



## **Effect of Metacognitive Strategy Training and Perfectionism on Listening Comprehension Sub-processes**

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### **Abstract**

The present study aimed to examine any possible relevance of perfectionism as a personal trait variable, in moderating the effectiveness of meta-cognitive instruction on bottom-up and top-down sub-processes of listening comprehension with a sample of EFL learners in Iranian context. To this end, 94 female EFL learners were selected from among 136 EFL learners at Andisheh Language Institute in Malayer, Iran based on the results of a homogenizing test (PET). The selected participants in 4 intact classes were randomly assigned to an experimental and a control group. Learners' perfectionist tendency was measured by Ahvaz Perfectionism Scale and all participants were labeled as perfectionist or non-perfectionist by considering the median score as the cut-point. Two sessions of treatment were dedicated to explicit instruction of 5 metacognitive strategies for the experimental group, which was spared for the participants in the control group who received regular listening practice based on comprehension checking. Two sets of listening comprehension questions measuring top-down and bottom-up sub-processes adopted from TOEFL archives were administered as the post-test. The results indicated that both bottom-up and top-down listening comprehension were fostered by metacognitive instruction. Perfectionists and non-perfectionist EFL learners did not differ with regard to the effect of metacognitive instruction on their top-down listening comprehension though a significant moderating effect was observed for the bottom-up listening comprehension. The patterns of interaction between perfectionism and the two sub-processes of listening leave us in a better position to understand L2 listening process.

**Keywords:** Metacognitive instruction, bottom-up, top-down, listening, perfectionism

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## **Introduction**

Among the four skills in English language learning, listening plays the most important role in real life communications (Mendelsohn, 1998). As a result, elucidations on the process of L2 listening have been the object of a major portion of endeavors in second language acquisition research. Two metaphors used to explain the cognitive processes involved in listening comprehension, i.e., bottom-up (BU) and top-down (TD) processing were proposed by Rumelhart and Ortony (1977) and expanded upon by Richards (1998). Both BU and TD processes are essential in L2 listening, the difference between the two being in the way listeners attempt to understand what they hear.

Successful involvement in both BU and TD processes requires the ability to apply certain metacognitive strategies, a term which was coined by Flavell (1976) to refer to an individual's awareness of thinking and learning: What, how and why one thinks in relation to a learning task and in a particular way. Due to the differences in their cognitive style, some L2 learners might be good at TD processing while some others may exhibit a better performance with BU understanding. Therefore, improving learners' skills in handling these two dimensions will be essential. One proposal is to increase learners' awareness of a set of cognitive processes involved in listening comprehension. Nevertheless, there is no evidence available in the literature to indicate whether meta-cognitive instruction equally affects BU and TD aspects of L2 listening. On the other hand, the effects of metacognitive instruction on L2 listening comprehension tend to vary by factors of individual difference including motivation, aptitude, learning style and personality traits (Goh, 2008). One of the personality factors which is a candidate to moderate the effect of meta-cognitive strategy training is perfectionism.

The present study attempted to explore the effectiveness of meta-cognitive strategy training on L2 listening comprehension along its BU and TD processing dimensions while controlling for any moderating effect of perfectionism as an individual difference factor in L2 development. It queries whether the effect of meta-cognitive listening strategy instruction is different for perfectionist and non-perfectionist L2 learners. The findings are expected to add to the existing knowledge on the effectiveness of meta-cognitive strategy training in improving L2 learners' BU and TD comprehension with perfectionist/non-perfectionist tendencies. Determining the moderating effect of perfectionism on two aspects of listening comprehension will help English teachers to be more sensitive to their learners' psychological traits when performing different types of tasks and activities.

## **Literature review**

The cognitive theory of learning examines the mental processes involved in learning. One of the areas where developments in cognitive psychology have mainly influenced the theory of second language acquisition is the research on language learning strategies (Williams & Burden, 1997). Macaro (2001) considers strategy research as "part of the general area of research on mental processes and structures that constitute the field of cognitive science" (p. 6). He defines language learning strategies in terms of language learning behaviors that learners engage in, the knowledge that they have about their behaviors, and the knowledge they have of themselves as learners and the language they are learning. O'Malley, Chamot and Kupper (1989) divide strategies into two main categories:

cognitive and metacognitive. While cognitive strategies are used to help learners process, store and recall newly obtained information (Goh, 1998), metacognitive strategies involve managing techniques applied by students to handle their own learning (Rubin, 1987). The term “metacognitive strategy” was originally coined by Flavell (1976) to refer to an individual’s awareness of thinking and learning. Several studies indicated that meta-cognitive knowledge can be improved through instruction (e.g., Liu and Goh, 2006; Mareschal, 2007; Vandergrift, 2004). Vandergrift (2003) conducted a study to identify the association between listening proficiency and listening strategy use among high school students in Canada. The participants listened to various texts and were supposed to think aloud throughout the process. The results indicated that proficient listeners made use of meta-cognitive strategies more often than the less proficient listeners. Vandergrift (2003) thus concluded that training less proficient listeners to employ metacognitive strategies would improve their listening comprehension. The findings of Goh (2002) indicated that the more proficient listeners used metacognitive and cognitive strategies. It was also revealed that the less proficient listeners were frequently distracted by unacquainted words or expressions.

In the same vein many studies have verified a relationship between meta-cognitive instruction and improvement of listening performance (e.g., Vandergrift, 2007; Zeng, 2007). The present study seeks to extend the boundaries of individual differences discussed in foreign language learning and to focus on an important learner characteristic, i.e., perfectionism. Pacht (1984) defines perfectionism as “holding standards that are beyond reach or rationality, straining to reach those impossible goals and defining one’s worth by the accomplishment of those standards” (p.386). The theoretical rationale of the present study was taken from the works of Goh who believes that the effectiveness of meta-cognitive instruction on the processes involved in L2 listening comprehension tends to be affected by individual difference factors, including motivation, aptitude, learning style and personality traits (Goh, 2008). A good number of studies in EFL context have focused on the concept of perfectionism including Gregersen and Horwitz (2002), Pishghadam and Akhondpoor (2011), and Moradan, Kazenian, and Niroo (2013). Gregersen and Horwitz (2002) examined the relationship between perfectionism and language learning with a focus on language anxiety. Based on the review of the related literature and empirical studies on listening comprehension, strategy training, and perfectionism, no study has addressed the effect of meta-cognitive instruction on bottom-up and top-down listening comprehension with regard to perfectionist and non-perfectionist EFL learners in Iranian context. Therefore, the present study tries to answer the following research questions:

1. Does metacognitive instruction have any effect on perfectionist and non-perfectionist Iranian EFL learners’ top-down listening comprehension?
2. Does metacognitive instruction have any effect on perfectionist and non-perfectionist Iranian EFL learners’ bottom-up listening comprehension?

## **Method**

### *Design*

To examine whether metacognitive instruction and perfectionism had any significant effect on TD and BU processes in listening comprehension, the present study adopted a quasi-

experimental design. Metacognitive instruction and perfectionism were considered as independent variables, while TD and BU processing were regarded as dependent variables.

### *Participants*

The participants of the present study were 94 female Iranian EFL learners selected from among 136 EFL learners at *Andisheh* Language Institute in Malayer, Iran. After the administration of a proficiency test, the participants were selected as two intact groups in four classes: Experimental group (N=46, in two classes) and Control group (N=48, in two classes). Their age ranged from 14 to 18. The language institute and participants were selected through convenience sampling.

### *Instruments*

Preliminary English Test (PET for School-Aged Learners) was used in the present study as a homogenizing test for choosing EFL learners at the same level of English proficiency. It included totally 42 items in four sections of reading, writing, listening and speaking.

Top-down and bottom-up listening comprehension test was obtained from the archives of TOEFL PBT. 30 question items from the 'short-answer conversations' section of pBT standard tests were judged by three experts (professional EFL teachers and university teachers in ELT) as measuring whether TD or BU sub-processes of listening. 7 items were judged by the experts as measuring BU comprehension and 23 items were judged as measuring TD comprehension. Therefore, the validity of the test was assured by three experts. The reliability of the listening test was calculated as .71 through Cronbach's Alpha estimation in a pilot administration on 22 parallel learners.

Ahvaz Perfectionism Scale (APS) developed by Najarian, Attari and Zargar (1999) was used to determine learners' dominant tendency regarding perfectionism. In the scoring procedure, some of the items (i.e., item 11, 16, 17 and 22) were negatively worded. Its internal consistency had already been estimated through Cronbach's Alpha to be .90 for the whole sample (Najarian et al., 1999).

### *Procedure*

The route taken in the current study can be summarized in four stages. Firstly, a homogenizing test (i.e., PET) was administrated to 136 EFL learners from among whom 94 learners were selected for the purpose of the study based on their distribution according to standard deviation in 4 intact classes randomly assigned to experimental (N=46 in two classes) and control groups (N=48 in two classes). Secondly, in order to assess the dominant perfectionist tendency of the participants, they were asked to take the Ahvaz Perfectionism Scale. The median score was used as the cut point to label each of the learners as perfectionist or non-perfectionist. Thus, those who obtained 54 or less were considered to be non-perfectionist while those who scored above 54 were regarded as perfectionists. Thirdly, two sessions of treatment (4 hours) were dedicated to metacognitive instruction for the experimental group, while participants in the control group received their regular listening activities based on listening tasks followed by comprehension checks. The metacognitive instruction targeted five strategies: (1) planning/predicting (2) reflection (3) first verification (4) second verification and (5) final verification (Vandergrift & Goh, 2012). In the *planning/predicting part*, they were given instructions on how lexical information can be predicted while listening to the text. This helped them to understand

planning. In *reflection part*, the participants were asked to write down some goals for the upcoming listening. The *first verification part* engaged them in listening for the first time to evaluate their predictions about the topics and words used. At this stage, they were guided to take note of some further information. The *second verification part* provided practicing opportunities for the participants to listen to the same text anew so that they could figure out the points they had missed or misheard at first time. This stage helped them identify their listening problems through monitoring strategy. The *final verification part* allowed the participants to listen to the same text for the third time. This stage assisted listeners to identify any potential mishearing at the first or second verification stage. At the end, the TD and BU listening comprehension test was given to both experimental and control groups for measuring participants' BU and TD comprehension.

### Data Analysis

After collecting the required data, two Two-Way ANOVAs were separately run: One for answering research question 1 and the other for answering research question 2.

### Results

After having checked the assumptions of Two-Way ANOVA, the descriptive results of the test for TD and BU listening comprehension scores in both control and experimental groups were calculated.

**Table 1.** Descriptive statistics for perfectionism in control and experimental groups

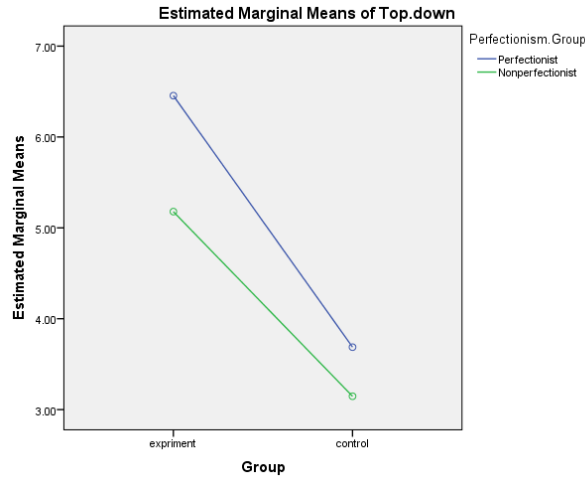
Variable	Group	Frequency	Mean	Standard Deviation	Minimum	Maximum
Perfectionist	Experimental	20	83.31	3.82	79	90
	Control	16	84.50	4.33	77	90
Non-perfectionist	Experimental	26	42.85	4.07	35	49
	Control	32	42.36	3.34	36	50

The perfectionists' mean scores of perfectionism in the experimental and control group were 83.31 and 84.5, respectively. The non-perfectionists' mean scores of perfectionism in the experimental and control groups are 42.36 and 42.85, respectively. The mean scores of TD listening comprehension test in the experimental group for perfectionists and non-perfectionists are 12.90 and 10.35, respectively. This shows that in the experimental group, the scores of perfectionists for TD listening comprehension don't significantly differ from those of non-perfectionists. To answer the first research question, a two-way ANOVA was run whose results are presented in table1 below:

**Table2.** Tests of between-subjects effects for top-down listening comprehension

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	7881.99	1	7881.99	364.30	.00	.79
Meta-cognition	532.14	1	532.14	24.59	.00	.20
Perfectionism	76.25	1	76.25	3.52	.06	.03
Meta-cognition * Perfectionism	12.50	1	12.50	.57	.44	.00
Error	2077.05	96	21.63			
Total	10964	100				

The interaction effect of meta-cognitive instruction and perfectionism status on EFL learners' TD listening comprehension turned out to be non-significant ( $F = .57, p = .44$ ). In other words, there was no significant difference between the perfectionists and non-perfectionists with respect to the effect of meta-cognitive instruction on their TD listening comprehension. Figure 1 illustrates the interaction effect of meta-cognitive instruction and perfectionism status on top-down listening comprehension:



**Figure 1:** The effect of meta-cognitive instruction and perfectionism on TD listening

To answer the second research question, the mean and standard deviation of the experimental group came out to be 5.74 (out of 7) and 2.80 for the test of BU listening comprehension. Likewise, the mean and standard deviation of control group for the test of BU listening comprehension were 3.32 (out of 7) and 1.78. The mean scores of BU listening comprehension test in the experimental group for the perfectionist and non-perfectionist participants were 6.59 and 4.85, respectively while BU listening comprehension scores for perfectionists and non-perfectionists were .93 and .82 (out of 7) respectively. To test any significant differences between the groups, a two-way ANOVA was run the results of which are demonstrated in Table 2.

**Table 2:** Tests of between-subject's effects for bottom-up listening comprehension

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	1008.08	1	1008.08	1022.78	.00	.91
Meta-cognition	542.16	1	542.16	550.04	.00	.85
Perfectionism	19.72	1	19.72	20.01	.00	.17
Meta-cognition * Perfectionism	15.15	1	15.15	15.37	.00	.13
Error	94.62	96	.98			
Total	1748	100				

The interaction effect of meta-cognitive instruction and perfectionism status on learners' BU listening comprehension was also significant ( $F = 15.37, p = .00$ ). Thus, there was a significant difference between the perfectionists and non-perfectionists with respect to the effect of meta-cognitive instruction on their bottom-up listening comprehension. Figure 2 also shows the interaction effect of meta-cognitive instruction and perfectionism status on BU listening comprehension.

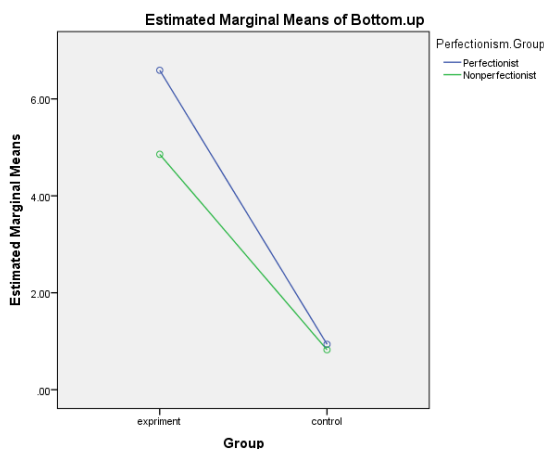


Figure 2: The effect of meta-cognitive instruction and perfectionism on BU listening

Regarding the first research question, the results showed that meta-cognitive instruction exerted a significant effect on TD listening comprehension of the EFL learners. The interaction of meta-cognitive instruction and perfectionism status had no significant effect on the EFL learners' TD listening comprehension. Concerning the second research question, it was indicated that meta-cognitive instruction had a significant effect on the EFL learners' BU listening comprehension. The interaction of meta-cognitive instruction and perfectionism status exerted a significant effect on the EFL learners' BU listening comprehension.

## Discussion

The findings of the present study indicate that the adoption of metacognitive listening strategies is vital for listening comprehending at both BU and TD levels. This finding is well justified by Vandergrift (2004) who maintains that in order to accomplish the listening process efficiently, listeners should regularly use strategies, and other existing pertinent information to deduce what was not understood.

Another innovative aspect of the present study was examining the effect of metacognitive instruction on listening comprehension with regard to perfectionist and non-perfectionist EFL learners. The results indicated no significant difference between perfectionist and non-perfectionist EFL learners with regard to the effect of meta-cognitive instruction on their TD listening comprehension. This finding can be justified taking into

account the mechanism of TD processing. As Long (1989) states, learners resort to their background knowledge in TD processing. Since schemata cannot be largely affected in a short period of time, through meta-cognitive instruction, the effect of meta-cognitive strategy training did not significantly differ for perfectionist and non-perfectionist EFL learners.

On the other hand, the results showed that the interaction of meta-cognitive instruction and perfectionism status exerted a significant effect on the EFL learners' BU listening comprehension with perfectionists being more affected by metacognitive instruction than their non-perfectionist counterparts. This finding can be justified with regard to the characteristics of perfectionists. According to Mehrabizadeh and Verdi (2003), perfectionism has been reported to be of debilitating effect. However, this effect has not been investigated with regard to language learning. Since perfectionists prefer to be perfect in their engagement with activities (Stober & Stober, 2009), they usually do not lose the chance of learning and acquisition. One of the main concerns of perfectionists is self-evaluation (Frost, Marten, Lahart, & Rosenblate, 1990) which is also one of the main focuses of metacognitive instruction (Rubin, 1987) that involve managing techniques to handle the learning through planning, monitoring, modifying, and evaluating. According to Frost et al. (1990), perfectionists have high standards of performance accompanied by a tendency to critical self-evaluation. Another reason for their being more affected by metacognitive instruction might be related to their expectations and interpretations of events, and analyses of themselves (Moazen, Azad-Fallah & Safi., 2009). They pay too much attention to others' assessment about themselves. They are too worried about not being accepted by others.

This finding of the study is largely in agreement with Pishghadam and Akhondpoor (2011) who found a reverse association between reading, speaking, listening, GPA, and perfectionism. The findings of their study showed that language learners' perfectionism is correlated with low academic achievement and poor performance in language skills. Also, Moradan, et al. (2013) found a negative relationship between perfectionism and listening comprehension, and that female learners were more perfectionist than their male counterparts. They concluded that perfectionism exerted a negative effect on listening comprehension.

## **Conclusion**

The results showed that the interaction of meta-cognitive instruction and perfectionism status had no significant effect on the EFL learners' TD listening comprehension though it exerted a significant effect on the EFL learners' BU listening comprehension. A number of implications could be suggested based on the findings of this study. It seems reasonable to suggest that EFL/ESL teachers should try to employ practices foster learners' use of metacognitive strategies. Educational policy makers, syllabus designers, and material developers should make an effort to design lessons and incorporate activities which encourage metacognitive strategy use. Test designers should make accommodations to encourage learners to use more metacognitive strategies. Those language learners with poor metacognitive listening strategy use should be identified to receive special instruction of metacognitive strategies to promote their listening comprehension. Perfectionist and non-



perfectionist language learners should be informed about the consequences of having perfectionist or non-perfectionist tendencies in language learning and listening comprehension success. Traditional methods of teaching listening must be adapted to the needs of a more dynamic and audience-oriented procedure. Language learners really need course books and materials that incorporate metacognitive listening strategies in their syllabi. A more comprehensive understanding of the individual differences witnessed about the effectiveness of metacognitive strategy training on EFL listening comprehension at different proficiency levels requires further research on the moderating effects of other personality factors such as introversion/extroversion, field-dependence and cognitive style.

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