFL learners whose ages ranged from ten to fourteen.

The approach used to estimate reliability of the tests scores in this study was Guttman split-half estimates. As all the reliability coefficients were higher than .70, the instruments used in the present study were reliable.

Data Collection Procedure

Every male and female class of the same level took the same achievement tests (the same grammar test) simultaneously. Every multiple choice test included 40 items, and each item of the test contained four alternatives. The participants took the tests within the allotted time which was considered forty minutes for each test. The learners received instructions both orally by the researcher and written as typed in quiz papers. They were required to choose one of the alternatives among the four ones as the correct answer of each item of the tests.

RESULTS AND DISCUSSION

As mentioned earlier, the researcher utilized three achievement tests (three grammar multiple choice tests) as the instruments. The main objective of the study was investigating the rate of attrition in an EFL component in terms of grammar among young adult Iranian EFL learners.

The researcher ran the descriptive statistics and the repeated measures ANOVA to investigate if grammar as an EFL component is affected by attrition with the same degree. Table 1 shows the results of the descriptive statistics of grammar scores of the learners of Run levels.

Table 1. Descriptive Statistics of Participants	Scores on Grammar Tests (Run)

N	Minimum	Maximum	Mean	Std. Deviation
39	10.00	100.00	58.7179	27.92655
39	10.00	90.00	54.6154	20.49983
39	10.00	100.00	50.2564	25.49377
39	10.00	100.00	62.0513	24.72794
39	22.50	92.50	56.4103	21.45830
39				
	39 39 39 39 39	39 10.00 39 10.00 39 10.00 39 10.00 39 22.50	39 10.00 100.00 39 10.00 90.00 39 10.00 100.00 39 10.00 100.00 39 22.50 92.50	39 10.00 100.00 58.7179 39 10.00 90.00 54.6154 39 10.00 100.00 50.2564 39 10.00 100.00 62.0513 39 22.50 92.50 56.4103

An important fact presented in Table 1 is that participants' grammar mean scores decreased from Run 1 to Run 3 but, increased in Run4. The difference in mean scores presented in Table 1 indicated that there isn't a significant grammar attrition in Run section. Table 2 presents the results of the repeated measures ANOVA.

Table 2. Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	496410.256	1	496410.256	269.519	.000
Error	69989.744	38	1841.835		_

The results of the repeated measures ANOVA in Table 2 that there is a significant difference in grammar mean scores in different levels of Run group (F= 269.519, sig.= 0.000). In the next step, the researcher ran the descriptive statistics and the repeated measures ANOVA for Race levels. Tables 3 and 4 show the pertaining results.

Table 3. Descriptive Statistics of Participants' Scores on Grammar Tests (Race)

	N	Minimum	Maximum	Mean	Std. Deviation
Race1Grammar	39	10.00	100.00	51.5385	23.23093
Race2Grammar	39	10.00	100.00	46.9231	23.18732
Race3Grammar	39	10.00	100.00	47.1795	27.42921
Race4Grammar	39	20.00	90.00	56.9231	20.02023
Race Grammar (Total)	39	20.00	97.50	50.6410	19.54851
Valid N (listwise)	39				

By referring to Table 3, the difference in mean of the vocabulary scores shows that there isn't a significant grammar attrition in Race section.

Table 4. Tests of Between-Subjects Effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Intercept	400064.103	1	400064.103	261.723	.000
Error	58085.897	38	1528.576		

The results presented in Table 4 indicate that the difference in grammar mean scores within Race section is significant (F=261.723, sig.= .000). Tables 5 and 6 show the results of the descriptive statistics and the repeated measures ANOVA for the Reach levels.

	N	Minimum	Maximum	Mean	Std. Deviation
Reach1 Grammar	38	10.00	90.00	53.4211	24.85377
Reach2 Grammar	38	20.00	100.00	68.4211	19.10516
Reach3 Grammar	38	10.00	100.00	72.1053	18.62255
Reach4 Grammar	38	30.00	100.00	72.1053	16.46584
Reach Grammar (Total)	38	22.50	95.00	66.5132	15.01733
Valid N (listwise)	38				

Table 5. Descriptive Statistics of Participants' Scores on Grammar Tests (Reach)

As Table 5 shows, the means of grammar scores increased from Reach 1 (mean=53.42) to Reach 4 (mean= 72.10). The results of the descriptive statistics presented in Table 5 revealed that learners undergo a significant grammar attrition in Reach section (from Reach 1 to Reach 3).

 Table 6. Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	672448.026	1	672448.026	745.441	.000
Error	33376.974	37	902.080		

According to Table 6, there is a significant difference in grammar mean scores within different levels of Reach section (F=745.441, sig.= .000).

The second objective of the study was to investigate if language attrition occurs in different levels and sections of young adult Iranian EFL learners (in terms of grammar) with the same degree. To search the difference among different levels and sections, the researcher ran the repeated measures. Tables 7, shows the pertaining results.

Table 7. Tests of Between-Subjects Effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Intercept	1541184.430	1	1541184.430	1019.061	.000
Error	55957.237	37	1512.358		

The Results presented in Table 7 indicate that different levels of young adult Iranian EFL learners are significantly different in terms of difference of mean scores (sig.=.000).

The ultimate goal of the present study was to find if an EFL component i.e. grammar, is affected by attrition. This study also aimed to investigate if language attrition occurs in different levels and sections of young adult Iranian EFL learners in terms of grammar

with the same degree. In what follows, the research questions are answered in light of the findings of the study:

Is grammar as an EFL component affected by attrition?

According to the results of this study Reach section learners undergo significant grammar attrition. Language attrition is studied since scholars are interested in knowing about attrition processes and has substantial pedagogical implications (Hansen, 2001a). Researchers have searched the amount and rate of attrition in different skills and areas of the language that is undergoing attrition and have come up with numerous results.

Some studies have concluded that grammar is more resilient to attrition in comparison to other language components. The researchers suggested that the loss of such linguistic structures in second language attrition was due to differences in proficiency. Other researchers like Yoshitomi (1992) support that proficiency differences are the source of different patterns in first and second language attrition.

Does language attrition occur in different levels and sections of young adult Iranian EFL learners in terms of grammar with the same degree?

The results of the repeated measures revealed that the degrees of grammar attrition in Reach levels were not significantly different. One learner-internal variable that has been frequently reported to be important on subsequent attrition in the literature of foreign language attrition is the attained proficiency level (Bahrick, 1984). However, to date, there have been few studies which have addressed this issue directly. Perhaps one of the most essential issues in language attrition research is the rate of forgetting. There is some evidence that a rapid decline of foreign language target vocabulary occurred soon after formal instruction had ended (Abbasian & Khajavi, 2010; Alharthi, 2012; Bahrick, 1984; Bierling, 1990; Weltens, 1989). The results of the present study are in line with the findings of the previous studies (Bahrick, 1984; and Weltens, 1989; Alharthi, 2012).

In a study conducted by Bahrick (1984) and Weltens (1989), the results showed that proficiency and the amount of attrition were independent. Similarly, Alharthi's (2012) findings revealed that the amount of attrition was the same for his participants regardless of their level of attainment.

In some of the previous studies such as Olshtain (1989), it was shown that the advanced students were more resistant to attrition in comparison to the low-proficiency students. But the results of the current study revealed that the advanced students experienced attrition, as well. This might be due to some intervening variables such as the amount of out-of-class exposure, attitude, motivation, teaching methodology and so forth which are not involved in this study.

CONCLUSIONS AND PEDAGOGICAL IMPLICATIONS

The results of the repeated measures revealed that learners with higher levels of proficiency display greater attrition in grammar. Moorcroft & Gardner's (1987) and Weltsen, Van Els and Schils (1989) also concluded that learners undergo the grammar attrition.

To answer the second research question, "Does language attrition occur in different levels of young adult Iranian EFL learners in terms of grammar with the same degree?" the researcher employed the repeated measure analysis. The results revealed that the difference in different levels of Run, Race and Reach (with grammar attrition) sections, were significantly different. The results of the previous studies (Bahrick, 1984; and Weltens, 1989; Alharthi, 2012) also revealed that level of proficiency doesn't affect the degree of attrition. Based on the results of the present study, EFL learners experienced attrition in advanced levels. Therefore, course designers can consider a bridge course with remedial purpose after learners finish each section and before starting to learn the next section. This bridge course which can help curbing or slowing down the rate of attrition, contains a review of the materials that learners have studied in all levels of the section they have just passed.

Another suggestion for course designers and also materials developers can be having those EFL learners who have finished each of the three sections of Run, Race, and Reach levels, to take a test which includes a summary of the materials of the section they have already passed. The students who pass these tests successfully, are allowed to move to the next section and those who fail the tests, first attend the remedial course, then proceed to the next section. In this way, the classes will contain students with almost the same proficiency level. It also prevents EFL learners from experiencing attrition.

In addition, the findings of the present study might imply that teachers need to pay more attention to learners' language attrition. Furthermore, English language teachers should make modifications with their teaching methodologies based on the results of this study to put more emphasis on the areas which turn out to be vulnerable to attrition.

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