AN INTROSPECTIVE STUDY OF L۲ READING ANXIETY

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Abstract

This study sought to explore the possible relationship between reading anxiety and reading proficiency and also between reading anxiety and language learners' use of reading strategies. The majority of studies on language anxiety have been quantitative to date. This study was conducted in two phases. The first phase was quantitative, and the second consisted of a series of case studies using introspection and think-aloud protocols. The statistical phase aimed to study the relationship between reading anxiety and reading proficiency. The FLRAS questionnaire was administered to two groups of pre-intermediate and upper-intermediate Iranian EFL learners, studying in a private language school, in order to measure their foreign language reading anxiety and correlate it with their reading proficiency. In the qualitative part of the study, the think-aloud procedure was employed to examine the possible link between reading anxiety and reading strategy use. The verbal reports of four informants, selected from the population of participants in the first phase, were analyzed using a defined classificatory scheme of processing strategies. The results of the analyses suggest that ۱) there is no significant relationship between reading anxiety and ability in

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the reading skill, and ۲) reading anxiety seems to affect learners' reading style and preference for certain types of strategies.

Keywords: introspection, foreign language reading anxiety, reading strategies, language proficiency

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1. Introduction

Language anxiety, as a psychological construct, has been an intriguing subject for research for the past 4 decades, and various definitions have been proposed for it (Atay & Kurt, 2006; Brantmeier, 2005). Horwitz and Horwitz, and Cope (1986) describe Foreign Language Classroom Anxiety (FLCA) as "a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the uniqueness of the language learning process" (p. 128). FL anxiety has been shown to be a situation-specific type of anxiety, differing from trait and general anxiety. While the latter refers to a permanent personality trait, causing feelings of stress in virtually all situations and at all times, the former is a type of stress that arises only in particular situations. The anxiety felt at the time of taking a test or the apprehension experienced when a person is learning a foreign language are instances of the former.

Research on language anxiety shows that it plays a detrimental role in the students' performance and achievements in language learning (MacIntyre, 2002; Katalin, 2006). The majority of language learners have been reported to suffer from some degree of language anxiety that hinders the learning process and impedes their success in the course of mastering the language. Therefore, the identification of the precise role of anxiety in the learning process, the way it debilitates the students, and the way it can be prevented are all of paramount importance. We have long been cognizant of the significance of affective variables in the realm of language learning. Various methodologies have sought to eliminate affective barriers to language learning and make it a more pleasant and less stressful experience. Anxiety is one of the crucial affective barriers that many language learners are reportedly afflicted with. What is more, it is vital to understand the relationship between anxiety and other variables and explore causal relationships in the area. One important issue to consider is the way anxiety interacts with such factors as proficiency, self-confidence, and similar learner attributes.

Almost all studies on FL anxiety have been quantitative and statistical in nature to date (see. for instance, Cheng, 2004; Cubukcu, 2008). Although statistical studies have yielded certain results and shed some light on FL anxiety, there seems to be a need to make a shift toward qualitative modes of research as a possible avenue for future studies on FL anxiety. There is much more to foreign language leaning research that can ever be learned through statistical analyses alone. As a result, this study aimed to examine reading anxiety introspectively, using the think-aloud procedure and analysis of verbal reports. While the first part includes statistical interpretations of data, the second phase of the experiment has a clear focus on introspection and think-aloud protocol analysis. Analyzing verbal reports seems a promising tool especially in the case of skill-specific anxieties. That is mainly due to the fact that introspection and retrospection can help to clearly examine the learners' performance on particular language skills, and the possible link between this performance data and the anxiety aroused by that same language skill. In essence, this study deals with certain aspects of the reading process and their possible relationship with the arousal of anxiety in language learners. In this regard, we were interested to know if anxious students differ from non-anxious students in their reading style and use of processing strategies.

2. Foreign Language Anxiety Research

FLA has been viewed and investigated from different angles. Its relationship with such parameters as gender (see Spielberger, 1983), language proficiency (see Aida, 1994; Frantzen, and Magnan, 2005), self-perception (see McIntyre 1992; McIntyre et al., 1997; Cubukcu, 2008), confidence (see Gardner & McIntyre, 1998; Cheng et al., 1999) and so forth has been explored in numerous studies (see Matsuda & Gobel, 2004). The results do not always converge, and there is a body of conflicting results in regard to some of these relationships. In general, language anxiety has been found to be linked to many other factors,

which have some bearing on the arousal of apprehension in the learning environment.

A finer distinction has also been made within the framework of FL anxiety. While Foreign Language Classroom Anxiety has been defined as the apprehension generally experienced in the language classroom, and mainly by the oral skills, skill-specific forms of FL anxiety have been posited in recent years. Reading anxiety and writing anxiety are instances of the latter (e.g. see Saito, Garza, and Horwitz, 1999; Cheng, 2002; 2004). These are defined as the stress and tension experienced when the learner is learning or dealing with a particular language skill.

Anxiety has been studied by psychologists from many different perspectives and its effects on cognitive, affective and behavioral functioning are well established (McIntyre & Gardner, 1991). However, language anxiety has only recently been treated as a particular and distinct form of anxiety. As Scovel (1978) pointed out, in early research, anxiety was studied as an affective variable in language acquisition, development, and performance, but those studies yielded mixed results probably due to the inconsistency of the measurement scales and the complexity of the language learning process. Current research focuses on anxiety as a situation-specific construct, but as Horwitz and Young (1991) point out, it has not yet been determined precisely how anxiety hinders the learning process. The majority of earlier studies did not focus on anxiety as such and simply included it as an affective variable. In the 1980s, research began to focus on the role of anxiety in language learning. Trylong (1987) investigated the relationship of aptitude, attitude and anxiety to achievement and found a negative correlation between anxiety and all areas of achievement. Ely (1986) devised scales to measure Language Class Discomfort, Language Class Risk-taking, and Language Class Sociability. He observed that anxiety affected class participation, which in turn affected achievement. Also, a negative causal relationship was found between risk-taking and discomfort, probably pointing to the fact that merely urging the students to take linguistic risks in class will not be an effective measure for learning. Horwitz, Horwitz

and Cope (1986) noted that the discrepancies observed in the results of studies on language anxiety can at least partly be due to the inconsistency of the measurement tools. They devised the FLCAS, which has been regarded as a standard instrument by most researchers. It is made up of items that analyze possible sources of anxiety as postulated by Horwitz, *et al*. (1986). Horwitz (1988) researched the effect of students' beliefs about the learning process upon their achievement and success. She discovered that these views can have a positive or deleterious effect on the learner's performance. For example, she found out that the belief that some learners are unable to learn any foreign language did create a negative atmosphere and caused those learners to fail. Others had unrealistic ideas about how long it would take them to master a foreign language and were therefore disappointed to see that they could not make as much progress as they had originally anticipated.

Horwitz and Young (1991), McIntyre and Gardner (1991) and Scovel (1978) all reported that much of the earlier research on language anxiety yielded mixed and confusing results. As an example, Young (1986) investigated the relationship between language anxiety and oral proficiency. He was interested to know if anxiety would reduce the scores on an oral interview. The Oral Proficiency Interview was developed by the American Council on the Teaching of Foreign Languages. Young reported that ability was the main factor affecting the scores, but he also acknowledged the fact that the participants in the study were aware that the administered oral interview was an unofficial test. Therefore, the study was unable to provide any information on language anxiety in an official testing situation. Another issue that remained unanswered was the cause and effect relationship between anxiety and language performance. The study did not show whether poor performance is likely to generate anxiety or language anxiety causes people to perform poorly on a test.

As was mentioned before, until now most of the research carried out on foreign language anxiety has been of a quantitative nature. Qualitative studies have rarely been used to gain some understanding of this

phenomenon. In one of the few qualitative studies, done by Price (1991), interesting discoveries were made. Price interviewed 10 reportedly very anxious students and audiotaped and transcribed their responses for careful analysis. The common elements in what the 10 interviewees described as their experience of anxiety were identified. As noted before, fear of speaking in public was found to be one of the major causes of apprehension, but one more significant factor that the study revealed was the learners' "perfectionism". Price's (1991) study clearly shows the significance of qualitative techniques and use of students' personal responses in determining the possible causes of FL anxiety.

3. Research Questions

In regard to the above considerations, two major questions were raised and answered in the present study.

1. Is there a relationship between reading anxiety and proficiency in the reading skill?

2. Do anxious and non-anxious learners differ in their reading style and preference for certain types of processing strategies?

4. Method

The present study is divided into 2 main sections, the first of which is a statistical study, and the second makes use of think-aloud protocol analysis and introspective techniques. These 2 phases of the study will be delineated separately in the following pages.

4.1 Quantitative research
4.1.1 Participants

The participants in the first phase of the study were language learners in an English school in Mashhad. The total number of participants was initially 100, but certain students had to be omitted due to their unsuitability (the reasons for these omissions are given later in this section). Two groups of learners were needed for the study; one group consisted of pre-intermediate learners of English and the second group

was made up of upper-intermediate learners. The criterion used to make this distinction and place the participants in the appropriate group according to their language proficiency was a Reading Paper of a sample TOEFL test. The learners taking the test were not controlled in terms of such variables as age and gender. They were randomly selected from the students enrolled in the school. Since the participants were to be placed in separate proficiency groups, it was deemed sensible to choose particular classes prior to the administration of the language test in order to facilitate and speed up the process of finding a sufficient number of suitable people for each of the groups. The researchers made selections for the lower group from among the students who had enrolled in classes corresponding to a pre-intermediate level of language proficiency. The same kind of selection was made for the higher group, whose members were upper-intermediate learners of English. The classes from which the participants of the latter group were picked were those that prepared the students for the Cambridge FCE examination. Such learners were generally at the desired proficiency level, because they had completed the intermediate courses, and were about to get to the upper-intermediate level through preparation for the FCE examination.

The total number of participants for this phase of the study was 90, in 2 groups of the same size. The 45 learners in the lower group were from 4 randomly selected classes at the pre-intermediate level, and the 45 participants of the higher group were from 3 classes at the upper-intermediate level at the same school.

4.1.2 Instruments

Two instruments were used in the quantitative part of the present study. The first, as noted above, was a Reading Paper of a sample TOEFL[1] test, and the second measurement scale was the Foreign Language Reading Anxiety Scale (FLRAS), which was administered together with the language test. The FLRAS Questionnaire was attached to the Reading Paper, and the participants were instructed to do the language test within the time limit and get to the questionnaire afterward. The time set for the

Reading Paper was 55 minutes, which is the standard amount of time available to TOEFL test takers in an authentic test.

The main rationale for using a reading paper of a sample TOEFL test was the fact that reading anxiety was at the core of this research and the researchers were interested to investigate the possible relationship between this skill-based anxiety and the learners' proficiency in the reading skill. A second reason why the researchers opted for a TOEFL test was that it has the capacity to assess learners at various levels of proficiency. In other words, it is a single test that can place learners with a very wide range of language ability at different levels based on their total score. As expected, the learners in the lower group were not able to answer all the 50 questions, and the majority only attempted to do the first 2 or 3 passages. That was sufficient, of course, to get an idea of their overall reading proficiency, so the TOEFL test served the practical purposes of the study.

The second instrument used in the study was the FLRAS (Saito et al., 1999), which is made up of 20 questions, measured on a Likert[2] scale. Each question has 5 options to choose from, ranging from *strongly agree* to *strongly disagree.* A value of 1 point is assigned to *strongly disagree,* and likewise 5 points to *strongly agree*[3] . A key-reversal was done in 4 of the questions to make them congruent with the rest of the items, because the meaning of these questions made it necessary for the values assigned to the 5 choices to be inverted. As a result, in these 4 questions, *strongly agree* had 1 point and *strongly disagree* was worth 5 points[4] .

The FLRAS[5] is a scale that specifically assesses learners' reading anxiety by measuring their degree of anxiety over various facets of reading and asking questions that are subjective in nature. For example, the learners are asked about their general attitude toward reading tasks, the relative difficulty of such tasks in comparison to the other sorts of activities they are required to engage in, the learners' reaction to the reading task when they confront a comprehension problem, and the role that cultural familiarity can play in the comprehension of L2 texts. The

learner's personal responses to these questions are used as the basis for the overall assessment of how anxious he or she feels when doing reading activities. The theoretical range of scores on this measure is 20 to 100.

4.1.3 Procedure

The fact that the members of one of the groups to be studied were chosen to be at a pre-intermediate level of proficiency made it necessary for the FLRAS to be translated into their mother tongue, i.e. Farsi. This measure was taken in order to minimize the possible effect of difficulty with reading comprehension on the responses made by the participants. It was speculated that these learners might not have yet developed a command of reading well enough to comprehend the questions in English. Such a measure was not necessary or even desirable in the case of the higher group, since their language proficiency was observably high enough not to cause such a problem. The main statistical technique applied to the data was a correlation between the two sets of scores to investigate the possibility of any correspondence between them.

4.2 Qualitative research

In qualitative studies using think-aloud protocol analysis, there are important points to consider in regard to the number of participants and the criterion for their selection. Since those who are tested through this technique are supposed to give a verbal report of the mental processes they utilize at the time they are engaged in a cognitive activity, it is important that they be articulate and eloquent individuals with the capability to produce a clear account of their thought processes[6]. While any learner is able to take a written test or give answers by marking choices on a questionnaire, participants in think-aloud protocol analysis have to possess good verbal skills, be socially competent and expressive individuals who know exactly what is required of them in such testing situations and be able to meet the demands of this sort of activity[7].

Also, as x (1997, 2003) points out, the participants must be familiar with the types of texts they are required to read and comprehend. Highly

unfamiliar topics will result in incomplete verbal reports, even in the case of the most eloquent learners. Whatever measure is taken to select the participants, be it consultation with the teacher, personal assessment of the participants' verbal skills, or any other practical method, it is important to take measures to verify their suitability.

An obvious concern for a researcher is to make a choice between the native tongue and the target language for the purpose of producing verbal reports. One option is to ask the participants/informants to give an account of their thought processes in their native language. A competing option would obviously be to require the use of L2 (i.e. English) for the verbal reports. While it is true that using L1 when reading a passage in L2 would inevitably involve translation, it does seem reasonable for the researcher to opt for this choice, rather than ask the participants to speak in the L2. This is particularly due to the fact that most learners of English, especially novice ones, have great difficulty thinking in English when they are engaged in the process of comprehending an English text. As x (1997) has noted, when a participant is urged to use the L2 for his or her verbal report, he or she may find it difficult to express certain things in the L2, and this may cause him or her to make use of the "avoidance" strategy, thereby depriving the researcher of important facts about the reading process.
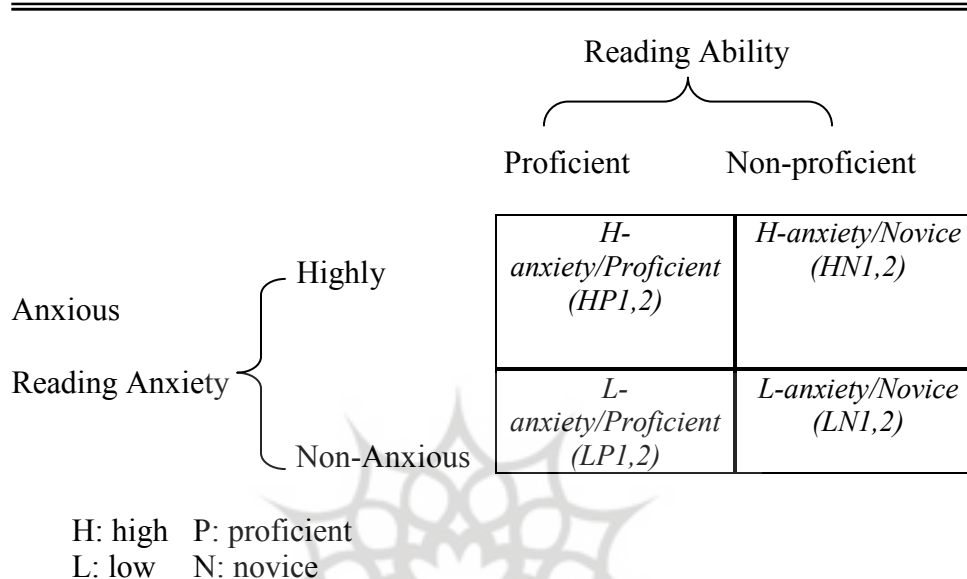
4.2.1 Participants

Eight learners were chosen to take part in this section among which 4 were selected for the final analysis. These students were selected from the population of participants in the first phase of the research. The criteria were the participants' reading ability and level of anxiety.

The above division generated 4 categories of participants:

1) Upper-intermediate, anxious learners;
2) Upper-intermediate, non-anxious learners;
3) Pre-intermediate, anxious learners;
4) Pre-intermediate, non-anxious learners.

This categorization is displayed graphically as a four-celled table in Figure 1:

Figure 1: Division of subjects into 4 groups

		Proficient	Non-proficient
	Highly	*H-anxiety/Proficient (HP1,2)*	*H-anxiety/Novice (HN1,2)*
	Non-Anxious	*L-anxiety/Proficient (LP1,2)*	*L-anxiety/Novice (LN1,2)*

Reading Ability

Anxious

Reading Anxiety

H: high   P: proficient
L: low   N: novice

Note: "proficient" and "non-proficient" refer to the upper-intermediate and pre-intermediate level, respectively

Two students were chosen for each category (one considered as backup for the other).

4.2.2 Procedure

These stages included the arrangement of the think-aloud protocol sessions, deciding upon the setting of the experiment, the pre-experimental training given to the informants, answering their questions and clearing up any possible ambiguities, and finally the measures taken during the experiment (i.e. using probes) and after it was done (i.e. eliciting retrospective data).

Before the participant is asked to perform the task, it is important to provide all necessary information about the experiment and how it should be carried out. The people chosen for this study know very little about the nature of this type of experiment. Therefore, the researchers should spend some time explaining what the general purpose of the study is, and what the participant is exactly required to do. In the present study, after the initial greeting and conversation, the researchers provided an

overview of the experiment, including its objective and the technique used. The participants were told that the main purpose of the test was to understand their thought processes, i.e. whatever they thought when engaged themselves in the activity of reading an English passage. They were informed that their voices would be recorded so that the researchers could study their reports later. In addition, the participants were taught how to report and verbalize their mental processes. The researchers especially made the point that they were interested in knowing everything; therefore, the participants had to verbalize as much of their thought processes as possible. Next, one of the researchers demonstrated the task by reading a few lines of a passage and verbalizing his thoughts in order to show the task in practice. After the initial explanations, the participants' questions regarding the test were answered. Some wanted to know some further details, and the researchers attended to the questions and provided all the details they needed to know.

Retrospection, as a multiple indicator of the task, is a particularly useful measure to elicit additional information from the participants after they have finished reading the passage. What retrospection basically involves is asking the participants to look back on what they did and make comments on the strategies they used, the overall difficulty of the passage and other related matters. These questions must be asked immediately after the task has been completed, mainly because immediately after the completion of the task the information about the passage and the way it was read is still in the participant's short term memory and can be provided to the researcher as level 1 and level 2 verbalizations. If more time passes between the completion of the task and the retrospection, by the time retrospection takes place much of what was done by the participant will have been erased from short term memory and must therefore be retrieved from long term memory, which is undesirable for the researcher, who does not need the participant's level 3 verbalizations. When the participants are asked about how easy or difficult they found the passage or what sort of strategies/techniques they used to comprehend the text, they can provide some more clues about the

reading process which they did not provide in their concurrent reporting of their thoughts. So, retrospective data is a generally useful source of information which makes it possible for the researcher to confirm his or her inferences about the participants' strategy use. A comparison between the retrospective comments of the informants and the researcher's observations and perceptions can ensure the character of the validity and correctness of the inferences.

The classification scheme applied in the present study is more or less the one used by x in his protocol studies (with certain additions and modifications). This scheme, as asserted by x (1997), is similar to Sarig's (1987) classification with some minor differences and alterations. This scheme also incorporates the distinction between "higher-level" and "lower-level" processing based on a combination of the *top-down* and *bottom-up* models of reading (i.e. an *Interactive* Model).

Table 1: Classification of processing strategies

Higher-Level Processing Strategies		
Using Prior Knowledge		
Using Background Knowledge (BK)	This strategy is the use of background knowledge and world knowledge to make sense of the text as defined in *schema theory*. This information is sometimes necessary for comprehension and drawing inferences from the text.	e.g. / *Well, I come across the word "Apollo" / makes me think that it must be about a plane, a spacecraft or something like that /*

Inferencing		
Previewing (PV)	This strategy is the reader's attempt at forming a gist of the entire passage by a quick reading of the text, and getting an idea of what it is about.	e.g. / *ok I'll read it once to see what it's about* /
Deduction (D)	Deduction is the process of coming to a conclusion, often without all the necessary and relevant information, but using what is perceived from the text in a logical way.	e.g. / *now… the word "momentous"… / I don't know its meaning / … / I know it must be about a journey* /
Inferencing (I)	Inferencing refers to using contextual clues available in the passage to infer the meaning of a word or phrase. In this classification, inferencing is confined to making sense of small chunks of language such as lexical items and phrases.	e.g. / *scientists found no trace of plant or animal life in this soil / "soil" must mean research but why…* /
Rephrasing (RP)	This strategy involves giving a full account of a sentence in L1. It is a form of translation, and the reader tries to reword the sentence he/she has read based on his/her interpretation.	e.g. *scientists found no trace of animal or plants life / they found nothing in the Moon soil / no animal or plant* /

Partial Processing (PP)	Using this strategy, the reader processes only a part of a sentence. He gives an account of what has been processed in L1, which is incomplete and does not include all the elements of the sentence.	e.g. / *the bits of glass are spherical in shape and constitute approximately half of the Moon soil / I think / sort of / half the shape of the Moon was of glass /*
Reprocessing (RP)	The reader decides to go back and reread a sentence he/she has not fully understood. By doing do, he/she spends more time working on the sentence, and tries to interpret it by thinking more about it.	e.g. / *also provided scientists with an abundance / I'll go back to the beginning /*

<div align="center">Metacognition</div>

Monitoring Statement Problem Identification at Word Level (PIW)	As the label suggests, the reader identifies a problem. He/She realizes that he/she does not understand a word in the text, and thus, tries to work out its meaning.	e.g. / *scientists have been able to ... draw inferences about its composition / I don't know "inference" either /*
Monitoring Statement Problem Identification at Sentence Level (PIS)	This strategy is the same as the above, i.e. the problem is that the reader realizes he does not understand a whole sentence, rather than a single lexical item.	e.g. / *I don't understand this sentence /*

Skipping Difficult Sections (SKD)	The reader realizes that he/she cannot comprehend a certain part of the text (a word, phrase, or sentence) and tries to skip over it and move on to read the rest of the passage.	e.g. */ I didn't understand this sentence/ since I read it twice I'll skip it /*
Controlled Skipping (CSK)	The reader does not comprehend some part of the text and decides to skip it for the time and read the rest to see if he can work out its meaning by what comes next.	e.g. */ I don't know the word "spherical / ... / I'll read the rest to see if I can figure out its meaning or not /*
Note Taking (NT)	The reader jots down notes, highlights, underlines, or encircles what he/she doesn't understand from the passage.	n/a
Higher-level Self-Correction (HSL)	The reader realizes he has made a mistake in his/her use of background or world knowledge and attempts to correct himself/herself.	e.g. */ "Apollo" must be about mythology / but no, it's got to be about space /*
Discourse Processing		
Main Idea Construction (MIC)	The reader tries to make sense of a whole paragraph by finding the important elements of the passage and working out the general idea of the passage.	e.g. */ hm… / the main idea of the passage is about space research and the scientists findings /*

Lower-Level Processing Strategies

Word Recognition

L1 Equivalent Search (L1ES)	The reader comes across a lexical item and tries to find its equivalent in his/her mother tongue.	e.g. / *this momentous trip for humanity / for humankind* [eq. in L1]/
Word-for-Word Translation (WFWT)	The reader reads the text word by word, pauses after every word or phrase and renders it into his/her mother tongue. Translations of this type are mostly literal.	e.g. / *as well as to draw inferences / do research in a good way / what does it mean?* /
Lower-level Self-Correction (LSC)	The reader self-corrects himself when he realizes he has made a mistake in recalling the meaning of a word or finding its L1 equivalent. This type of self-correction has been placed here because the mistake refers to an item in the text, hence a lower-level process.	e.g. / *the Moon soil that came back on Apollo 11… / what it brought along / but no it's "came back* /

Phonemic / Graphemic Processing

Phonic/Graphemic Analogy (PGA)	The reader tries to figure out the meaning of an unknown lexical item by comparing it with known words that look or sound the same. This can at times lead to processing word	e.g. / *improvised music / it comes from "improve" / "improve means to make progress / modern music*

	families and at other times mislead the reader due to some accidental or imagined similarity.	
Repeating to Get Word Meaning (RGWM)	The reader keeps repeating an unknown lexical item either loudly or in a low voice to make some sense of it or recall its meaning.	e.g. / ... *playing negro tunes / negro / negro /*
Repeating to Get Phrase Meaning (RGPM)	Sometimes, the reader repeats a whole phrase or short string of words to come to its meaning.	e.g. / *his father was a freed slave / freed slave / was a freed slave /*

Syntactic Processing

Grammatical Analysis (GA)	The reader tries to work out the syntactical relations between different elements of a sentence or figure out the part of speech of particular word, or decide upon the tense of a verb.	e.g. / *meteors impacted with the surface of the Moon/ "meteor" is the subject /*

Cognitive/Affective Responses

Cognitive Responses

Self-Directed Questioning (SDQ)	The reader poses a question to himself/herself, which is usually with a rising intonation. This is a response to an unknown item in the passage, while the	e.g. / *do research in a good way / what does it mean? /*

	reader is trying to work out the problem.	
Commenting on Process (CP)	The reader responds to what he/she perceives in the text by making a comment about its difficulty or announcing his/her success at solving a problem.	e.g. / *...play the works of such composers / we had "composer" before /*
Affective Responses		
Emotive Response (ER)	The reader reacts to the text in an affective way, by expressing the feeling triggered by what is perceived from the text.	e.g. / *as well as to draw inferences… / I'm more confused than the first time/*

5. Results and Discussion

5.1 Research question 1

None of the participants tested, using the FLRAS Questionnaire, scored 20 or 100 or anywhere near either of the two extremes. The actual range of scores in this administration of the instrument was 47 in the Low Group and 32 in the High Group. Interestingly, the top threshold in both groups happened to be 82.

It must be noted that Saito et al. (1999) do not assert what score range should be interpreted as indicative of high or low levels of reading anxiety. In their comparison of the groups of learners they studied, they talk of comparative degrees of anxiety and declare that a certain group is "more anxious" than another and so forth. Therefore, we do not have any predetermined criterion available to decide who is highly anxious, and who is not anxious at all. The same comparisons have been made in this study as well. The difference, however, is that a certain range of scores has been interpreted as signifying high levels of reading anxiety and another range has been determined as indicative of low levels of anxiety.

Since the theoretical range of the scale is from 20 to 100, it can safely be assumed that a learner scoring over 70 on the FLRAS must be suffering from a relatively high degree of anxiety, and likewise, the score range of 20 to 50 would indicate relatively little anxiety.

Measures of Central Tendency and Dispersion (Mean, Variance, and Standard Deviation) of the 2 sets of data (Groups A & B) are shown below:

Table 2. Descriptive results of groups A and B statistics

		FLRASA	FLRASB
N	Valid	45	45
	Missing	0	0
Mean		55.8667	53.1333
Std. Error of Mean		1.39030	1.23485
Median		56.0000	53.0000
Mode		60.00	49.00(a)
Std. Deviation		9.32640	8.28361
Variance		86.982	68.618
Skewness		.381	-.077
Std. Error of Skewness		.354	.354
Kurtosis		1.231	-.681
Std. Error of Kurtosis		.695	.695
Range		47.00	32.00

a Multiple modes exist. The smallest value is shown

The standard deviations of the two groups signify that there is wider "dispersion" in the low group ($SD_L \approx 9$) in comparison with the high group ($SD_H \approx 8$). In other words, scores of the pre-intermediate learners are more widely dispersed than those of the upper-intermediate learners

Figure 2. Overall Proportion in both groups

3%

34%

■ Non-anxious (20-50)
■ Middle Range (50-70)
□ Highly Anxious (70-100)

63%

$$SD_L > SD_H$$
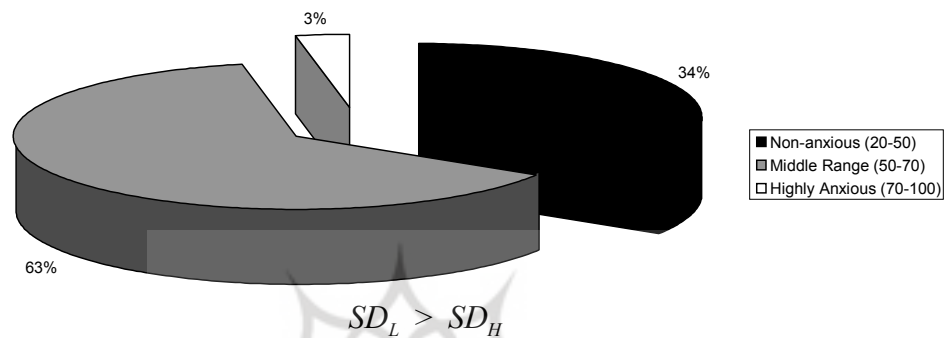
According to the average scores of the two sets of data (i.e. the means of the 2 groups), the pre-intermediate participants are *on average* slightly more anxious than the upper-intermediate participants.

$$\overline{X}_L < \overline{X}_H$$

*Descriptive statistics for the total data (Group A + Group B):

Table 3. Paired samples statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	FLRASAB	54.5000	90	8.87776	.93580
	TOEFLAB	17.7444	90	8.61089	.90767

Using Pearson Product-Moment Correlation, the following results were obtained:

*Correlation between FLRAS and TOEFL in Both Groups:

Table 4. Paired samples correlations

		N	Correlation	Sig.
Pair 1	FLRASAB & TOEFLAB	90	-.094	.378

The correlation coefficient is close to zero. Certain studies in the past have shown a negative correlation between FL anxiety and general language proficiency (e.g. Aida, 1994; Bailey, 1983). This study attempted to explore the relationship between a particular type of FL anxiety (i.e. reading anxiety) and a distinct domain of language proficiency (i.e. reading proficiency). Therefore, the absence of a significant correlation between the two variables of this study may not be very surprising, after all. It is likely that a result similar to that of the above studies would have been obtained if FL anxiety and general proficiency across the four skills had been examined.

5.2 Research question 2

We will now look at the introspective experiments of the study. A close look at the anxious skilled reader and the non-anxious skilled reader demonstrates that the total number of strategies used by the former is roughly half of that of the latter. The anxious reader spent considerably less time to read the passage, and did not comprehend as much of the passage as the non-anxious reader did. The two readers are not significantly different in terms of the variety of strategies they employ. The non-anxious reader made use of 11 different lower-level and higher-level strategies, and the anxious reader used 12 different strategies at these two levels. The ratio of the frequency of higher-level to lower-level strategies is 27 to 9 for the non-anxious reader and 17 to 3 for the anxious reader. These two ratios are not considerably different either.

Table 5. Frequency of reading strategies used by the non-anxious skilled reader

Higher-level Processing Strategies		Lower-level Processing Strategies		Cog. / Aff. Responses	
RP	5	L1ES	1	ER	1
PP	10	RGWM	3	CP	4
D	5	WFWT	2	SDQ	6
PIW	2	GA	2	_____	
I	4	LSC	1	Sum: 11	
R	1	_____			
_____		Sum: 9			
Sum: 27					

Table 6. Frequency of reading strategies used by the anxious skilled reader

Higher-level Processing Strategies	Lower-level Processing Strategies	Cog. / Aff. Responses
BK: 1 R: 1 PIW: 3 CSK: 3 D: 1 I: 1 RP: 3 PP: 2 SKD: 2 Sum: 17	RGPM: 1 RGWM:1 PGA: 1 Sum: 3	CP: 5 Sum: 5

Table 7: Summary of the frequency of strategies for the anxious and non-anxious skilled reader

	Non-anxious skilled readers	Anxious skilled readers
Higher-level strategies	27	17
Lower-level strategies	9	3

By poring over the two readers' choice of strategies, it is clear that a striking difference between the two lies in their use of "deduction" and "inferencing". The anxious reader uses each of the above strategies once. The non-anxious reader uses "deduction" 5 times, and "inferencing" 4 times. This can be regarded as a remarkable difference, given the fact that the passage they read was relatively short, and such a vast difference in their use of the above two higher-level strategies within the limits of a

10-lined paragraph may indeed be meaningful. Examining the group of strategies that each reader made frequent use of is quite illuminating. While the non-anxious reader seems focused on deduction, inferencing and reprocessing of difficult segments to make as much sense of the text as he possibly can, the anxious reader is more concerned with problem identification and skipping. The above difference in reading style will be more striking when one remembers that both readers are at about the same level of proficiency in the reading skill. Obviously, the observed differences are not due to high reading ability in one, and low ability in the other; it can only be construed as the result of their different degrees of reading anxiety.

The following chart (Figure 3) is a graphic representation of the most frequently used types of strategies for the anxious and non-anxious skilled reader. The strategies whose relative frequency has been very different for the two readers have each been displayed here as a bar. The strategies that are not particularly significant in the analysis have not been incorporated into this chart. The legend and table below the chart explain the bars and colors[8].

Figure 3: Differences between the anxious and non-anxious skilled readers

	PIW Anxious	SK Anxious	I Non-Anxious	D Non-Anxious	RP Non-Anxious
Series1	3	5	4	5	5
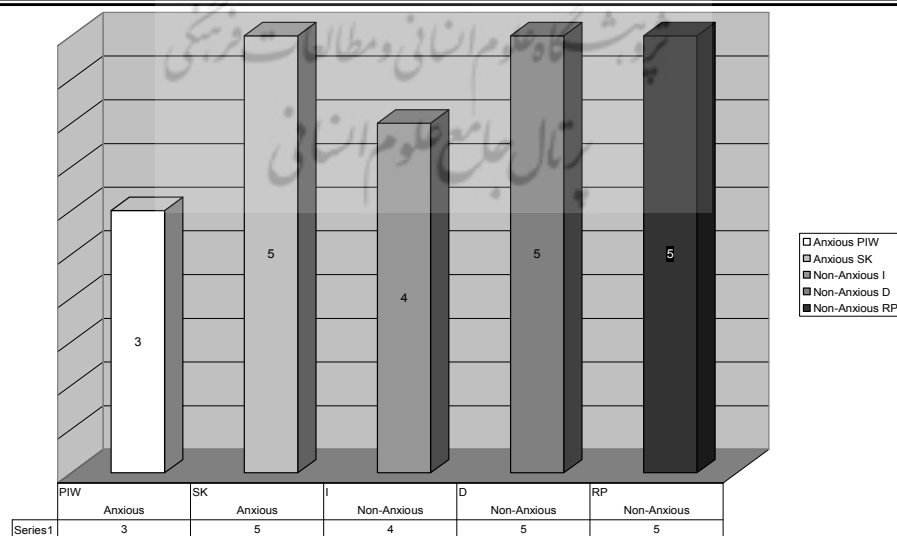
Much is now known about the two participants' reading style and personal preferences. The non-anxious reader seems determined to process and comprehend the text by using efficient higher-level strategies. The anxious reader, however, simply identifies problems and decides to skip over them. Both readers give more weight to higher-level strategies, which is confirmed by the findings of similar introspective studies on skilled readers. But it is highly important to note that they make use of *very different* higher-level strategies; the non-anxious reader is concerned with processing and decipherment of meaning, whereas the anxious reader is preoccupied with identifying problems and passing over them. This is definitely the most significant finding of this part of the analysis.

We will now turn our attention to the other two participants, that is, the anxious and non-anxious novice readers. It would be interesting to know if a similar difference or some other meaningful distinction could be observed between the two readers at the pre-intermediate level. A similar difference is observed in the case of the novice readers in terms of frequency of use of strategies. The non-anxious reader uses a considerably larger number of strategies than the anxious reader. The total number of the non-anxious reader's strategies and responses is 62, compared with the anxious reader's 42 strategies and responses. The same difference was observed in the higher group. Both non-anxious readers produce longer verbal reports, and employ more strategies than the anxious ones.

Table 8. Frequency of reading strategies used by the non-anxious novice readerss

Higher-level Processing Strategies		Lower-level Processing Strategies		Cog./Aff. Responses	
PP:	7	RGWM:	11	CP:	2
PIW:	7	RGPM:	5	SDQ:	7
SKD:	2	L1ES:	7		
RP:	1	LSC:	3	Sum: 9	
PIS:	1	WFWT:	3		
R:	3	GA:	1		
HSC:	1	PGA:	1		
Sum: 22		Sum: 31			

Table 9. Frequency of reading strategies used by the anxious novice readers

| Higher-level Processing Strategies		Lower-level Processing Strategies		Cog./Aff. Responses	
PP:	2	RGPM:	6	CP:	1
D:	3	RGWM:	9	SDQ:	1
PIS:	2	GA:	1		
SKD:	1	L1ES:	4	Sum: 2	
R:	2	PGA:	1		
RP:	5	Sum: 21			
CSK:	1				
NT:	3				
Sum: 19					

Table 10: Summary of the frequency of strategies for the anxious and non-anxious novice readers

	Non-anxious Novice readers	Anxious Novice reader
Higher-level strategies	22	19
Lower-level strategies	31	21

The non-anxious novice reader was at a lower level of reading proficiency than the anxious reader. However, it seems that since the time they took the TOEFL test, she has made much more progress at the reading skill than the anxious one. That is because she actually manages to process and comprehend more words. While the anxious reader comprehended approximately half of the text, the non-anxious reader clearly processed all the sentences, and except for one or two phrases, the rest of the passage was clear to her. That might suggest that non-anxious readers improve more quickly than anxious ones. When the two learners took the reading paper of the sample TOEFL test, the anxious and non-anxious reader scored 14 and 9, respectively. Around 2 months later, their performance in this introspective experiment showed almost the reverse. Both were still at the pre-intermediate level, but the non-anxious learner seemed to have made more progress.

The chart in Figure 4 shows the observed differences between these two readers. It indicates two important points. One is that for both readers lower-level processes are more widely used than higher-level ones[9]. The second point is that the non-anxious reader generally uses many more strategies than the anxious reader. Her total number of strategies is 53, compared with the anxious reader's total number of strategies, which is 40. The difference between the two is noticeable, especially that the text they read was quite short in length.

Figure 4: Differences between the anxious & non-anxious novice readers

| | Higher-level | Lower-level | Higher-level | Lower-level |
	Anxious	Anxious	Non-Anxious	Non-Anxious
Series1	19	21	22	31
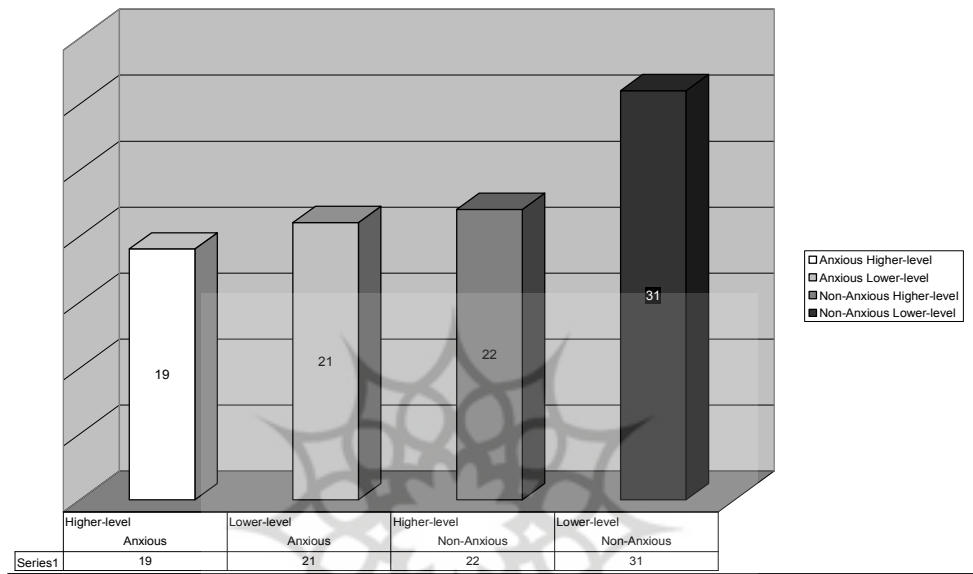
In addition to specific findings at the two different proficiency levels, two general facts were discovered about the 4 readers of the study, which will be stated here in the final part of this section. One is that since the ratio of the frequency of higher-level to lower-level strategies has been similar at both levels of proficiency, the observed difference between the two readers in both pairs should not be ignored and considered incidental. It was even observed among the backup informants. So, it appears to be a permanent characteristic of the majority of readers, at least at the two proficiency levels studied here.

Moreover, it was confirmed that novice readers are habitually more dependent on text-based processes, in contrast to skilled readers who tend to focus on higher-level strategies. This had been observed in a number of other protocol studies on novice and skilled readers, and the same distinction was found in the present study. It may seem highly hypothetical at this stage, but there seems to be compelling evidence pointing to the fact that, as far as reading anxiety is concerned, non-

anxious novice readers make better use of lower-level processing strategies, in comparison with their anxious counterparts. They generally have better interaction with text, and assume a more active role in the process. As their proficiency increases, a shift of focus occurs and they give more weight to higher-order processes. The same change takes place in anxious readers too, with the noticeable difference that non-anxious readers make much better use of deductive and inferential thinking, while anxious readers even at high proficiency levels, still have problem with these processing tools, and consequently have to skip all that they cannot process.

In light of the above hypothesis, the general course of development that anxious and non-anxious learners undergo by the passage of time differs in certain respects. Reading anxiety seems to hinder the overall progress of learners. In this experiment, it was observed that while skilled and novice readers are generally different with regard to their reading style and emphasis on level of processing (higher-level vs. lower-level), anxious readers are always less efficient processors of text, regardless of reading ability.

6. Summry

The present study produced certain results, but many more studies of this type are required to obtain definitive results as to the relationship between reading anxiety and personal reading style, and all the other marginal questions raised in this study. A related issue that is worth studying is the possible link between "reading anxiety" and "general anxiety." It could be that situation-specific anxieties may in fact be related to anxiety as a trait. In this study, the researcher noticed that those learners who were found to be suffering from reading anxiety were indeed nervous at the time of the experiment, even before being asked to do anything. As discussed earlier, the researcher had much difficulty experimenting on these individuals due to their uncooperativeness. Therefore, it would be interesting to know whether or not reading anxiety could be symptomatic of trait anxiety. If that is the case, medication

prescribed in the case of general anxiety might be effective in alleviating language anxiety as well. These are mere speculations, of course. Looking into these issues may, however, open up new possibilities.

Researchers have long stressed the role of the language instructor in arousing or alleviating feelings of stress and tension in class. It is equally likely that the teacher's ideas and general attitude toward certain language skills can influence the students' view of those particular skills and the importance they attach to learning them. Future studies should look at this matter, and find out whether language teachers do indeed exert any influence in this regard. Language institutes are fast flourishing, and there is a growing need for more and more language teachers to be recruited. This growing trend can be both positive and negative. Teacher training courses must be good enough to genuinely prepare teachers for the difficult and sensitive job of teaching languages. If teachers are wrongly biased in their attitude toward what is or is not important to learn, this can easily affect students, who usually look up to their teacher as a perfect model to follow.

Moreover, if reading anxiety is indeed related to learners' strategy use, ways to improve and modify anxious learners' reading style should also be examined. It would be important to know how anxious students can be assisted in the skill of reading. The same issue can be a concern in the case of the other skills as well. Writing Anxiety is currently being studied, and possible solutions in that area will be equally desirable and informative. Researchers should also examine anxiety among language teachers. It is likely that intrinsically anxious teachers negatively influence their students, and induce the same feelings in them. There is probably no evidence at present pointing in that direction, but it is an issue well worth looking at. If future research suggests that there might indeed be such a relationship, and that the teacher's trait or state anxiety might work as a stimulant to provoke similar feelings in students, teacher training and selection will naturally become an even more crucial factor.

In conclusion, many more case studies of this type should be carried out to enable us to make balanced and accurate judgments on the

differences and commonalities between anxious and confident readers. The think-aloud procedure seems a promising tool to unravel some of the mysteries. Saito *et al*. (1999), the people who have developed the FLRAS, regard this research technique as a possible avenue for future reading research. This was essentially one of the primary motivators for employing think-aloud protocol analysis in the present study. Preferably, all protocol analyses of language learners' reading should rest upon the same theoretical model and classifications, so that results can be easily compared and interpreted.

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Notes

[1] The sample reading paper of the TOEFL used in this study was taken from Longman Preparation Course for the TOEFL Test, vol. B (Practice Tests), 2nd Edition, 1996, by Deborah Phillips.

[2] A type of "attitude scale", in which the respondent is asked to show how strongly he/she agrees or disagrees with a statement he/she has been presented with by marking a scale ranging from "strongly agree" to "strongly disagree" or vice versa.

[3] The other options and their values are: "agree"=2 points, "neither agree nor disagree"=3 points, and "disagree"=4 points.

[4] Whenever a respondent left a question unanswered, it was marked as "neither agree nor disagree". The vast majority of participants responded to all the questions.

[5] It should be noted here that no time limit was considered for this instrument. The participants were allowed to take their time to think about the questions and choose the answer they felt was best for them.

[6] This has been labeled by researchers as the Reportability Criterion.

[7] The distinction between "representative" informants and "good" informants arises from the point discussed above. To do protocol analysis, Alderson (1990) preferred to use suitable informants, rather than representative ones in a population of subjects (in x, 2003).

[8] "Partial Processing", which is also a frequently used strategy by the non-anxious reader (used 10 times) has not been displayed here, because it is a relatively obscure strategy and does not specify the exact cognitive process involved. Even if this strategy were included in the analysis, it would only serve to confirm the non-anxious reader's rigorous processing of the text in comparison with the anxious reader, who has only used it twice.

[9] Even if we consider S DQ as a metacognitive strategy, the ratio of higher-level to lower-l evel processes will not change, and the same conclusions can still be drawn.