Research Article

THE EFFECT OF NATIVE SPEAKER'S LEVEL OF FLUENCY ON IRANIAN EFL LEARNER'S SENTENCE PROCESSING PERFORMANCE: THE CASE OF IRANIAN EFL STUDENTS IN GOLESTAN ENGLISH INSTITUTE (TEHRAN-SOUTH BRANCH)

*Mahboobeh Nabati[1], Mojgan Yarahmadi[1] and Saeed Yazdani[2]
[1]English Language Department, Saveh Science and Research Branch, Islamic Azad University, Saveh, Iran
[2]English language Department, Arak branch, Islamic Azad University, Arak, Iran
*Author for Correspondence

ABSTRACT
One of the major problems most Iranian EFL listeners complain about is speech rate that seems to have exerted an influential effect on their sentence processing performance. Speech rate as one of the main variables and factors in sentence processing has been the main subject of research lately .The present researcher worked on the effect of native speaker's level of fluency on Iranian EFL sentence processing performance, therefore the researcher used different tests and questionnaires to evaluate the students performance in sentence processing, of course during the research ,the researcher used both online and offline method of sentence processing , and this study perceived some interesting conclusion. For Iranian EFL learners, approaching L2 listening based on spoken, non- reduced input can be overwhelming. Limitations in L2 learners working memory and time do not always permit them to process natural listening input (normal speech rate). In non-interactional listening where EFL listeners have no control over the stream of speech rate they are exposed to it has been observed that listeners are encountered with some sentence processing problems mostly related to speech rate .But how students will be `trained to deal with speech rate in listening comprehension is still a controversial issue that needs more investigation. There is also a lack of research on this issue in our context Iran. Therefore, the main objective that has prompted the development of this research is the question of how to overcome the problem of speech rate and pause in sentence processing by being exposed to natural or fast.

Key Words: *Speech Rate, Pause, Fluency, Sentence Processing**, On-line Sentence Processing Tasks, Off-line Sentence Processing Tasks*

INTRODUCTION
In this research, the effect of fluency on sentence processing performance investigated. The researcher used levels of fluency as pause and speech rate. In one of the previous researches (Hendriks, Van Rijn and Valkenier, 2007; Valkenier, 2006) has predicted that the difficulties children have with pronoun interpretation will decrease if children are given more times. Fluency refers to a student's speed, smoothness, and ease of oral reading. Fluent readers read more quickly and smoothly. Fluent readers gain more meaning from the text they read.

The other researchers like Armbruster and Osborne (2001) said that Fluency develops gradually over considerable time through substantial practice. They believed fluency is important because it provides a bridge between word recognition and comprehension.

One of the major problems most Iranian EFL listeners complain about is speech rate that seems to have exerted an influential effect on their sentence processing performance. Speech rate as one of the main variables and factors in sentence processing has been the main subject of research lately. For Iranian EFL learners, approaching L2 listening based on spoken, non- reduced input can be overwhelming.

Not only must they cope with linguistic input beyond their actual level of proficiency the time is also often too short to pay attention to input form (Hendriks P and Spenader, 2005 and 2006). Limitations in L2 learners working memory and time do not always permit them to process natural

Research Article

listening input (normal speech rate). But how students will be trained to deal with speech rate in listening comprehension is still a controversial issue that needs more investigation.

There is also a lack of research on this issue in our context, Iran. Therefore, the main objective that has prompted the development of this research is the question of how to overcome the problem of speech rate and pause in sentence processing by being exposed to natural or fast.

The significant of the speed of speech in sentence processing becomes more complicated when on considers the fact that people with different cultures have different expectations about the pauses in normal communicative setting .Studying the functions of silence in interaction, Philips (1980) argues that silences are gaps where nothing is happening. Such gaps can be considered as indications of a breakdown in interaction if they continue too long .He pinpoints that gaps, like junctures ,are cultural constructs and what is perceived as a gap in one context or culture maybe perceived as a juncture in another. Recent experimental evidence for prediction comes from (Kamide *et al.,* 2003; Van-berkum *et al.,* 2005; Staub and Clifton, 2006). Finally, current theories of sentence processing can only explain some of the phenomena found in psycholinguistic experiments. Therefore, drawing from those theories and designing a theory that can extend the coverage of previous theories to a wider range of phenomena will constitute an advance in our understanding of human language processing. Therefore the following hypotheses are formulated in the present study:

1. The rate of speech of native speakers does not have any effect on online sentence processing performance?
2. The rate of speech of native speakers does not have any effect on offline sentence processing performance?
3. Pause of native speakers does not have any effect on online sentence processing performance?
4. Pause of native speakers does not have any effect on offline sentence processing performance?

MATERIALS AND METHODS
Methodology
Subjects
In the present research, the participants were chosen from students in Golestan English language institute from Tehran the capital of Iran. The population was 60 female intermediate students, 14 to17 years old.
Materials
In the present study the quantitative and qualitative (mixed approach) method of data collection was used. To achieve the goals of this study some procedures will be taken by the researcher:
1- Development of the questionnaires (background questionnaires).
2- Administration of the general English proficiency test (Nelson 300D)
3- The development of listening comprehension section (Tactics)
4- Development of sentence processing performance (Self-paced reading test)
5- Development of sentence processing performance (Text Generation test)
6- Analysis of data.
Procedure
At first, a General English proficiency test (Nelson 300 D) was used and among 80 students, 60 participants whose numbers were more than 30 were chosen. The English Proficiency test (Nelson 300D) included 50 multiple choice questions and the students were supposed to choose A, B, C or D. The allocated time for this test was one hour .Then the background questionnaire was used to have demographic information of all learners. Then the students divided in 3 groups. For the quantitative part of study, the researcher presented a pretest that is online sentence processing test for each group. Then divided the groups and there was a different treatment for each group as a qualitative part of study. A normal native speaker's speech rate audio was used for group A, then a high speech native speaker audio was used for group B. A native speaker audio with more pauses was used for group C. Having completed this stage, the online sentence processing test (Self-paced Listening) was presented in all three groups**.**

Research Article

The present researcher applied all these stages by attending offline processing test (Text Generation) as both pre-test and post test too.

RESULTS AND DISCUSSION
Before starting the experiments, in order to make sure that the participants were homogeneous with regard to their listening ability, they were tested both online and offline. Table 1 presents the descriptive statistics of the results of these tests, and Figure 1, illustrates the means graphically (means column represents seconds of processing).

Table 1: Descriptive Statistics for the Pretest (Online)

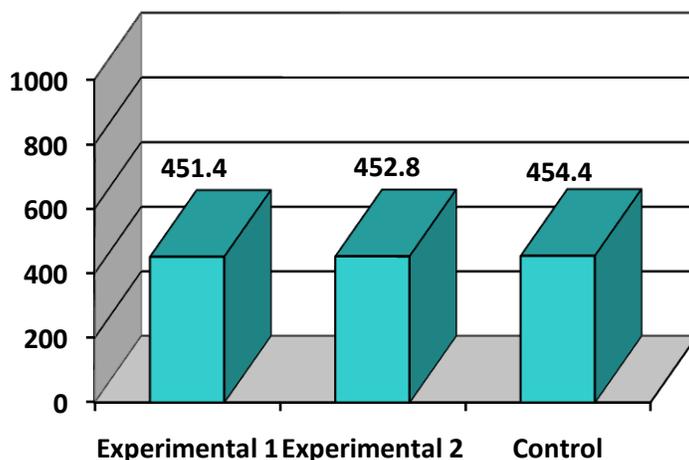| Group	N	Mean	SD	Min	Max
Experimental 1	20	451.40	85.501	321	613
Experimental 2	20	452.80	69.894	356	547
Control	20	454.40	68.931	349	594
Total	60	452.87	73.885	321	613

Figure 1: Graphical representation of the means for pretest (online)

By checking the information in Table 4.1 and Figure 4.1, one can understand that there are some slight differences among the three groups. In order to find out whether or not these differences are statistically meaningful, a one-way ANOVA was run. Table 4.2 indicates the results of this ANOVA.

Table 2: The Results of One-way ANOVA on Pretest (Online)

	SS	df	MS	F	Sig.
Between Groups	90.133	2	45.067	.008	.992
Within Groups	321992.800	57	5648.996		
Total	322082.933	59			

According to Table 2, the amount of F-observed (.008) is not statistically significant (p= .992).
The Results of the Offline Pretest
Table 3 indicates the descriptive statistics for this comparison, and Figure 3 shows the means in graphical form (means column represents seconds of processing).

Research Article

Table 3: Descriptive Statistics for the Pretest (Offline)

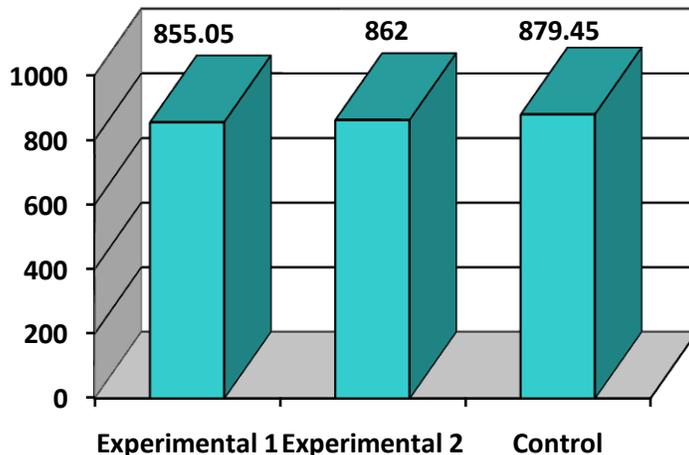| Group	N	Mean	SD	Min	Max
Experimental 1	20	855.05	59.66704	734	985
Experimental 2	20	862.00	64.67896	772	964
Control	20	879.45	53.26446	769	962
Total	60	865.50	59.28286	734	985

Figure 3: Graphical representation of the means for pretest (offline)

In order to make sure that the differences among the groups are not statistically significant, another one-way ANOVA was employed. Table 4 shows the results of this ANOVA.

Table 4: The Results of the One-way ANOVA on Pretest (Offline)

	SS	df	MS	F	Sig.
Between Groups	6321.100	2	3160.550	.896	.414
Within Groups	201031.900	57	3526.875		
Total	207353.000	59			

One can clearly see in Table 4 that the amount of F-observed (.896) is not statistically significant (p= .414). Therefore, it can be said that the three group's listening abilities for offline listening were similar and they can be considered homogeneous in this regard, too.

The Results of the Online Posttest

The performances of the three groups were compared to see which group performed better. Table 5 depicts the descriptive statistics for the online posttest, and Figure 4 illustrates the means graphically (means column represents seconds of processing).

Table 5: Descriptive Statistics for the Posttest (Online)

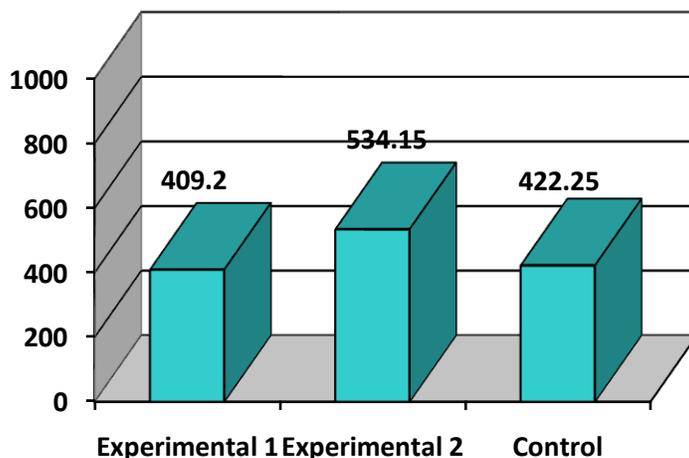| Group	N	Mean	SD	Min	Max
Experimental 1	20	409.20	56.31453	322	542
Experimental 2	20	534.15	49.22374	421	629
Control	20	422.25	52.63166	339	534
Total	60	455.20	76.75844	322	629

Figure 4: Graphical representation of the means for posttest (online)

By looking at the means in Table 6 and Figure 4, it can be seen that there are differences between the three means. A one-way ANOVA was employed. Table 6 indicates the results of this ANOVA.

Table 6: The Results of the One-way ANOVA on Posttest (Online)

	SS	df	MS	F	Sig.
Between Groups	188696.100	2	94348.05	33.839	.000
Within Groups	158923.500	57	2788.132		
Total	347619.600	59			

According to Table 7, the amount of F-observed (33.839) is significant at the probability level of p= .000 which denotes a statistically significant amount. Therefore, it can be said that the performances of the three groups were statistically differently on the posttest. In order to find the exact place(s) of difference(s), a Scheffe post hoc test was applied. Table 7 gives the results of this post hoc test.

Table 7: The Results of the Scheffe Post hoc Test for the Posttest (Online)

Groups	Groups	Mean Difference	Sig.
Experimental 1	Experimental 2	-124.95[*]	.000
	Control	-13.05	.738
Experimental 2	Experimental 1	124.95[*]	.000
	Control	111.90[*]	.000
Control	Experimental 1	13.05	.738
	Experimental 2	-111.90[*]	.000

The data in Table 7 reveals the following facts about the differences between the three groups.
The Results of the Offline Posttest
In the next stage, the researcher tested the student's listening sentence processing offline.Table8 reports the descriptive statistics of the offline posttest, and Figure 5 indicates the means graphically (the means column represents seconds of processing).

Research Article

Table 8: Descriptive Statistics for the Posttest (Offline)

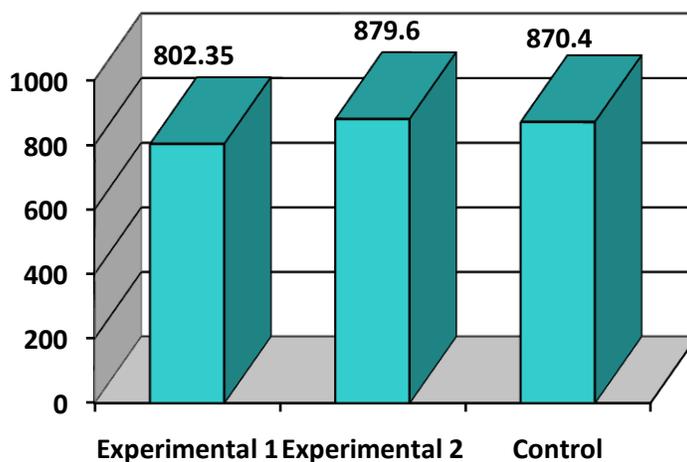| Group	N	Mean	SD	Min	Max
Experimental 1	20	802.35	49.646	704	914
Experimental 2	20	879.60	54.960	800	980
Control	20	870.40	71.356	744	1056
Total	60	850.78	67.921	704	1056

Figure 5.Graphical representation of the means for posttest (offline)

By checking the information in Table 4.8 and graphs in Figure 4.4, one can detect some differences among the three means. Another one-way ANOVA was implemented. Table 9 indicates the results of this ANOVA.

Table 9: The Results of the One-way ANOVA on Posttest (Offline)

	SS	df	MS	F	Sig.
Between Groups	71220.033	2	35610.017	10.100	.000
Within Groups	200962.150	57	3525.652		
Total	272182.183	59			

Table 10: The Results of the Scheffe Post hoc Test for the Posttest (Offline)

Groups	Groups	Mean Difference	Sig.
Experimental 1	Experimental 2	-77.25*	.001
	Control	-68.05*	.003
Experimental 2	Experimental 1	77.25*	.001
	Control	9.20	.887
Control	Experimental 1	68.05*	.003
	Experimental 2	-9.20	.887

Research Article

Table 9 clearly shows that the amount of F-observed (10.100) is statistically significant (p= .000). However, it does not tell where the exact place(s) of difference(s) is/are. To find this out, a Scheffe post hoc test was employed. Table 10 gives the results of this post hoc test.

Conclusion

The preliminary purpose of this study was to probe the existence or lack of existence of any interrelationship between the collaborative learning and speaking ability of Persian language learners. There is a significant difference between experimental group 1 and experimental 2 group (p= .001, mean difference= -77.25).

There is a significant difference between experimental group 1 and control group (p= .003, mean difference= 68.05) which rejects the fourth null hypothesis which states that, "pause of native speakers does not have any effect on offline sentence processing performance". In other words, the group which listened to normal speech rate needed more time to process the sentences than the group which listened to the material with pauses.

There is no significant difference between experimental group 2 and control group (p= .887, mean difference= 9.20) which confirms the second null hypothesis stating that, "the rate of speech of native speakers does not have any effect on offline sentence processing performance". In other words, the participants who listened to material with normal speed processed them the same as those who listened to them with fast speech rate. The result obtained from the analysis of the second hypothesis is in contrast with what Swinney and Love (1998) have found from Off-line studies with unimpaired populations demonstrated a decline in performance resulting from slowed input rates.

Meanwhile the result taken from the analysis of the second hypothesis seem to be in line with the findings of Dilley and Pitt (2010) who suggest that listeners rapidly entrain to the rate of an utterance and develop speech rate expectations that influence the perceived number of morph phonological constituents within a spectrally ambiguous stretch of speech of a certain duration.

The study was in fact an attempt to shed light on the effect of native speaker's level of fluency on Iranian EFL learner's sentence processing performance. As it was illuminated in the preceding section of the study, the findings of the study revealed that first, receiving listening material with pauses results in faster processing than receiving them with a fast speech rate. Second, listening to normal speech rate results in performing the same as listening to the material with pauses. It should be mentioned that the findings of this study could enrich the literature in the area of second language acquisition development especially Iranian speaker's level of fluency. Furthermore the findings of this study can be useful for EFL methodologists, textbook authors, syllabus designers, curriculum developers, language teachers, and language test.

REFERENCES

Armbruster and Bonnie B (2001). Lehr, Fran; Osborn, Jean. Put Reading First: The Research Building Blocks for Teaching Children to Read. Washington, DC: National Institute for Literacy, Available: http://www.nifl.gov/nifl/partnershipforreading/publications/PFRbooklet.pdf.

Dilley L and Pitt M (2010). Altering context speech rate can cause words to appear or disappear. *Psychological Science* **21** 1664.

Faerch C and Kasper G (1984). Pragmatic knowledge: Rules and procedures. *Applied Linguistics* **15** 214-225.

Hendriks P and Spenader J (2005, 2006). When production precedes comprehension: an optimization approach to the acquisition of pronouns. *Language Acquisition* **13** 319–348.

Swinney D, Ford M, Frauenfelder U and Bresnan J (1988). Coreference assignment during sentence processing. In: *Language Structure and Processing,* edited by Grosz B, Kaplan R, Macken M and Sag I, Stanford: CSLI.

Valkenier B (2006). Bi-directionality in language acquisition. MSc thesis, University of Groningen.

Research Article

Van-Berkum JJA, Brown CM, Zwitserlood P, Kooijman V and Hagoort P (2005). Anticipating upcoming words in discourse: Evidence from ERPs and reading times. *Journal of Experimental Psychology: Learning, Memory & Cognition* **31** 443-467.