THE IMPACT OF THE HEAD-INITIAL/HEAD-FINAL PARAMETER ON READING ENGLISH AS A FOREIGN LANGUAGE: A HINDERING OR A FACILITATING FACTOR?

Ataollah Maleki
atamaleki@hotmail.com

Abstract
_____

The fact that Persian is a head-final language, but English is a head-initial language may be one cause of Persian speakers' slow reading and low comprehension of English text. To examine the problem, we compared the reading skill of 75 Persian learners of English with that of 75 Turkish learners of English. Turkish like English is a head-initial language; therefore, it was hypothesized that Turkish learners perform much better on reading tests than their Persian counterparts. Two batteries of reading comprehension tests which included two types of passages were administered. The analysis of the results proved that the Turks read English faster and better than the Persians.

_____

Introduction

The fact that Persian is a head-final language (Soheili, 1989), and contrary to that, English is a head-initial language (Cook, 1988) may be a culprit in Persian speakers' slow reading and low comprehension of English text. This is evident in Persian learners of English, particularly at beginning and intermediate levels, post posing adjectives in noun phrases with adjective modifiers, noun modifiers in noun phrases, and verbs in verb phrases in natural oral and written elicitation tasks. Since Turkish, like English, is a head-initial language (Maleki, 1994), Turkish speakers, however, do not suffer from the deficiency. This is not only an SLA problem in general, but also a problem in teaching reading English.

To examine the critical involvement of the parameters in reading English as a foreign language (REFL), we have utilized the head-initial/head-final parameter as a basis to develop a set of empirical hypotheses. This is within the theory of Parameter-Setting Model of L2 acquisition (see Flynn, 1984, 1987, 1990; Liceras, 1983, 1985; White, 1985; Epstein et al., 1996), which has been proposed on the basis of the theory of Universal Grammar (Cook, 1985).

The analysis of errors, regarding the head direction of noun phrases with adjective modifiers, noun phrases with noun modifiers, and verb phrases, committed by Persian L2 learners of English vis-a`-vis their non-error status of Principal Branching Direction (PBD) (Chomsky, 1964) as well as Turkish L2 learners' lack of deficiency in both respects raises a few questions. First, if the parameters are critically involved in REFL, then what is the result of match/mismatch of the parameters in question? Second, what impact does the match/mismatch of the parameters involved have on REFL?

In the former case, it is hypothesized that the match of the parameters does facilitate reading, and increases reading speed. Taking PBD as a form of the head

parameter, we would expect that L1 speakers of Persian and Turkish use the L1 values of head parameter for PBD and consult its abstract dominant configuration in REFL. The mismatch of the parameters, however, slows down reading speed, and acts as a hindering factor. Concerning noun phrases with adjective modifiers and verbal phrases, we might expect to find evidence that Persian L2 learners of English consult the value of the head parameter for English grammar and assign a new value to this parameter consistent with the value of the target language. This, in turn, may slow down Persian speakers reading of English, and it may consequently reduce their reading comprehension. We might, on the other hand, find evidence that Turkish L2 learners of English do not have to adjust the parameter, which may not hinder their reading speed and reading comprehension.

In the latter case, it is hypothesized that while the match of parameters facilitates REFL process, their mismatch disrupts it. We might expect significantly greater reading complexity in the mismatched value case. The reading complexity could be due to the L2 learner's beginning with one system and over time switching to the other when the critical triggering data appear.

There are some assumptions that underlie the proposed hypotheses. First, the Universal Grammar (UG) continues to exist after a first language is acquired (White, 1985, 1989; Cook, 1985; Felix, 1984; Zobl, 1980). Thus, the principles of UG do prepare the ground for L2 reading in some way. Secondly, L1 reading experience is very important in REFL and plays a constructive role in it. Finally, experience is an important factor in L2 reading and allows the parameters to be fixed according to the target language structure.

Review of Literature

Role of L1 in L2 Reading

Many studies have focused on the individual reader's use of his/her first language (L1) to comprehend second language (L2) texts (e. g. Block, 1986; Kern, 1994; Cohen, 1995; Jimenez, et al., 1996; Upton, 1997; Garcia, 2000). Cook (1992) thought that whether L2 teachers wanted it or not, the L1 was ever present in the minds of their L2 learners. Also, translation is believed to be a frequent cognitive strategy in L2 reading (Block, 1986; O'Malley & Chamot, 1990; Anderson, 1991). According to Kern (1994) and Upton (1997), L2 readers have been found to rely on translation in the process of comprehending L2 texts and that the degree of such reliance is related to the level of proficiency. Kern (1994: 442) went on to say that teachers and L2 learners should not view translation as "an undesirable habit to be discouraged at all costs but, rather, an important developmental aspect of L2 comprehension processes."

Upton (1997) thinks that "… reading in a second language is not a monolingual event" (P. 3). This was also asserted by Hock Seng and Hashim (2006). They found that L2 learners relied heavily on the L1 when confronted with unknown vocabulary or the idea conveyed in the text. According to them, "… the use of L1 was prominent in many of the strategies utilized by the students as they struggled (successfully) with unknown words and to understand the whole sentence" (P. 42).

There has been plenty of research into the nature of the reading process. Models of the reading process can be placed across a continuum of two opposing approaches in understanding the reading process: bottom-up approaches and top-down approaches (Hock Seng & Hashim, 2006). However, Hudson (1998) thinks that

"… most current researches adhere to what has been termed as interactive approaches" (P. 46). The writer, a third element, is also important in the reading process (see Widdowson, 1984), but it is given prominence in the aforesaid approaches. Nevertheless, as Lally (1998) points out, the approaches are distinct according to the emphasis given to text-based variable such as vocabulary, syntax, and grammatical structure and reader-based variables such as the reader's background knowledge, cognitive development, strategy use, interest, and purpose.

Despite the abundance of research on the topics mentioned above, little is known about the role of the parameters in either L1 or L2 reading process and reading strategies. Reading strategies refer to the "… mental operations involved when readers purposefully approach a text to make sense of what they read" (Barnett, 1989: 66). Block (1986) believes that reading strategies reveal the readers' resources for comprehension and indicate how readers conceive a task, what textual cues they attend to, how they make sense of what they read, and what they do when they do not understand.

Universal Grammar (UG)

The debate on UG was started in 1981 by Noam Chomsky to defend his thesis that language is innate: we are born with a brain that is prewired to learn language; which language we learn depends on what sentences we are exposed to. This view presumes that our brain is born with a universal grammar.

A system of principles and parameters constitutes Universal Grammar. "… the principles of universal grammar have certain parameters, which can be fixed by experience in one or another way" (Chomsky, 1998). Baker (2001) imagines a "tree" of such linguistic parameters. The parameters are arranged according to their power to affect one another. At each junction in the tree, a parameter or more determines a way to structure sentences. Below that junction, that parameter is fixed and other parameters are taken into account. One such parameter is the Pro-drop parameter. This is a binary parameter that determines whether or not the subject of a sentence must be overtly pronounced. Another parameter is the Head parameter. This is also a binary valued parameter which concerns the location of elements with respect to the head of phrase. It specifies whether heads are last in the phrase (head-final) or heads are first in the phrase (head-initial). Chomsky (1988) describes the Head parameter in the following way.

> The order of head and complement is one of the parameters of universal grammar, as we can see by comparing Spanish and Miskito, for example. In Spanish the value of the parameter is "head first"; each lexical head precedes its complement. In Miskito the value of the parameter is "head last"; each lexical head follows its complement. Miskito and Spanish are "mirror images" in this respect."

Universal Grammar in Second Language Acquisition

Assuming a logical problem of L1 acquisition, that is, a mismatch between what goes in (namely, the primary linguistic data) and what comes out (a grammar), people have asked whether the same holds true of L2 (White, 1985a; Bley-Vorman, 1990). A number of principles, such as Subjacency (White, 1992), have been investigated. The assumption has been that if you can show that a particular UG

principle operates/does not operate then this generalizes to other principles, hence, to UG availability/non-availability in general.

The first issue to be taken up in the field has been the issue of UG parameters rather than invariant UG principles, e. g. head position (Flynn, 1984) and pro-drop (White, 1985 b). A lot of work has looked at whether there is evidence of parameter setting SLA (i. e., early stage L1 value, later stage L2 value of some parameter, with relevant clustering of properties). If SLA is UG constrained, then we expect parametric properties to show up, either in the form of L1 settings or L2 settings or settings found in other languages, with an associated cluster of properties.

Method

Participants

In the study 25 beginning, 25 intermediate, and 25 advanced EFL students out of 150 EFL students who were male and native speakers of Persian, and studied at Azad University of Iran were selected by administering a preliminary general IELTS test. Those scoring 5 or higher on the IELTS were placed on the advanced level; those scoring 4+ were placed on the intermediate level; and those with a 4- score on the test were considered as beginners. Also, out of total 150 EFL Turkish-speaking students studying in the same university 25 beginning, 25 intermediate, and 25 advanced EFL native Turkish-speaking students were chosen by the same procedure. The same procedure was repeated to ensure that the Turkish speakers' reading and language ability were equivalent to those of the Persian speakers prior to the experiment. Therefore, both language groups' language proficiency, including their reading ability, at all levels (beginning through advanced) was equal just before the experiment.

All the participants were at the same age range and were motivated and interested in their field of study. Before the experiment, they were made clear about the tests and the procedures. This was done to ensure the robustness of the experiment.

Materials and Procedures

In order to test the hypotheses, we implemented the Dissociation Research Paradigm (Flynn 1986, 1990). The paradigm involves the comparison of acquisition commonalities and differences between two or more languages. It enables us to test the possible link between grammatical properties and acquisition phenomena. However, we used it to test the possible link between parameters and reading English by Persian and Turkish L2 learners of English.

To conduct the experiment, we gave a number of reading tests to both language groups. They included two types of passages. One type consisted of many sentences with relative clauses, and the other type consisted of sentences with many different kinds of phrases. There were five passages of each type and following each passages there were five 4- option multiple choice questions. The tests had already been pre-tested and were proved to be highly reliable($r = 0.90$).

Both language groups, from beginning through advanced, were given two separate treatments. First, the passages containing a large number of phrases were given. Later, after a short break, the passages abundant in relative clauses were administered. The total time allocated to complete the tests was one hour (half an hour for each treatment). Regarding reading speed and reading comprehension, it was

expected that both language groups perform well and be on a par on passages live with relative clauses. It was, on the other hand, expected that Turkish speakers at all levels, particularly at beginning and intermediate levels, perform better than Persian speakers on passages abundant in many different types of phrases.

Reading speed was judged as the mean time spent by the subjects to complete the tests. In other words, the sooner they finished and submitted their examination papers, the faster they had read the passages. It was expected that all Turkish subjects to read faster than the Persians. This was particularly true about reading passages entangled with all kinds of phrases. One individual subjects finished with the tasks, we recorded the time for later statistical analysis.

Reading comprehension rate was considered as the comprehension of the mean values of test scores. We expected that the mean scores of the Turkish subjects for passages abundant in phrases be higher at all levels, particularly at beginning and intermediate levels, than the mean scores of the Persian subjects. We though that this might not be true for the tests with passages containing as many relative clauses. The latter was thought to be true for both reading speed and reading comprehension.

Results

Since there were different test groups and different variables involved in the experiment, a number of repeated measures which included One-Sample Kolmogorov-Smirnov test, ANOVA, Tukey's HSD test, Levene's test, and the t-test were conducted to discover the differences between groups and within groups. First, all groups of subjects from beginning through advanced were compared for reading speed and reading comprehension based on the two batteries of reading comprehension tests. A series of One-Sample Kolmogorov-Smirnov Tests was performed to ensure that test distribution was normal (Tables 1 & 2).

Table One
P values of One-Sample Kolmogorov-Smirnov Test (Turkish group)

Language groups (Turkish)	Phrases		Clauses	
	Score	Time	Score	Time
Beginning	0.458	0.757	0.940	0.643
Intermediate	0.810	0.735	0.848	0.354
Advanced	0.451	0.958	0.242	0.720

Table Two
P values of One-Sample Kolmogorov-Smirnov Test (Persian group)

Language groups (Persian)	Phrases		Clauses	
	Score	Time	Score	Time
Beginning	0.542	0.486	0.797	0.444
Intermediate	0.472	0.655	0.761	0.901
Advanced	0.624	0.746	0.411	0.620

Example graphs on Appendix A attest the fact that the distribution of scores and the time needed to complete both batteries of the reading comprehension tests was indeed normal. Next, the mean scores of all language groups were calculated and recorded (Table 3).

Table Three
Descriptive Statistics
Dependent Variable: SCORE

Language	Group	Level	Mean	N	SD
Turkish	Phrases	Beginning	7.96	25	1.925
		Intermediate	15.12	25	2.571
		Advanced	22.48	25	1.828
		Total	15.19	75	6.328
	Clauses	Beginning	8.48	25	2.801
		Intermediate	14.16	25	3.236
		Advanced	19.00	25	4.143
		Total	13.88	75	5.499
Persian	Phrases	Beginning	6.08	25	1.579
		Intermediate	10.27	25	2.337
		Advanced	17.52	25	2.740
		Total	11.44	75	5.233
	Clauses	Beginning	8.12	25	3.018
		Intermediate	14.44	25	3.355
		Advanced	20.36	25	3.277
		Total	14.31	75	5.950

ANOVA was later used to uncover the main and interaction effects of language and level on scores (Table 4).

Table Four
Tests of Between-Subjects Effects
Dependent Variable: SCORE

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8129.477a	11	739.043	92.657	.000
Intercept	56334.403	1	56334.403	7062.891	.000
Language	206.670	1	206.670	25.911	.000
Group	45.630	1	45.630	5.721	.017
Level	7418. 929	2	3709.463	465.072	.000
Language* Group	326.563	1	326.563	40.943	.000
Language* Level	11.780	2	5.890	.738	.479
Group* Level	45.500	2	22.750	2. 852	.059
Language* Group * Level	74.407	2	37.203	4.664	.010
Error	229.120	288	7.976		
Total	66761.000	300			

Corrected Total	10426.597	299		

a. R Squared= .780 (Adjusted R Squared= .771)

Following that, the mean time spent by all language groups to complete the tests was calculated and recorded (Table 5).

Table Five
Descriptive Statistics
Dependent Variable: TIME

Language	Group	Level	Mean	N	SD
Turkish	Phrases	Beginning	23.32	25	3.145
		Intermediate	20.88	25	2.963
		Advanced	16.80	25	2.828
		Total	20.33	75	3.998
	Clauses	Beginning	21.72	25	3.410
		Intermediate	22.44	25	3.798
		Advanced	17.24	25	5.060
		Total	20.42	75	4.703
Persian	Phrases	Beginning	22.56	25	3.343
		Intermediate	23.68	25	3.065
		Advanced	20.04	25	3.921
		Total	22.09	75	3.742
	Clauses	Beginning	21.76	25	3.689
		Intermediate	22.36	25	3.463
		Advanced	14.44	25	3.163
		Total	19.52	75	4.968

Analysis of variance was carried out to ensure that the difference of group means of the latter was not due to chance occurrence (Table 6).

Table Six
Tests of Between-Subjects Effects
Dependent Variable: TIME

Source	Type III Sum of Squares	df	Mean Square	F	Sig.

Corrected Model	2346.917a	11	213.356	17.083	.000
Intercept	127349.203	1	127349.203	10196.77	.000
Language	12.403	1	12.403	.993	.320
Group	11.630	1	111.630	8.938	.003
Level	1809.607	2	904.803	72.447	.000
Language* Group	137.363	1	137.363	10.999	.001
Language* Level	38.287	2	19.143	1.533	.218
Group* Level	91.140	2	45.570	3.649	.027
Language* Group * Level	146.487	2	73.243	5.865	.003
Error	3596.880	288	12.489		
Total	133293.000	300			
Corrected Total	5943.797	299			

a. R Squared= .395 (Adjusted R Squared= .372)

Finally, post hoc Tukey's HSD test was used to see if the subjects' language proficiency levels were honestly significantly different according to the obtained scores and the time spent to complete the tests (Table 7)

Table Seven
Multiple Comparisons
Tukey HSD

Dependent Variable	(I) Level	(J) Level	Mean Difference (I-J)	SD Error	Sig.
Score	Beginning	Intermediate	-5.95*	.450	.000
		Advanced	-12.18*	.450	.000
	Intermediate	Beginning	5.95*	.450	.000
		Advanced	6.23*	.450	.000
	Advanced	Beginning	12.18*	.450	.000
		Intermediate	6.23*	.450	.000
Time	Beginning	Intermediate	.00	.528	1.000
		Advanced	5.21*	.528	.000
	Intermediate	Beginning	.00	.528	1.000
		Advanced	5.21*	.528	.000
	Advanced	Beginning	-5.21*	.528	.000
		Intermediate	-5.21*	.528	.000

*. The mean difference is significant at the .05 level.

Results of the test proved that the mean difference between language proficiency levels was significant at the 0.05 level.

Group statistical analysis was performed to see if the total mean score and the total mean time of both language groups from beginning through advanced were significantly different (Table 8). Levene's test for equality of variances and the t-test for equality of means confirmed the difference (Table 9).

Table Eight

Group Statistics

	Language	N	Mean	SD	Std. Error Mean
Score	Turkish	150	14.53	5.945	.485
	Persian	150	12.87	5.766	.471
Time	Turkish	150	20.40	4.350	.355
	Persian	150	20.81	4.570	.373

Table Nine

Independent Sample Test

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	SD Error Difference
Equal variances assumed Score	.116	.734	2.4	298	.015	1.66	.676
Equal variances not assumed			2.4	297.72	.015	1.66	.676
Equal variances assumed Time	.640	.424	.78	298	.431	-.41	.515
Equal variances not assumed			.78	297.28	.431	-.41	.515

Another group statistical analysis was performed to find about the general performance on passages with phrases and passages with clauses separately (Table 10). Levene's test for equality of variances and the t-test for equality of means confirmed the fact that performance on passages alive with clauses was fairly better than performance on passages abundant in phrases (Table 11).

Table Ten

Group Statistics

	Group	N	Mean	SD	SD Error Mean
Score	phrases	150	13.31	6.085	.497
	Clauses	150	14.09	5.714	.467
Time	Phrases	150	21.21	3.953	.323
	Clauses	150	19.99	4.845	.396

Table Eleven
Independent Sample Test

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	SD Error Difference
Score Equal variances assumed	2.04	.154	-1.14	298	.253	-.78	.682
Equal variances not assumed			-1.14	296.831	.253	-.78	.682
Time Equal variances assumed	5.74	.017	2.388	298	.018	1.22	.511
Equal variances not assumed			2.388	286.625	.018	1.22	.511

<u>Discussion</u>

The findings of the current research supported the hypothesis that the match of the parameters does facilitate reading and increases reading speed. The mismatch of the parameters, on the other hand, acts as a hindering factor, slows down reading speed and decreases reading comprehension.

Turkish beginners scored higher on the test of passages with phrases (M= 7.9, P= 0.000) than Persian beginning subjects on the same test (M= 6.08, P= 0.000). Turkish intermediate subjects also scored much higher (M= 15.12, P= 0.000) than Persian intermediate subjects on the test of passages abundant in phrases (M= 10.72, P= 0.000). Even Turkish advanced level subjects did better than Persian advanced subjects in the same regard (TM= 22.48; PM= 17.52). Other things being equal, it seems that the parameter factor has been in action in REFL in the study. The mismatch of the parameters may have been a hindering factor, and may have caused the Persian subjects to lag behind their Turkish counterparts.

On the test of clauses a big difference was not observed between paired levels of language groups. Turkish beginning subjects' mean score on the test of passages with plenty of clauses was nearly the same as their Persian counterparts (TM= 8.48, P= 0.000). The latter was also true for both language groups' intermediate (TM= 14.16; PM= 14.44) and advanced (TM= 19.00; PM= 20.36) levels. Here again, it seems that the parameter factor has been in action. The match of the parameters involved may have facilitated the REFL process, because neither language group

needed to adjust the parameter (the PBD), which, otherwise, might have caused greater reading complexity.

Regarding time spent to complete the tests, results were mixed. Persian beginners being tested on passages with phrases read faster than Turkish beginners on the same tests (PM= 22.56; TM= 23.22).However, the SD of the Turkish beginning group's scores is lower than the Persian beginning group's scores (TSD= 3.145; PSD= 3.343), which shows that Persian beginners' performance on tests with phrases has been more erratic and less stable than their Turkish counterparts. Turkish intermediate subjects, however, read the passages with phrases faster than their Persian counterparts (TM= 20.88; PM= 23.68). Here again, the standard deviation (SD) of Turkish group's scores is lower than the Persian group (TSD= 2.963; PSD= 3.065). This is also true about Turkish and Persian advanced level subjects (TM= 16.80; PM= 20.04; TSD= 2.828; PSD= 3.921).

Once again, excluding other factors, we find that the parameter factor has an independent effect on the reading speed of EFL students. The mach of Turkish and English phrasal structure seems to be a facilitating element in the development of Turkish English L2 learners' reading skill, which includes both comprehension and speed. Therefore, Upton (1997) is right that reading in a second language is not a monolingual event. Parameter setting may be one part of L2 reading event in which, in the case of mismatch, the L2 learner begins with one system and over time switches to the other when the critical triggering data appear. But, in the case of match, the reader need not wait for the triggering data to appear; he/she spends less time in order to decode the written text.

Interestingly enough, the two language groups were nearly at par regarding the time they spent to complete the tests on passages with many clauses. Turkish and Persian beginners read nearly at the same rate (TM= 21.72; PM= 21.76; TSD= 3.410; PSD= 3.343). Both language groups' intermediate subjects also read approximately at the same rate (TM= 22.44; PM= 22.36). At the advanced level the parity nearly disappeared and the Persian subjects had the edge on their Turkish counterparts (PM= 14.44; TM= 17.24; PSD= 3.163; TSD= 5.060).

The latter suggests two important facts of REFL. First, the match of the parameters is a fortunate event in that the L2 reader does not encounter additional reading complexity, Since the PBD is a form of the head parameter, those L2 readers with L1 languages whose PBD parameter matches that of the L2 will have to spend less time decoding the written text, and probably will understand more of the text. Thus, the parameter match may indeed have facilitated the reading process. Second, L1 reading experience is very important in REFL, and as Hock Seng and Hashim (2006) found, when reading the L2 text, L2 readers heavily rely on L1. Reliance on L1 to decode the L2 text is a strategy one of whose elements may be parameter setting.

Group statistics (Table 8) also confirmed the fact that Turkish subjects' general mean score was higher than the Persian' (GTM= 14.53; GPM= 12.87). T-test for equality of means proved that the difference of means was not due to chance occurrence (P= 0.734, F= 0.116). The Turkish speakers' better performance, in general, may be due to similarity of phrasal structure of Turkish and English. In turn, this may be evidence of UG's continued existence even after a first language is acquired. If SLA is UG constrained, then we might expect to see its evidence in all aspects and skills of L2 and L2 acquisition.

Conclusion

The impact of the head parameter on reading English as a Foreign Language (REFL) was investigated. The results of the study confirmed the hypothesis that the match of the parameters facilitates the L2 reading process; whereas, its mismatch hinders it and thereby slows down reading speed and decreases reading comprehension rate. The syzygy of the head parameter and the L2 reading process may be taken as an independent factor or may be considered as part of any reading strategy in which L1 is always present in L2 reading. The reason why L2 readers rely on translation as part of their developmental L2 comprehension process (see Kern, 1992) could be the complexity arising from the mismatch of the parameters.

As for the teaching of L2 reading, we recommend a contrastive analysis before starting a reading course or designing a reading syllabus. Such an analysis would help the reading teacher learn about the pitfalls he/she may face during teaching. Also, the reading teacher can adopt strategies and techniques by which he/she implicitly clarifies the problem. Teaching and practicing the phrasal structure in both L1 and L2 and comparing it with the clause structure in the two languages is one technique that can be adopted.
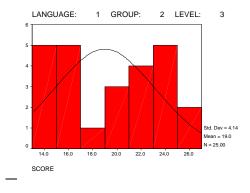
References

Anderson, N. J. (1991). Individual differences in strategy use in second language Reading and testing. Modern Language Journal, 75, 4, 460-472.

Baker, M. (2001). The Atoms of Language: The Mind's Hidden Rules of Grammar. Basic BKS.

Barnett, M. (1989). More than meets the eyes. N J: Prentice Hall

Bley-Vorman, R. (1990). The logical problem of foreign language learning. Linguistic Analysis, 20, 3-49.

Block, E. (1986). The comprehension strategies of second language readers. TESOL Quarterly, 20, 463-494.

Chomsky, N. (1964). Current Issues in Linguistics Theory. The Hauge: Mouton.

Chomsky, N. (1981). Lectures on Government and Binding. Mouton de Gruyer.

Chomsky, N. (1988). Language and the Problems of Knowledge: The Managua Lectures. Cambridge: The MIT Press.

Cook, V. J. (1985). Universal Grammar and Second Language Learning. Applied Linguistics, 6, 2-18.

Cook, V. J. (1988). Chomsky's Universal Grammar: an introduction. Oxford: Basil Blackwell.

Cook, V. J. (1992). Evidence for multicompetence. Language Learning, 42, 557-591.

Epstein, S. D., Flynn, S., & Martohardjono, G. (1996). Second language acquisition: Theoretical and experimental issues in contemporary research. Behavioral and Brain Sciences, 19, 4, 677-758.

Felix, S. (1984). UG-generated knowledge in adult second language acquisition. In S. Flynn and W. O'neil (Eds.) Linguistic Theory in Second Language Acquisition. Dordrecht: Reidel Press.

Flynn, S. (1984). A universal in L2 acquisition based on a PBD typology. In F. Eckman, L. Bell, & D. Nelson (Eds.), Universals of second language acquisition. Rowley, MA: Newbury House.

Flynn, S. (1986). Production VS. Comprehension: Differences in underlying competences, Studies in Second Language Acquisition, 8, 135-164.

Flynn, S. (1987). L2 Acquisition: Resetting the Parameters of Universal Grammar. Dordrecht: Reidel Press.

Flynn, S. (1990). In defence of parameter-setting in L2 acquisition: A reply to Bley-Vorman and Choudron. Language Learning, 40, 419-449.

Garcia, G. E. (2000). Bilingual children's reading. In M. Kamil, P. Mosenthal, D. Pearson, & R. Barr (Eds.), Handbook of reading research Volume III (pp. 163-179). Hills dale, N J: Lawrence Erlbaum Associates.

Hock Seng, G. & Hashim, F. (2006). Use of L1 in L2 reading comprehension among tertiary ESL learners. Reading in a Foreign Language, 18, 1.

Hudson, T. (1998). Theoretical perspectives on reading. Annual Review of Applied Linguistics, 18, Foundations of second language teaching (pp. 43-59). New York: Cambridge University Press.

Jimenez, R. T., Garcia, G. E., Pearson, P. D. (1996). The reading strategies of bilingual Latina/o students who are successful English readers: opportunities and obstacles. Reading Research Quarterly, 31, 1, 90-112.

Kern, R. G. (1994). The role of mental translation in second language reading. Studies in Second Language Acquisition, 16, 441-461.

Lally, C. G. (1998). The application of first language reading models to second Language study: A recent historical perspective. Reading Horizons, 38, 267-277.

Liceras, J. (1983). Markedness Contrastive Analysis and the Acquisition of Spanish Syntax by English Speakers. Unpublished doctoral dissertation, University of Toronto, Canada.

Liceras, J. (1985). The role of intake in the determination of learner's competence. In S. M. Gass and C. Madden (Eds.) Input in Second Language Acquisition, 354-376. Rowley: Newbury House Publishers.

Maleki, A. (1994). Parameter-setting Model of L2 Acquisition: A study on the Head-initial/Head-final parameter in Farsi and English. Unpublished doctoral dissertation, Azad University, Iran.

O'Malley, J. M. & Chamot, A. U. (1990). Learning strategies in second language acquisition. Cambridge: Cambridge University Press.

Soheili, A. (1989). Is Persian a Pro-drop Language? University of Maryland, USA.

Upton, T. A. (1997). First and second language use in reading comprehension strategies of Japanese ESL students. TESL-EJ, 3, 1.

White, L. (1985a). Is there a logical problem of second language acquisition? TESL Canada, 2, 29.

White, L. (1985b). The pro-drop parameter in adult second language acquisition. Language Learning, 35, 47-62.

White, L. (1989). Universal Grammar and Second Language Acquisition. Amsterdam: Benjamins.

White, L. (1992). Subjacency violations and empty categories in L2 acquisition. In H. Goodluck & M. Rochemont (Eds.), Island Constrains (pp. 445-464). Dordrecht: Kluwer.

Widdowson, H. G. (1984). Reading and communication. In C. Alderson & A. Urquhart (Eds.), Reading in a foreign language (pp. 213-227). New York: Longman

Zobl, H. (1980). The Formal and Developmental Selsctivity of L1 Influence on L2 Acquisition. Language Learning, 30, 43-57.

Ataollah Maleki is currently Associate Professor of TEFL at Zanjan Medical Sciences University in Iran. He holds a BA degree in English (Tehran), a Diploma in Applied Linguistics, Phonetics, and the Teaching of English (Essex), an MA degree in TEFL (Tehran), and a PhD in TEFL (Tehran). Dr. Maleki has a 21-year teaching experience at different universities in Iran. He has published a number of articles on second language acquisition, bilingualism, reading, linguistics, and teaching English. He has also published a number of books about theoretical phonetics, English grammar and tense. He has had presentations on ESP at national and international forums, and conferences.

Appendix A

LANGUAGE: 1 GROUP: 2 LEVEL: 3

Std. Dev = 4.14
Mean = 19.0
N = 25.00

SCORE

LANGUAGE: 2 GROUP: 1 LEVEL: 2

Std. Dev = 2.34
Mean = 10.7
N = 25.00

SCORE

LANGUAGE: 1 GROUP: 2 LEVEL: 1

Std. Dev = 3.41
Mean = 21.7
N = 25.00

TIME

LANGUAGE: 1 GROUP: 2 LEVEL: 2

Std. Dev = 3.80
Mean = 22.4
N = 25.00

TIME