

Acquisition and Accurate Use of English Articles by Persian Speakers

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Abstract

This study was conducted with the purpose of examining Persian speakers' article acquisition and use with reference to Ionin, Ko and Wexler's (2004) model, which is based on the prediction of Fluctuation Hypothesis (FH) that EFL learners of [-article] languages, like Persian, make erroneous article use in [+definite, -specific] and [-definite, +specific] contexts. From among the students of an Iranian university, 90 participants were randomly selected and divided into three groups based on their proficiency levels (elementary, intermediate and advanced). They completed a forced-choice elicitation task, consisting of 20 dialogues, similar to Ionin et al.'s (2004) questionnaire. It was hypothesized that as proficiency level increases, the accuracy level increases, while article misuse and omission decrease. The overall results suggested that the performance of the participants of the study, even the advanced group, was below the ceiling level (90% accuracy observed in native and near-native speakers). Moreover, as the level of proficiency increased, the accuracy level of article use increased and omission error decreased, but article misuse showed no significant decrease. It was concluded that low performance of Persian speakers is due to the lack of correspondence between Persian and English determiner phrase (DP) structures and lack of adequate input.

Keywords: Article Choice Parameter (ACP), definiteness, Fluctuation Hypothesis (FH)

Introduction

Investigating the L2 acquisition of properties of the nominal domain has been the concern of many second language (SLA) studies (Garcia Mayo & Hawkins, 2009). Meanwhile, the acquisition of English determiners has attracted more attention, due to the difficulty most SLA learners encounter in their acquisition (Hawkins, et al., 2006; Ionin, Ko & Wexler, 2004; Lu, 2001; Master, 2002; Murphy, 1997; White, 2003a). As stated by Garcia Mayo and Hawkins (2009), not only may the problem persist until very late stages of language acquisition, but many learners also do not reach native-like level of performance. This trend has been observed with both L2 learners with article systems (+Art) similar to English and those whose languages lack the system (-Art), such as Russian and Korean (Hawkins et al., 2006).

One area of recent research on the acquisition of English articles is the potential influence of L1 on their acquisition. Some studies suggest that L1 transfer may affect L2 learners' acquisition of articles (e.g. Hawkins, et al., 2006; Trademan, 2002). For example, some L2 learners with L1s lacking article systems tend to overgeneralize null article in both definite and indefinite contexts (Zdorenko & Paradis, 2008). Ionin et al. (2004) reported fluctuation between their use of definite and indefinite articles. Many studies like Ionin, Zubizarreta and Bautista (2008) have been done to make decision between fluctuation and transfer as the more overriding factors. Consequently, Ionin et al. (2008) counted three influential factors in the acquisition of English articles for the

learners whose L1s have article systems like English and those whose L1s lack the system. The factors include "L2 input, L1 transfer and UG-based knowledge in the domain of article system" (p.554).

Many studies have investigated English article acquisition especially with languages that lack English-like article systems; however, to the best of the researcher's knowledge, almost no investigation of article acquisition by Persian learners of English is reported with more widely accepted theoretical frameworks like Ionin et al.'s (2004). For example, Geranpayeh (2000) used traditional Contrastive Analysis (CA) and prediction framework with Iranian ESL participants all residing in the UK. Rezaee and Jabbari (2010) worked with intermediate and advanced Iranian learners within the framework of 'Interpretability Hypothesis'. Momenzadeh and Youhanaee (2014) used grammaticality judgement within the framework of 'Feature Re-assembly Hypothesis' to explore Iranian EFL learners' *number and article system* acquisition, and Ghazi Joolae and Ghonsooli (2015) focused on the acquisition of 'the' by using the Error Analysis (EA) framework. Thus, more studies with Persian speakers may lead to a better understanding of determining factors in the acquisition of articles and formulating sounder SLA theories. Hence, the present study reports a cross-sectional study by using Ionin et al.'s (2004) model, assumed as the most widely accepted framework in the analysis of Persian L2 learners' article use and acquisition.

Background

Theoretical Accounts of Article Acquisition

After reflection on article misuse especially by L2 learners of the languages lacking article system similar to English, Ionin et al. (2004) came to the conclusion that the learners' errors are due to their failure to set the *Article Choice Parameter* (ACP). According to the parameter, a semantic contrast should be observed between specificity and definiteness in two-article systems. Ionin et al. (2004, p.5) define specificity and definiteness as:

If a Determiner Phrase (DP) of the form [D NP] is...

- a. [+ definite], then the speaker and hearer presuppose the existence of a unique individual in the set denoted by the NP.
- b. [+ specific], then the speaker intends to refer to a unique individual in the set denoted by the NP and considers this individual to possess some noteworthy property.

English article system is marked by definiteness, while the system in some other languages such as Samoan is marked by specificity (Lyons, 1999 cited in Zdorenko & Paradis, 2008). In other words, in English article system, articles are either definite or indefinite, whereas in Samoan articles are either specific or non-specific. Ionin et al. (2004, p.12) define ACP as:

The Article Choice Parameter (for two-article languages): A language that has two articles distinguishes them as follows. 1)The Definiteness setting: Articles are distinguished on the basis of definiteness. 2)The Specificity setting: Articles are distinguished on the basis of specificity.

The following examples show the distinction between specificity and definiteness (Ionin et al. 2004, p.8):

- a) I'd like to talk to the winner of today's race – she is my best friend!
- b) I'd like to talk to the winner of today's race – whoever that is; I'm writing a story about him for the newspaper.

In both (a) and (b) the winner is [+definite], but it is [+specific] in (a) and [-specific] in (b), so English article system does not depend on the specificity distinction (Zdorenko & Paradis, 2008).

In a study on Russian and Korean learners of English, Ionin et al. (2004) observed that the participants fluctuated between the definiteness and specificity parameters. They concluded that since both parameters are provided by UG, and learners' L1s lacked neither of the parameters,

they fluctuated between the parameters unless they obtained enough input to set the correct one. Hence, Ionin et al. (2004) postulated the Fluctuation Hypothesis (FH). They found high overuse of *the* with specific indefinite contexts and more target-like article use in non-specific indefinite and definite contexts.

However, FH can only be applied to the situations where learners' first languages lack English-like binary article systems. In case of languages with similar article system to English, L1 transfer should also be considered as a determining factor (Hawkins, 2001; Hawkins, et al., 2006). In addition, the FH can only explain article misuse, not omission (Zdorenko & Paradis, 2008). Full Transfer/Full Access (FT/FA) of Schwartz and Sprouse (1996), on the other hand, can be used to account for languages with and without articles, article omission and article misuse (Zdorenko & Paradis, 2008). According to White (2003b), initial state starts with L1 abstract properties. If L2 learners notice some discrepancies between L1 grammar and L2 input, they will turn to other UG options for parameter resetting. It takes time and needs adequate L2 input for the learners to arrive at a hypothesis more appropriate to L2 grammar.

Studies on the Acquisition of Articles

Early studies on the acquisition of articles were mostly influenced by Bickerton's (1981) binary semantic system (Hawkins, 2001). According to this system, the distinction between article L2 use is based on two binary features, [+/- specific referent] and [+/- hearer knowledge]. The former asks whether the article and associated NP refer to a specific entity, while the latter asks whether the hearer or the reader knows the article and its NP. Garcia Mayo (2009) cited three of such studies. The first one is a study by Parrish (1987) who studied a 19-year old Japanese learner of English by eliciting oral data. She found that null article and *the* were acquired first and then *a* started to emerge in the later stages of development. The second study was done by Thomas (1989) focusing on the similarities and differences between L1 and L2 patterns of article acquisition. She worked with seven learners from languages with articles including French, German, Italian, Spanish and Greek and 23 from languages without articles (Japanese, Korean, Finnish and Chinese). She concluded that the acquisition order of articles is different in learners with different L1s, and that [+article] L2 learners were better than [-article] L2 learners. In another study, Morphy (1997) came to the same conclusion with 30 adult Korean and Spanish L2 learners of English. Korean learners [-article] had more omission errors than Spanish learners [+article]. The main finding of the three studies, according to Garcia Mayo (2009), was the sequence of the acquisition of English articles; first *null*, then *the* and finally *a*. In addition, the learners of [-article] languages seem to overuse the definite article in [+specific referent, +hearer knowledge] contexts.

More recent studies have followed Ionin et al.'s (2004) binary model and of article systems, their Fluctuation Hypothesis (FH) and Schwartz and Sprouse's (1996) FT/FA framework. Hawkins et al.'s (2006) study is a good example. The study was conducted with 12 Japanese and 12 Greek upper-intermediate and advanced learners of English. It was postulated that since Japanese is a [-article] language, Japanese learners would fluctuate between allowing English articles to encode definiteness and specificity. On the other hand, Greek learners would transfer marking of definiteness from Greek to English. They used a forced-choice elicitation task, and the findings of the study revealed that unlike Greek learners, Japanese learners fluctuate between interpreting *the* as a marker of definiteness and specificity.

In another study, Snape, Leung and Ting (2006) studied a group of Japanese, Spanish, and Chinese intermediate L2 learners. They found that Japanese learners fluctuated between definiteness and specificity in [-definite, +specific] and [+definite, -specific] contexts as expected

with reference to FH. In contrast, the Spanish L2 learners performed like native speaker control group. Chinese learners also showed the results similar to Spanish speakers.

Ionin et al. (2008) conducted a study with FT/FA framework, addressing L1 transfer, UG-based knowledge and the relevance of L2 input. They believed that a thorough study of article acquisition should include all these factors. The participants of their study were L1-Russian and L1-Spanish (Mexican) learners with different levels of proficiency. A cloze test was used to test their language proficiency, and two written tests and an elicitation test of English were given to test their article knowledge. In line with previous studies, Spanish speakers did not fluctuate, but Russian speakers did. They concluded that Spanish speakers were able to transfer article semantics from Spanish to English, for the article semantic systems of the two languages are similar. In contrast, Russian speakers were not able to transfer because their language lacks the same semantic features. In terms of proficiency levels, they found that accuracy of definite and indefinite articles increased with proficiency levels.

Garcia Mayo (2009) also studied a group of 60 Spanish speakers with two different proficiency levels (low-intermediate and advanced levels). They completed a written forced-choice elicitation task in English. Results of the statistical analysis revealed that Spanish speakers chose *the* to mark definiteness and *a(n)* to mark indefiniteness; fluctuation was unimportant.

Sarko (2009) studied the use of English articles by speakers of Syrian Arabic and French. Both languages have definite articles; however, Syrian Arabic is different from English in having no phonologically overt indicator of indefiniteness, but French requires phonologically overt indicator of definiteness and indefiniteness in all contexts. Sarko used a written forced-choice elicitation task and an oral story recall task. The results indicated evidence of L1 transfer in line with FT/FA hypothesis.

Some studies have already been done in the context of the present study. As an example, Granpayeh (2000) attempted to examine the difficulty Persian speakers might experience with English article acquisition. All participants of his study were ESL learners of Edinburg and Newcastle Universities. Those with one year residing in the UK were considered as intermediate and more than that were supposed to be advanced ESL learners. Analysis of the results of a 'filling of the gap test' and an 'error correction test' revealed that definite NP was the least problematic for all the participants, and for indefinite categories, specific entities were more identifiable. Relying on the contrastive analysis of both languages, he also found that as Persian is a pro-drop language, Persian ESL learners tended to use demonstratives in subject NP position. Similarly, Rezaee and Jabbari (2010) used CA framework to pinpoint that Persian and English are different in that English articles have both LF and PF representations, while it is only interpretable at the level of LF in Persian. However, according to 'Interpretability Hypothesis', Persian speakers were able to acquire the definiteness feature of articles, since it was accessible and interpretable at LF level. Momenzadeh and Youhanaee (2014) examined the grammaticality judgements of 43 students majoring in teaching English. They wanted to see if they could acquire '*number and English article system*'. Responses of the participants on an 80 item test revealed that unlike indefinite articles, definite articles seemed to pose problems even for the advanced group. Ghazi Joolaei and Ghonsooly (2015), in another study, focused on the difficulty Persian speakers might experience while acquiring article 'the'. Thirty intermediate and advanced students majoring in English translation answered 35 grammatical items focusing on English articles. The researchers used traditional EA framework to categorize errors into interlingual and intralingual errors and found that only advanced students avoided erroneous substitution of 'the' with 'a'. As evident, the discrepancy among the results suggested the need for more and deeper investigation of article acquisition by Persian Speakers.

Persian and English DP structures

English is a language with a complete article system (Hawkins, 2001). It has three articles, *the*, *a* and \emptyset (zero). They have different interpretations that can be discussed with reference to Bickerton's (1981) and Ionin et al.'s (2004) frameworks mentioned above. Persian language, on the other hand, is a [-article] language, though like Mandarin, Cantonese, Korean and Japanese, Persian has some means of expressing semantic features like definiteness. In Persian, like Mandarin (Zdorenko & Paradis, 2008), definiteness and indefiniteness can be marked by the use of demonstrative pronouns /i:n/ meaning 'this' and /a:n/ for 'that' and the numerical /jek/ for 'one'. In addition, /i:/ can be added to the end of NPs as an indefiniteness marker. However, neither demonstrative pronouns nor the numerical is considered as article systems (Zdorenko & Paradis, 2008). Hence, Persian language is labeled as articleless language in this study.

Research questions and hypotheses

This study was conducted to answer the following research questions:

- Q1. What is the effect of learners' proficiency levels on the number of article misuse and incorrect article omission?
- Q2. Do L1 Persian speakers fluctuate between specificity and definiteness settings of ACP in specific indefinite contexts?
- Q3. Does lack of English-like DP structure in Persian result in omission errors?

With regard to the lack of parallelism between article semantics in English and Persian, the following hypotheses were formulated in this study:

- 1) As the learners' proficiency levels increase, the number of incorrect article omission decreases.
- 2) L1 Persian speakers fluctuate between specificity and definiteness settings of ACP in specific indefinite contexts. In other words, Functional Hypothesis predicts two types of errors: "*the* misuse in [+specific, -definite] contexts and *a* misuse in [-specific, +definite] contexts (Ionin et al., 2004, p.19)".
- 3) Lack of English-like DP structure in Persian results in many omission errors.

Method

Participants

The 90 participants of the present study were randomly selected from students of an Iranian university majoring in English translation. They were divided into three groups depending on the number of years studying English at this University. In addition, as the focus of the study was on English articles, the grammar section of the Oxford Placement Test (Allan, 1992) was used as a confirmatory evidence for such grouping. The elementary group consisted of 22 female and eight male students ranging in age from 19 to 22. The intermediate group consisted of 25 female and five male students. Their age ranged from 21 to 25. The advanced group involved 21 female and nine male students ranging in age from 22 to 31. Table 1 summarizes the information about the groups.

Table 1. Participants of the Study

Group	n	Age range	Score range	English Classroom (years)
Elementary (22F/8M)	30	19-22	30-42	1-2 (freshmen & Sophomore)
Intermediate (25F/5M)	30	21-25	67-73	3-4 (junior & senior)

Advanced (21F/9M)	30	22-31	85-95	5-6 (MA)
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Instruments

The instrument of this study was the same as Ionin et al.'s (2004) forced-choice elicitation task, except for the number of dialogues. The original task consisted of 76 short dialogues, and as far as the validity concerns, they confirmed that the format and the content provides a full control over all four possible contexts of definiteness and specificity. Elimination of the items in this study was done for practical reasons and the fact that the scope of this study was not as wide as Ionin et al.'s. However, the 20 chosen items as shown in the following table cover all four possible contexts of definiteness and specificity framework, and after consulting with two university professors in the field of linguistics, they confirmed the content validity of the task. The following table indicates the contents of the task:

Table 2. Components of the Forced-choice Elicitation Task

Context	[+definite](target: <i>the</i>)	[-definite](target: <i>a</i>)
[+specific]	5 dialogues	5 dialogues
[-specific]	5 dialogues	5 dialogues

Each dialogue was followed by three choices including *the*, *a/an* and \emptyset . The contexts provided by the dialogues allowed the researcher to test predictions about fluctuation of Persian speakers between definiteness and specificity. The task was given to control group native speakers by Garcia Mayo (2009) and Ionin et al. (2008). In both studies, the researchers faced with only two problematic cases, and as expected, native speakers made correct choices nearly in all cases. The following are instances of the dialogues designed by Ionin et al. (2004, p.68):

1) [+definite, +specific] Conversation between two police officers

Police Officer Clark: I haven't seen you in a long time. You must be very busy.

Police Officer Smith: Yes. Did you hear about Miss Sarah Andrews, a famous lawyer who was murdered several weeks ago? We are trying to find (a, the, ___) murderer of Miss Andrews – his name is Roger Williams, and he is a well-known criminal.

2) [+definite, –specific] Conversation between a police officer and a reporter

Reporter: Several days ago, Mr. James Peterson, a famous politician, was murdered! Are you investigating his murder?

Police officer: Yes. We are trying to find (a, the, ___) murderer of Mr. Peterson – but we still don't know who he is.

3) [–definite, +specific] In an airport, in a crowd of people who are meeting arriving passengers

Man: Excuse me, do you work here?

Security guard: Yes.

Man: In that case, perhaps you could help me. I am trying to find (a, the ___) red-haired girl. I think that she flew in on Flight 2329.

4) [–definite, –specific] In a children's library

Child: I'd like to get something to read, but I don't know what myself.

Librarian: Well, what are some of your interests? We have books on any subject.

Child: Well, I like all sorts of things that move – cars, trains ... I know! I would like to get (a, the, ___) book about airplanes! I like to read about flying!

In terms of reliability, Ionin et al. had no mention of reliability estimate, but since shortening of the task items could be regarded as a threat to its reliability, the Cronbach alpha coefficient was estimated as the index of its internal consistency and it was .72.

Procedure

The data collection took place in university classroom settings for all participants of the study. They were randomly selected from among the students of an Iranian University, ranging from freshman to MA. All of them were English students. First, they participated in the grammar section of Allan's (1992) Oxford Placement Test. Based on the results of the test and years of studying in the university, 90 students were chosen for the second test which was the same as Ionin et al.'s (2004) forced-choice elicitation task. They were told that they would be reading 20 dialogues and were asked to decide among the three choices including *the*, *a*, or no article. In addition, the participants were asked to fill out the first part of the questionnaire with information about their gender, age, length of exposure to English and setting of the exposure.

Results

In this section, the results of the Forced-choice elicitation task are presented for each proficiency level. Then a comparison is made among the performance of all groups.

Results of the Elementary Group

The results of the 30 participants of this group have been summarized in the following table.

Table 3. Results of Elementary Learners in all Contexts

	[+definite](target <i>the</i>)		[-definite] (target <i>a</i>)	
	<i>the</i>		<i>a</i>	<i>the</i>
	<i>omission</i>		<i>omission</i>	<i>a</i>
[+specific]	85 (57%)	24(16%)	23(15%)	87(58%)
	41(27%)		40(27%)	
[-specific]	80 (53%)	25(17%)	33(22%)	86(57%)
	45(30%)		31(21%)	

As evident in the table, the elementary learners participating in the study had some problems with making distinction between English articles in general. Level of accuracy of both definite and indefinite articles in either [+specific] or [-specific] context is low (53%-58%). According to the previous research and especially native speakers' performance as the control group, the accuracy of 90% and above is considered as at ceiling (Zdorenko & Paradis, 2008). In all cases, the accuracy level was lower than the ceiling level.

In addition, the percentage of correct use of *the* was higher in [+specific] than [-specific], yet the mean difference was not significant [$t = .712$, $df = 29$, $p = .482$]. Similar results were obtained for the correct use of *a*, 58% and 57% in [+specific] and [-specific] contexts respectively.

Another concern of this study was to investigate the misuse of *a* in [+definite] and [+/-specific] contexts. The results suggest that Persian speakers [-article] showed slightly higher level

of misuse in [-specific] context as predicted by FH, yet conducting paired samples t-test revealed that the difference was not significant [$t = 1.581$, $df = 29$, $p = .125$]. Another expected result was *the* misuse in the context of [+/-specific]. The table suggests that the misuse was higher in [-specific], but statistical analysis showed the difference was not significant [$t = .474$, $df = 29$, $p = .489$]. Moreover, the information of table 3 and figure 1 suggests that in [+definite] context *omission* error was more than *a* misuse in both [+/-specific] contexts.

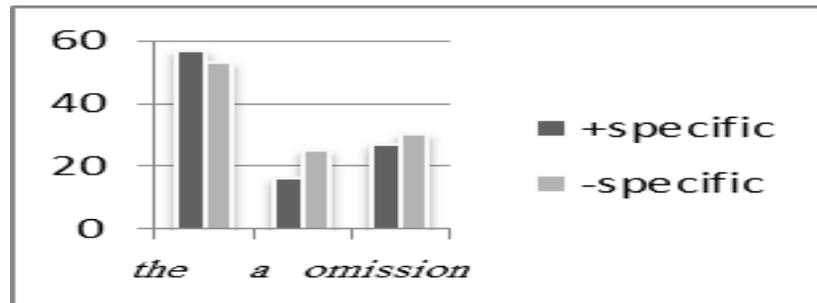


Figure 1. Elementary Learners Use of Articles in [+definite] Contexts

Similar results were obtained for [-definite] context. As shown in the following figure, *omission* error is higher than *the* misuse in both [+/-specific] contexts.

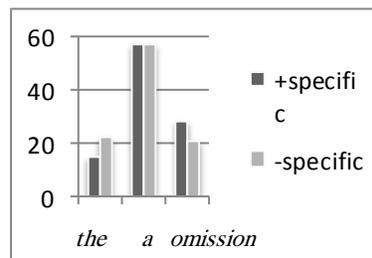


Figure 2. Elementary Learners Use of Articles in [-definite] Contexts

Results of the Intermediate Group

Table 4 and figures 3 and 4 represent the results of article use and misuse by the intermediate group.

Table 4. Results of Intermediate Learners in all Contexts

	[+definite](target <i>the</i>)		[-definite] (target <i>a</i>)	
	<i>the</i> <i>omission</i>		<i>a</i> <i>the</i> <i>omission</i>	<i>a</i>
[+specific]	99 (66%) 37(25%)	14(9%)	21(14%) 44(29%)	85(57%)
[-specific]	91 (61%) 39(26%)	20(13%)	28(19%) 35(23%)	87(58%)

If 90% and above is considered as the optimal performance, intermediate learners could not reach that point. Correct use of [+/- definite] articles ranges from 57% to 66%, and unlike elementary level learners, better results are observed with *the* use. In [+definite] contexts, higher

level of correct use of *the* is observed in [+specific] context, but using paired samples t-test analysis showed that it was not significant [$t = 1.204, df = 29, p = .238$].

With regard to *a* misuse in [+definite] context, both table 4 and figure 3 indicate higher levels in [-specific] context, yet statistical analysis proved the difference was not significant [$t = .583, df = 29, p = .564$].

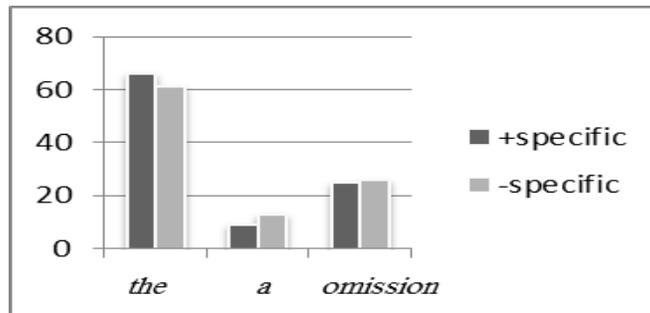


Figure 3. Intermediate Learners Use of Articles in [+definite] Contexts

Figure 4 reveals a difference between *the* misuse in the context of [+/-specific]. Paired t-test analysis, however, indicated that this difference was not significant [$t = 1.564, df = 29, p = .129$].

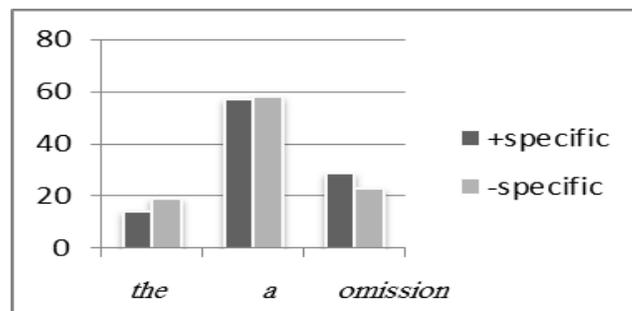


Figure 4. Intermediate Learners Use of Articles in [-definite] Contexts

In terms of *omission* error, figures 3 and 4 suggest a considerable level of article omission among intermediate EFL learners. This type of error is observed in both [+/-definite] and [+/-specific] contexts.

Results of the Advanced Group

The results obtained from 30 advanced participants of the study are summarized in table 5, figures 5 and 6.

Table 5. Results of Advanced Learners in all Contexts

	[+definite](target <i>the</i>)		[-definite] (target <i>a</i>)	
	<i>the</i>	<i>omission</i>	<i>a</i>	<i>the</i> <i>omission</i>
[+specific]	129 (86%)	12(8%)	9(6%)	23(15%) 15(10%)
[-specific]	105 (70%)	25(17%)	20(13%)	23(15%) 26(18%)
				112(75%) 101(67%)

The information in table 5 suggests that English article system is even problematic for Persian advanced EFL learners. The first item, which comes very close to the expected ceiling in advanced level, is article *the* in [+specific] context. Other cases are below 90% but higher than elementary and intermediate levels. Figure 5 indicates that advance group showed more correct use of *the* in [+specific] context. In contrast with elementary and intermediate groups, this difference was significant [$t = 3.788, df = 29, p < .05$].

Figure 5 indicates that in line with FH more participants made *a* misuse in [+definite, -specific] context, and the difference proved to be significant [$t = 2.363, df = 29, p < .05$].

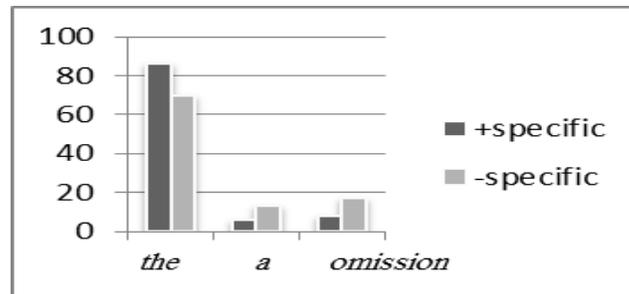


Figure 5. Advanced Learners Use of Articles in [+definite] Contexts

However, the information of figure 6 is not in favor of FH, since *the* misuse is exactly the same for both [-definite, +specific] and [-definite, -specific] contexts.

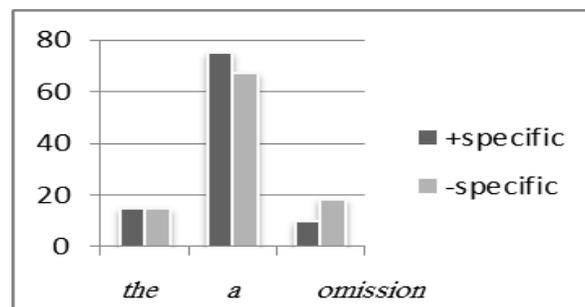


Figure 6. Advanced Learners Use of Articles in [-definite] Contexts

Finally, table 5, figure 5 and 6 indicate that *omission* error does exist in advanced level. In both [+definite] and [-definite] contexts, higher levels of *omission* error was observed in [-specific] context.

Results of Article Use in Different Proficiency Levels

To determine the effect of language proficiency or years of exposure on Persian speakers' article use, one-way ANOVA analysis was conducted to the data obtained from the participants of different proficiency levels in four different contexts. The results of this part can also shed some light on the article acquisition of Persian EFL learners.

First, the learners of three proficiency levels were examined in terms of the correct use of [+definite] article in both [+specific] and [-specific] contexts. The following table shows the ANOVA analysis of [+definite, +specific] context:

Table 6. ANOVA of [+definite] Article Use in [+specific] Context

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	36.356	2	18.178	13.448	.000
Within Groups	117.600	87	1.352		
Total	153.956	89			

Since the results showed the significant difference between the means of the groups, Bonferroni post-hoc was used to locate the exact place of difference. It revealed that the participants of advanced group significantly performed better than elementary and intermediate in the [+definite, +specific] context. The same analysis was applied to [+definite, -specific] context and the following results were obtained:

Table 7. ANOVA of [+definite] Article Use in [-specific] Context

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	14.067	2	7.033	7.570	.001
Within Groups	80.833	87	.929		
Total	94.900	89			

Using Bonferroni post-hoc analysis showed that the only significant difference is between advanced and elementary groups.

The next ANOVA analysis was conducted to find whether there was a significant difference among the means of the groups in terms of correct use of *a* in [+specific] and [-specific] contexts. The following table shows the results:

Table 8. ANOVA of [-definite] Article Use in [+/-specific] Contexts

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	93.067	2	46.533	21.416	.000
Within Groups	189.033	87	2.173		
Total	282.100	89			

The results of Bonferroni post-hoc analysis suggest that there was a significant difference between the means of three groups. It means that intermediate group significantly outperformed elementary group, and advanced group significantly was better than intermediate group in terms of using [-definite] article in [+/-specific] context.

The third analysis addressed article misuse. It involved the misuse of [+definite] article in [+/-specific] contexts and [-definite] article misuse in [+/-specific] contexts. With regard to *the* misuse in [+specific] context, the following results were obtained:

Table 9. ANOVA of the Misuse in [+specific] Context

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.356	2	2.178	4.741	.011
Within Groups	39.967	87	.459		
Total	44.322	89			

Since the results showed significant difference among the three proficiency groups, Bonferroni post-hoc was used which indicated no significant difference between intermediate and advanced groups. However, the results revealed that advanced group was significantly different from the elementary group. The results of ANOVA analysis, however, showed significant difference between elementary and advanced groups.

Table 10. ANOVA of the Misuse in [-specific] Context

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.156	2	.578	.924	.401
Within Groups	54.400	87	.625		
Total	55.556	89			

As evident in table 11, there is no significant difference among the means of the groups in terms of [-definite] article misuse in [+specific] context.

Table 11. ANOVA of a Misuse in [+specific] Context

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.000	2	.000	.000	1.000
Within Groups	70.100	87	.806		
Total	70.100	89			

Similarly, no significant difference was observed in the performance of the groups in terms of article misuse in [-definite, -specific] context (table 12).

Table 12. ANOVA of a Misuse in [-specific] Context

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.689	2	.844	.933	.397
Within Groups	78.767	87	.905		

Total	80.456	89
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The last ANOVA analysis was conducted to find the possible difference among the means of the groups with regard to the incorrect article omission. Table 13 features the results.

Table 13. ANOVA of Article Omission

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	140.600	2	70.300	16.167	.000
Within Groups	378.300	87	4.348		
Total	518.900	89			

The results indicated a significant difference among the means of the groups. To reveal the exact place of difference, Bonferroni post-hoc analysis was conducted, and the results showed no difference between elementary and intermediate groups. Both groups had higher rate of inaccurate article omission than the advanced group. In other words, inaccurate article omission significantly decreased in the advanced group.

Discussion

In this section, the results of the study are compared and contrasted in relation to the previous findings in order to test the research hypotheses of the study.

First, the results of three proficiency levels suggest that Persian speakers, regardless of their levels, had problems with using English articles. Their accuracy level for both [+definite] and [-definite] contexts was below the optimum level of 90% accuracy. Momenzadeh and Youhanaee (2014) came to the same conclusion when they compared their results with the control group native speakers. Garcia Mayo and Hawkins (2009) and Hawkins, et al. (2006) came to the same conclusion that the problem of article acquisition may persist until the very late stages of language acquisition, and many learners do not reach native-like level of performance. The only case which was near the level was advanced learners' *the* use in [+definite, +specific] context (86%). Lardiere (2004), Robertson (2000) and White (2003a) found similar results in their studies with [-article] languages. Learners were more accurate in choosing the definite article in [+definite] contexts than indefinite article in [-definite] contexts. Anderson (1978) came to the same conclusion with Spanish [+article] speakers. Hawkins, et al. (2006, p.21) explain this with reference to "featural context of insertion for articles: *a* is inserted in [D, -definite, +singular] contexts, *the* inserted in [D,+definite] contexts. Thus in order to use *a* appropriately, learners have to identify the feature [singular] as relevant for the insertion of this article". Lardiere (2004, p. 335) refers to the same hypothesis that "definite articles in English need not take number and the count/mass distinction into account, which makes them less featurally complex than indefinites in at least one respect". In other words, regarding the acquisition of English article system, Persian speakers followed the same order of previous studies. The first article that was acquired was *the* followed by *a* (Garcia Mayo, 2009); however, the results of the study could not reveal anything about the acquisition of *null article*. In contrast, Su (2016) conducted a study with 18 ESL learners with different L1 Backgrounds, studying in a university in the United States,

revealed that the sequence of article acquisition was ‘a’, ‘the’ and ‘zero-article’ for both +Art and –Art languages.

With regard to the second question of the study, FH predicted two types of errors: *the* misuse in [+specific, -definite] contexts and *a* misuse in [-specific, +definite] contexts. The errors were found in all proficiency levels, yet in contrast with the prediction of the hypothesis, elementary and intermediate learners did not fluctuate between [+/-specificity] contexts; the observed difference was not significant. However, advanced learners fluctuate between article use in [+definite, -specific] context but not in [-definite, +specific] context. In other words, they misused indefinite article in [+definite,-specific] context but showed no sensitivity to make distinction between [+specific, -definite] and [-specific,-definite] contexts. Another piece of evidence which can be used in favor of FH is higher rate of definite article in [+definite, +specific] context. Comparing [+definite, +specific] and [+definite, -specific] cases of three proficiency levels reveals that although in all cases higher rates of [+definite, +specific] are observed, the difference is only significant in advanced learners. Consequently, FH and ACP could only predict the performance of advanced learners, and the evidence accumulated from elementary and intermediate could not pave the way for accepting the Ionin et al.’s FH hypothesis. To save the hypothesis, it may be hypothesized that even for article fluctuation some threshold level of input is necessary. It seems that only advanced learners reach that level.

The third hypothesis of the study predicted many omission errors due to the lack of the correspondance between English and Persian DP structures. The data from three proficiency groups indicated many omission errors. This was in line with Geranpayeh (2000) that as Persian is a pro-drop language, Persian English learners must have problems with NPs in subject position. The same trend was observed in Morphy’s (1997) study. Korean speakers showed higher levels of English article omission error than Spanish speakers. Persian and Korean are similar in that both are [-article] languages. High rate of omission may be due to the overgeneralization of null article in both definite and indefinite contexts (Zdorenko & Paradis, 2008). Similar results also obtained by Chrabaszcz and Jiang’s (2014) study with Russian (lacking English like article system) English learners. Elementary and intermediate learners showed higher levels of omission, while it decreased in the advanced group. Statistical analysis proved that advanced group significantly had lower rate of omission errors, but there was no significant difference between the means of elementary and intermediate groups. The same result was obtained by Garcia Mayo (2009) that omission error decreased as the learners’ proficiency levels increased. In addition, as Ionin et al. (2008) state, input is a determining factor in article acquisition.

The data presented in previous section was used as a confirming evidence that as learners’ proficiency levels increase, the number of article misuse decreases. It is in line with many cross-sectional studies with different proficiency levels (e.g. Garcia Mayo, 2009; Hawkins, et al., 2006; Ionin et al., 2004; Ionin et al., 2008; Lardiere, 2004). Surprisingly, although the rate of correct cases increased significantly with the proficiency level, no significant decrease in article misuse was observed in many cases. For example, *a* misuse did not decrease in [+/-specific] context, nor did *the* misuse decrease in [-specific] context. However, *the* misuse decreased significantly with advanced learners and in [+specific] context. It can be concluded that in spite of the fact that accuracy level increased and omission error decreased with proficiency levels, the problem of article misuse still remains even with the advanced Persian speakers.

Conclusion

The main goal of the present study was to investigate the acquisition of English article system with reference to Persian speakers of different proficiency levels by using Ionin et al.'s (2004) framework. The overall results of the study showed that Persian speakers approached the so-called ceiling (90% accuracy) only in advanced level and with [+definite] article, *the*. Since Persian is a [-article] language, the main goal of the study was to test the Fluctuation Hypothesis, stating that the speakers of [-article] languages show article misuse in [+definite, -specific] and [-definite, +specific] contexts. The results of the study, however, only showed fluctuation in advanced learners of the study. In addition, many omission errors were observed in all proficiency levels, but it decreased as the proficiency level increased. It was hypothesized that it is due to the lack of correspondence between Persian and English DP structures. Moreover, in most cases, the results of the study showed significant increase in correct article use but no significant decrease in article misuse. Article omission, however, decreased as proficiency level increased. In conclusion, as the related literature suggests, article use is a challenging task for Persian speakers like EFL learners of other languages. It demands high rate of input to approach native-like competence; however, for many EFL learners it may be a formidable task.

In terms of pedagogical implications, the results could be used to diagnose the learners' fluctuation based on specificity and definiteness framework. The results can help both practitioners and material developers to highlight the problematic areas and present drills, exercises or contrastive explicit explanations at least to intermediate and advanced learners.

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Appendix

Unabridged statistical tables based on the order of their appearance in the text

Paired Samples Test of 'the' use

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Lthe [+d+s] - Lthe [+d-s]	.233	1.794	.328	-.437	.903	.712	29	.482
Pair 2 Mthe [+d+s] - Mthe [+d-s]	.333	1.516	.277	-.233	.899	1.204	29	.238
Pair 3 Hthe [+d+s] - Hthe [+d-s]	.800	1.157	.211	.368	1.232	3.788	29	.001

Paired Samples Test of 'article misuse'

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 G1+d+s - G1+d-s	-.103	1.175	.218	-.551	.344	-.474	28	.639
Pair 2 G1-d+s - G1-d-s	-.333	1.155	.211	-.765	.098	-1.581	29	.125
Pair 3 G2+d+s - G2+d-s	-.233	.817	.149	-.538	.072	-1.564	29	.129
Pair 4 G2-d+s - G2-d-s	-.133	1.252	.229	-.601	.334	-.583	29	.564
Pair 5 G3+d+s - G3+d-s	-.367	.850	.155	-.684	-.049	-2.362	29	.025
Pair 6 G3-d+s - G3-d-s	.000	.695	.127	-.259	.259	.000	29	1.000

Table of ANOVA and Post-hoc test of [+definite] Article Use in [+specific] Context

ANOVA

AnovaLMH1

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	36.356	2	18.178	13.448	.000
Within Groups	117.600	87	1.352		
Total	153.956	89			

Multiple Comparisons

Dependent Variable: AnovaLMH1

Bonferroni

(I) Grouping	(J) Grouping	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.533	.300	.237	-1.27	.20
	3	-1.533*	.300	.000	-2.27	-.80
2	1	.533	.300	.237	-.20	1.27
	3	-1.000*	.300	.004	-1.73	-.27
3	1	1.533*	.300	.000	.80	2.27
	2	1.000*	.300	.004	.27	1.73

*. The mean difference is significant at the 0.05 level.

Table of ANOVA and Post-hoc test of [+definite] Article Use in [-specific] Context

ANOVA

AnovaLMH2

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	14.067	2	7.033	7.570	.001
Within Groups	80.833	87	.929		
Total	94.900	89			

Multiple Comparisons

Dependent Variable: AnovaLMH2

Bonferroni

(I) Grouping	(J) Grouping	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.433	.249	.256	-1.04	.17
	3	-.967*	.249	.001	-1.57	-.36
2	1	.433	.249	.256	-.17	1.04
	3	-.533	.249	.105	-1.14	.07
3	1	.967*	.249	.001	.36	1.57
	2	.533	.249	.105	-.07	1.14

*. The mean difference is significant at the 0.05 level.

Table of ANOVA and Post-hoc test of [-definite] Article Use in [+/-specific] Contexts

Anova the

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	93.067	2	46.533	21.416	.000
Within Groups	189.033	87	2.173		
Total	282.100	89			

Multiple Comparisons

Dependent Variable: Anova the
Bonferroni

(I) Grouping	(J) Grouping	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.933*	.381	.049	-1.86	.00
	3	-2.467*	.381	.000	-3.40	-1.54
2	1	.933*	.381	.049	.00	1.86
	3	-1.533*	.381	.000	-2.46	-.60
3	1	2.467*	.381	.000	1.54	3.40
	2	1.533*	.381	.000	.60	2.46

*. The mean difference is significant at the 0.05 level.

Table of ANOVA and Post-hoc test of the Misuse in [+specific] Context
LMH1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.356	2	2.178	4.741	.011
Within Groups	39.967	87	.459		
Total	44.322	89			

Multiple Comparisons

Dependent Variable: LMH1
Bonferroni

(I) grouping	(J) grouping	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
L	M	.33333	.17500	.180	-.0939	.7605
	H	.53333*	.17500	.009	.1061	.9605
M	L	-.33333	.17500	.180	-.7605	.0939
	H	.20000	.17500	.769	-.2272	.6272
H	L	-.53333*	.17500	.009	-.9605	-.1061
	M	-.20000	.17500	.769	-.6272	.2272

Table of ANOVA and Post-hoc test of ANOVA of Article Omission

ANOVA

Anova Omissions

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	140.600	2	70.300	16.167	.000
Within Groups	378.300	87	4.348		
Total	518.900	89			

Multiple Comparisons

Dependent Variable: Anova Omissions

Bonferroni

(I) Grouping	(J) Grouping	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	.100	.538	1.000	-1.21	1.41
	3	2.700*	.538	.000	1.39	4.01
2	1	-.100	.538	1.000	-1.41	1.21
	3	2.600*	.538	.000	1.29	3.91
3	1	-2.700*	.538	.000	-4.01	-1.39
	2	-2.600*	.538	.000	-3.91	-1.29

*. The mean difference is significant at the 0.05 level.