ARECLS, 2008, Vol.5, 84-104.

A STUDY OF THE INTERRELATIONSHIP BETWEEN LISTENING STRATEGY USE, LISTENING PROFICIENCY LEVELS, AND LEARNING STYLE

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Abstract

This paper reports on the interrelationship between learners' listening strategy use across listening ability, and learning style. A sample of 101 Taiwanese university EFL (English as a Foreign Language) students was surveyed with two structured pencil-and-paper questionnaires of listening strategy use (O'Malley *et al*. 1985; Vandergrift 1997) and learning style (Willing 1988; Nunan 1996). First, with the one-way between groups analysis of variance (ANOVA), the results suggested that there was a statistically significant difference between the strategy use and the attainment levels at the $p < .05$ level. Second, the findings also suggested that listening strategy use was significantly associated with learning styles (Sig. $p < .05$). Finally, the aim of this article was to throw some light on a little-investigated area, namely, listening comprehension strategies and learning style in L2.

Keywords: *Listening comprehension strategies, learning style, cognitive style, Language Learning Strategies, Second/Foreign Language Learning*

1. Introduction

Language learning strategies (LLS) have attracted growing interest in second or foreign language (L2 or FL) learning for the past thirty years or so. Research into

this defined discipline has yielded a plethora of publications, including Naiman et al. (1978 reprinted in 1996), Oxford (1990), O'Malley *et al*. (1985), Rubin (1981), Graham (1997), Vandergrift (1997; 2003), Macaro (2001), Goh (2002) and Bacon (1992). These studies have shown that L2 learners employ conscious techniques to enhance using or learning the target language, and to achieve communicative competence. The deployment of the strategy use implies the optimal goal of self-regulated or autonomous learning in education, whereby learners make their own choices, set the learning objectives, monitor the learning progress and evaluate the learning outcomes.

However, research into the interrelationship between specific language modalities (e.g., speaking or writing) and varied factors (e.g., learning preferences or personalities) has been a less investigated area. In particular, the relation between listening comprehension and learning style is the least examined area (Macaro *et al*. 2007). As speculated, there is a close relationship between learners' strategy use and their cognitive or learning styles. When a learner sets a goal and carries out a series of actions or strategies to achieve the intended goal, it is considered an overt behaviour. On the contrary, the cognitive style of the learner is covert or unobservable behaviour. So, the cognitive style would be readily accessible by the conscious strategy deployment (Ehrman *et al*. 2003).

In this article, we first review the dynamic aspects of listening comprehension and learning styles underlying the information processing regarding how L2 knowledge is processed, stored, and retrieved; we then exemplify some research studies in relation to our current interest.

2. An Overview of Relevant Research

The underpinning theory of information processing (Anderson 2005) has been established within the realm of L2 or FL teaching and learning, which depicts how a learner handles information or processes the input resources. In the listening comprehension, the internalised processing could be identified in three stages in different parts of the memory. In the perceptual phase, a listener is consciously attending to sounds of speech (e.g., intonation), and the aural input is kept in echoic memory. Because of the limited capacity in the memory, some parts of the information are initially interpreted and some parts are lost during this stage. In the parsing phase, meaning construction takes place from the words of the original input in short-term memory to form meaningful mental representations. Lastly, in the utilisation phase, the individual's prior knowledge interacts with the textual information to enhance their comprehension. The three-stage processing takes place in a recursive manner, from one stage to the next and then back to the previous one. In light of the processing, O'Malley and Chamot (1990) and O'Malley *et al*. (1985) identify three main types of strategies, namely, metacognitive, cognitive and social strategies. The metacognitive strategies refer to the actions whereby learners are consciously attentive to a spoken text, and monitor and evaluate their comprehension of the text. The cognitive strategies consist of an array of sub-techniques, e.g., elaboration, inferencing, and translation. The social strategies include 'question for clarification' and 'cooperation'.

A few researchers have attempted to investigate the relationship between the listening strategy use and listening ability in L2, such as O'Malley *et al*. (1989), Vandergrift (1997; 2003), and Goh (2002). Those studies primarily focus on the

mental processes of listeners during the three distinctive processing stages (perception, parsing and utilisation). An effective listener is able to concentrate on what is being heard, to plan what to listen for, and to interact with both textual cues (bottom-up) and personal prior experience (top-down); whereas an ineffective listener employs predominately bottom-up processing, listening for single words, and using strategies at random. Similarly, the research findings by Goh (2002) reveal that a more proficient listener uses both cognitive and metacognitive strategies to achieve a meaningful interpretation of a text, and demonstrates the ability to use prior knowledge, linguistic cues, and contextual information. On the other hand, a less proficient listener is often distracted by unfamiliar lexis or expressions, and has a limited range of strategies.

In Vandergrift's (2003) investigation, which aimed to examine the relationship between listening proficiency and listening strategy use, 36 junior high school students of French in Canada were recruited for listening strategy elicitations. The study found that the more proficient listeners employed metacognitive strategies more frequently than did the less proficient listeners, and the variations in this type of strategy use had a statistically significant relation across the listening ability. Thus, the study suggests that teaching less proficient listeners to use metacognitive strategies would enhance their listening performance. This is to say, the metacognitive process engages a listener in a sequence of conscious actions: analysis of the listening task requirements, activation of appropriate listening processes, making predictions of the task, and monitoring and evaluating one's comprehension.

In addition to listening strategy use, learning style refers to information processed in a preferred way according to one's habitual style or characteristics. Some

individuals may prefer learning aurally by using cassettes or videotapes, while others may have visual preferences for learning through reading books or graphics. However, it is believed that successful learning is attributable to an individual's inherent characteristics. In the L2 language learning field, cognitive style has been extensively researched in Willing (1988), Wintergerst *et al*. (2003), Oxford and Nam (1998), Hansen and Stansfield (1981), and Ehrman *et al*. (2003). For example, Willing (1988) proposes four distinct types of learning style, including communicative (e.g., watching TV in English or using English in shops), authority-oriented (e.g., studying grammar, or through a teacher leading to learning), concrete (e.g. learning through games, or using cassettes), and analytical (i.e., studying alone). In Willing's (ibid.) project, the learning styles of 517 multi-national adult immigrants studying at an English language programme in Sydney, Australia, were empirically assessed. His research findings indicate that authority-oriented and analytical styles are highly valued by Vietnamese, Chinese, Arabic, South American, and Polish students. The mostly preferred items are 'practising sounds and pronunciation in English' and 'everything explained by their teacher', and the least preferred ways of learning are 'playing games' and 'watching films'.

In Reid's (1998) investigation, 1300 ESL students with varied cultural backgrounds (e.g., Japanese, Malay, and Korean) reported their preferred learning styles. The majority of students demonstrated strong preferences for kinaesthetic (e.g., actively participating in activities, and role-play) and tactile (i.e., writing notes) learning, and showed the least preference for group learning. Reid concludes that the inherent differences in cultural or language backgrounds and disciplines (e.g., engineering, computer sciences) often play a crucial role in determining types of

cognitive style. He also points out in his study that the longer ESL learners stay in the United States, the more their learning style preferences resemble the preferences of native speakers.

Despite the limited number of investigations in L2/FL, research on listening strategy use and learning styles demonstrates a strong belief that the techniques a learner consciously employs to tackle an aural task are intricately related to the learner's characteristics. As Braxton (1999 cited Macaro *et al*. 2007) states, learners have visual and auditory preferences that might influence their listening strategy use.

3. The Study

3.1 Subjects

In the current investigation, 101 university students participated: 43 males (42.6%) and 58 females (57.4%), aged between 18 and 35 (mean = 22.37). All were non-English majors at three universities in Taipei from the Departments of Computer Sciences, Spanish, Marketing, International Business, Multimedia Design, and Mechanic Engineering. The homogenous group had studied English as a school core subject for at least six years, and only 13.9 per cent of students had stayed or studied in English speaking countries for less than a year.

To identify their proficiency levels, the participants were assessed with a listening test (discussed in the subsequent section) and they were grouped into three levels: the advanced level, known as Group 1, (N=8, 7.9%); the upper-intermediate level, known as Group 2 (N=18, 17.8%); and the lower-intermediate/elementary level, known as Group 3 (N=75, 74.3%).

3.2 Instruments

The listening test, derived from the Cambridge IELTS 3 (UCLES 2002, p.8-13), consisted of 40 questions, e.g. fill-in-the-gap and multiple-choice questions, and completion time was about 30 minutes. The marking criterion suggested by the publisher was that each question correctly answered scored 1 mark, and there were a total of 40 marks. The results of the mock test provided the predicted scores in an authentic IELTS test. Three ranges of score corresponding to the proficiency levels in the current study were recommended: the advanced level of scores between 28 and 40, the upper-intermediate level of scores between 18 and 27, and the lower-intermediate/elementary level of scores between 0 and 17.

Two structured questionnaires attempted to determine learners' listening comprehension strategies and their learning styles; both instruments were translated into the learners' first language, Chinese Mandarin. The strategy survey contained 34 statements (mainly drawn from Vandergrift 1997), each rated with a Likert scale, from 1 to 5, from 'almost never applicable to me' to 'almost always applicable to me'. The statements were subdivided into three sections: Questions 1 to 9 for the metacognitive category, Questions 10 to 29 for cognitive strategies, and the remaining items for social/affective strategies. In the metacognitive processing category, statements demonstrated how a listener develops a series of conscious steps to perform a listening task, such as advanced organisation, selective attention, double-checking monitoring, and one's performance evaluation. In the cognitive processing category, the strategies demonstrated how a listener manipulates information to aid comprehension, including inferencing meaning from linguistic cues, elaborating on what is heard, or using a dictionary for unknown vocabulary. In the social/affective processing category, the

listener was engaged in interacting with his/her interlocutor(s) during a conversation and demonstrated how s/he managed his/her emotions.

The aforementioned learning style questionnaire drawn from Willing (1993) and Nunan (1996) comprised 24 items with four types of learning styles: Type 1 communicative style, e.g., 'learning by using cassettes and videotapes'; Type 2 authority-oriented style, e.g., 'learning by reading or grammatical structures'; Type 3 concrete style, such as 'learning by playing games or watching films'; and Type 4 analytic style, e.g., 'studying alone' or 'working on the problems given by the teacher'. Each type contained six statements, and a rating scale from 0 to 3 that represents responses from 'no' to 'always'.

3.3 Procedures of Data Collection

The researcher first visited six English teachers at the chosen universities, discussed the research with them, and obtained their permission to conduct the research survey immediately after their normal class time, without interrupting their scheduled classes. The researcher also ascertained the appropriateness of the timing, and the availability of a soundproof laboratory for the listening test. Approximately 16 voluntary students from each class undertook the research tasks; this resulted in the involvement of a total of 101 students from the six classes at six different times of data collection, with the time taken of about one hour for each class. Prior to gathering the data, the researcher explained briefly to each class the purpose of the study and the survey procedures, and then obtained each individual's consent. In the consent letter, participants were informed that the survey was anonymous, that the results of testing would not affect their school grades, and the data would be kept confidentially with

access being restricted to the researcher. Data were collected in the researcher's presence and the return rate of responses was 100 per cent.

3.4 Validity and Reliability

The researcher first consulted a specialist in Applied Linguistics regarding the items constructed in the questionnaires in English, so that these items would be concise statements. She then translated these statements into the subject's first language, and discussed the Chinese versions with her research fellows in the translation department who were from the same country as she was. In order to avoid any semantic ambiguity in Chinese, the wording of some items was modified, such as Item 4 'I try to get in the frame of mind to understand English' in the listening strategy survey. To validate the instruments further, they were piloted on twenty subjects from the target population for a validity check. As a result, the reliability of the constructs was measured at an aggregate level; the Cronbach alpha test was used on SPSS 15 for Windows (Pallant 2005; Aron *et al*. 2005), and the test result had a good internal consistency with the alpha coefficients of .92 for the listening strategy survey and .90 for the learning style survey.

4. Results and Discussion

One-way analysis of variance (ANOVA) was generated to compare the mean scores between groups to demonstrate the impact of strategy use on the proficiency levels. Results showed a statistically significant difference in strategy use across the groups at the $p < .05$ level, with metacognitive scores [F (2, 96)=6.417, p= .002], cognitive scores [F (2, 95)=4.149, p= .019], and social/affective scores [F (2, 98)=5.627, p= .005]. Although the three main strategies reached a significance level,

the degree of influence in the groups can be compared using the effect size or Eta squared values. Thus, metacognitive strategies had the highest Eta squared value, .12, which means that the actual difference in mean scores between the groups was substantive. This was followed by the social/affective and cognitive strategies, which had moderate effects of Eta squared values of .10 and .08 respectively. Note that effect size ranged from 0 to 1, with .01= small effect; .06= moderate effect, and .14=large effect (Pallant 2005).

Moreover, the Post-hoc Multiple Comparisons produced in Table 1 determined the differences among the groups. In the column of Mean Difference, there are some asterisks (*) next to the values indicating that two groups differed significantly at the $p< .05$ level. In the metacognitive strategies, Groups 1 and 3 differed significantly from one another, but Group 2 did not differ significantly from Groups 1 and 3. In the cognitive and social/affective strategies, Group 1 was significantly different from Groups 2 and 3, but Groups 2 and 3 had no significant difference.

Table 1 – Multiple Comparison for the Differences among Groups

Dependent Variable	(I) 3 Proficiency levels	(J) 3 Proficiency levels	Mean Difference (I-J)	Sig.
Metacognitive	Group 1	Group 2	3.63889	.237
		Group 3	6.33904(*)	.005
	Group 2	Group 1	-3.63889	.237
		Group 3	2.70015	.129
	Group 3	Group 1	-6.33904(*)	.005
		Group 2	-2.70015	.129
Cognitive	Group 1	Group 2	13.62698(*)	.019
		Group 3	12.02348(*)	.020
	Group 2	Group 1	-13.62698(*)	.019
		Group 3	-1.60350	.848
	Group 3	Group 1	-12.02348(*)	.020
		Group 2	1.60350	.848
Social/Affective	Group 1	Group 2	5.11111(*)	.007
		Group 3	4.70667(*)	.005
	Group 2	Group 1	-5.11111(*)	.007
		Group 3	-.40444	.918
	Group 3	Group 1	-4.70667(*)	.005
		Group 2	.40444	.918

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

The statistical findings above indicate that the advanced listeners in Group 1 had substantially used all the strategies to enhance their listening comprehension, resulting in significant variations between the three groups. In the following paragraphs, we will look at the relationship between metacognitive, cognitive, and social/affective strategies, and proficiency levels.

4.1 Metacognitive Strategies

The metacognitive type of strategy is described by O'Malley and Chamot (1990) as belonging to the higher order of executive skills, that is, a learner of L2/FL takes control of their cognition in order to achieve a desirable goal. In this case, in order to accomplish effective listening comprehension, an individual plans and alternates both top-down and bottom-up processing according to the difficulty of the listening tasks. It subsumes planning, monitoring, and evaluation. Results from the ANOVA tests show that only the planning strategies [F (2, 98)= 8.039] had a

significance level at .001 (p< .05) with the large effect on the groups (Eta squared = .14), whereas the other two sets, that is, monitoring and evaluation, showed a significant difference among groups, with small effect Eta squared values of .30 and .06 respectively.

The planning strategies were further examined by the post-hoc test across three levels of learners and the results indicated there were significant differences between Groups 1 and 3, and between Groups 2 and 3, with each alpha level being less than .05 (Sig. p< .05), but there was no difference between Groups 1 and 2.

From the above output of ANOVA, it can be assumed that the more effective listeners employ more planning strategies than do ineffective ones, indicating that the variations in the strategy deployment contribute to successful listening comprehension. The more proficient listeners were more attentive than were the less proficient listeners, determined what to listen for before performing a listening task, and maintained their concentration on it. Hence, this finding suggests that the planning strategies of managing attention, directed and selective attention, and advanced organization were highly correlated with listening ability.

4.2 Cognitive Strategies

The ANOVA statistical analysis was performed to discover whether the way the three groups used the cognitive strategies was directly related to listening materials. Results indicated the elaborating strategy [F(2, 98)=7.276] was significantly related to listeners' proficiency at the .001 level (Sig. p< .05) with the Eta squared value of .13. Yet, the insignificant strategies of translation [F(2, 98)=2.914, p=.059] and inferencing [F(2, 96)=2.780, p=.067] had considerable associations with listeners'

ability, with nearly moderate effect sizes (Eta squared .06 and .05).

To compare further the differences within groups, the post-hoc test was performed to detect the differences between the strategies (elaboration and translation) and the three groups. For elaboration, Group 1 differed significantly from Groups 2 and 3 at the .006 and .001 level respectively (Sig. p< .05), whilst Groups 2 and 3 differed insignificantly. For translation, though the association had appeared insignificant in the previous ANOVA output, the variation in the post-hoc test appeared significant between Groups 2 and 3 at the .047 level (Sig. p< .05), but the difference was unlikely to occur between Groups 1 and 2, and between Groups 1 and 3.

The preceding parametric measures suggest that the higher the level of strategies of elaboration listeners deploy, the better the comprehension that the listeners will achieve. In other words, more effective listeners have better knowledge of the high level in the hierarchy of strategy use to assist their comprehension, and they are not dependent on so-called ‘lower order skills’ to comprehend a spoken text, such as translating from their first language into the target language. After all, the more proficient listeners, who were not distracted by unfamiliar linguistic items, were able to deploy the top-down processing (e.g., elaboration), whereas the less-than-proficient listeners stumbled over unknown lexis or grammar and thus had difficulty employing the higher order strategy. However, use of the translation strategy did not differ significantly between the most efficient listeners of Groups 1 and 3; rather, the variation occurred between the less efficient listeners of Groups 2 and 3. At this point, further investigation is needed to examine the extent to which advanced and lower levels of listeners use the translation strategy.

4.3 Social/Affective Strategies vs. Proficiency Levels

This type of strategy involves interaction with another person in a conversation or taking control of one's emotions. The output of ANOVA indicates variations among groups at a significance level $p < .05$: for social strategies [F (2, 98)=4.379, p=.015] with the effect size value .082, and for affective strategies [F (2, 98)=4.731, p=.011] with effect size value .088. Also, the post-hoc test showed that Groups 1 and 3 differed significantly in the social strategy, $p < .05$, but Group 2 did not appear to differ from both Groups 1 and 3. In the affective strategy, Group 1 varied significantly from Groups 2 and 3 (Sig. $p = .009$ and .022); there was no significant variation between Groups 2 and 3.

The results imply that more effective listeners seem to be more in control of their own emotions and tend to be better at using strategies to clarify meaning while conversing with a native speaker of the language. On the contrary, less effective listeners tend to have a considerable level of anxiety when faced with the difficulty of unfamiliar lexis, or they lack social strategies for asking about unclear meanings from their conversational partners.

4.4 Proficiency Levels, Learning Styles and Listening Strategy Use

We first look at the relationships between the proficiency levels and the learning styles, and then between the learning styles and the listening strategies. The descriptive statistics of these four styles are presented in Table 2. Responses to the statements of Type 2 had the highest mean score, 11.52 (SD 3.134), and responses to Type 1 had the lowest mean score, 8.87 (SD 3.555). In the preliminary analysis, the results show that the majority of Taiwanese university students in this sample

considered themselves authority-oriented learners rather than communicators.

Table 2. – Descriptive Statistics of Learning Style

	N	Mean	Std Dev.
Type 1 – Communicative	100	8.87	3.555
Type 2 – Authority-oriented	100	11.52	3.134
Type 3 – Concrete	99	9.91	3.197
Type 4 – Analytic	100	9.25	3.630
Valid N (listwise)	98		

To inspect further the learning styles across groups, a One-Way ANOVA analysis was performed. The significant values were in these three types: Type 1 [$F(2, 97)=11.93$, $p=.000$, Eta=.20], Type 3 [$F(2, 96)=4.80$, $p=.010$, Eta=.09], and Type 4 [$F(2, 97)=5.83$, $p=.004$, Eta=.107]. In Type 1 (communicative style), the difference in mean scores between the groups resulted in a large effect Eta squared score .197, followed by Type 4 (analytic style), which had a medium Eta value of .107. Type 3 (concrete style) had a medium effect size of .091, and Type 2 had a small effect size of .041. To observe the differences in the groups, the post-hoc test results show that Group 3 differed significantly from Groups 1 and 2 in Types 1 and 3, and Group 3 differed significantly only from Group 1 in Type 4.

Given the above results, several conclusions can be drawn. Different proficiency levels of learners possessed different characteristics while learning L2 or FL; the more proficient listeners were likely to be more flexible than the less proficient listeners in their learning styles. In some situations, the more able listeners were communicators, seeking opportunities to interact with native speakers of the language; in other situations, they tended to be analytic, paying attention to formal aspects of the language. On the other hand, the less proficient listeners restricted themselves to a particular style, Type 2 authority-oriented. However, despite the

differences in their listening ability, the three groups of learners mostly preferred Type 2.

Furthermore, in an attempt to explore the linear relationship to demonstrate whether listeners' strategy use was significantly associated with their learning style, a scatterplot was generated as shown in Figure 1. Total listening strategy scores were placed on the vertical axis (Y) and total learning style scores on the horizontal axis (X). High scores on a variable corresponding to high scores on the other variable indicates that the pattern of the overall scores or dots falling close to a straight line shows a positive linear correlation between strategy use and learning style.

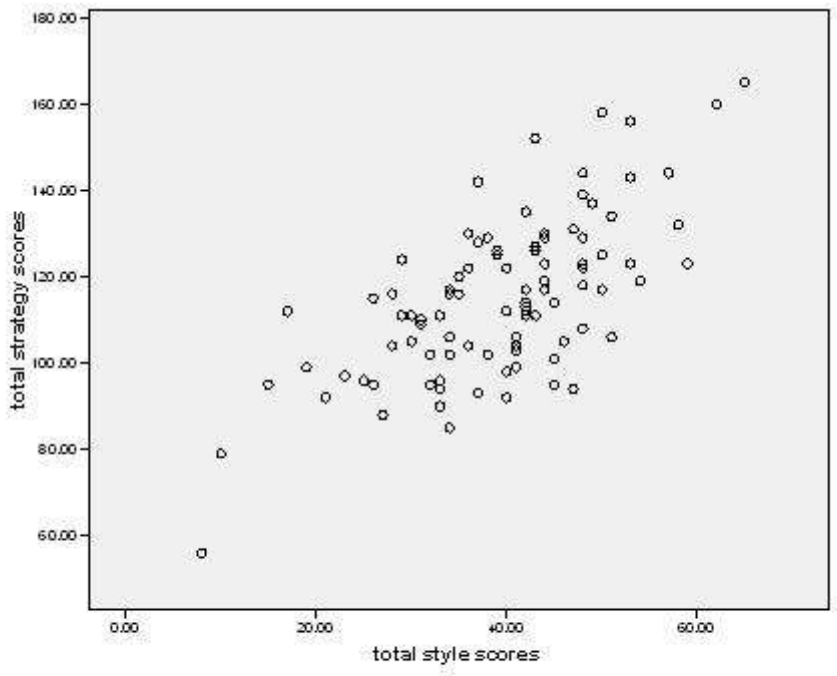

Figure 1 – Scatter Diagram for the Correlation between Listening Strategy Use and Learning Style

Using the Pearson Product-Moment Correlation to measure the strength of the relationship between the two variables of strategy and style, Table 3 shows values of

Pearson correlation coefficients (*r*) between -1 and +1. The correlational matrix showed a strong and positive association between the variables, resulting in the four highest *r* values. Type 1 was significantly correlated with all sets of strategy with the three *r* values of .569 (MET), .504 (COG), and .500 (SOC/AFF); and Type 3 was significantly associated with SOC/AFF with *r*= .507. Although the lowest value between Type 4 and SOC/AFF was .346, it was still a medium effect association between the two variables. The correlations could be interpreted by the Coefficient of Determination (r^2), meaning that the amount of variance in strategy use can be explained by the learning style. Thus, Type 1 and MET, COG, and SOC/AFF had variances of 32%, 25%, and 25% respectively.

Table 3 – Pearson Product-Moment Correlations between Strategy Use and Learning Styles

	MET(*r*)	COG(*r*)	SOC/AFF(*r*)
Type 1 – Communicative	.569(**)	.504(**)	.500(**)
Type 2 – Authority-oriented	.448(**)	.499(**)	.398(**)
Type 3 – Concrete	.389(**)	.484(**)	.507(**)
Type 4 – Analytic	.409(**)	.455(**)	.346(**)

** Correlation is significant at the 0.01 level (2-tailed).

Note: MET = Metacognitive strategies, COG = Cognitive strategies, SOC/AFF = Social/Affective strategies.

The above output results imply that Type 1 communicators were actively and flexibly deploying all strategies when performing listening tasks; Type 2 learners preferred cognitive strategies to metacognitive and social/affective strategies; Type 3 individuals liked the social/affective strategic processing most, but on average they used metacognitive and cognitive strategies; and finally, Type 4 learners preferred cognitive techniques to social/affective strategies. In a classic view, the authority-oriented and analytic styles refer to 'field independence' (Willing 1988), whereby an individual is inclined to the logic tasks and displays serious and unemotional

characteristics, but lacks interpersonal skills. By contrast, the communicative and concrete styles refer to 'field dependence', with individuals seen as people-oriented and emotional, and preferring concrete situations. Intriguingly, in this current study, the overt behaviour of strategy use corresponded to the covert behaviour of a cognitive style with similar characteristics. For instance, the Type 2 authority-oriented students preferred cognitive strategies to social/affective strategies, whereas the Type 3 concrete-style students preferred social/affective strategies to metacognitive strategies. Similarly, the Type 4 analytical students were inclined to cognitive strategies but were not inclined to use social/affective strategies.

In the observation of strategy use and learning style across levels of listening proficiency, there was a significant inter-correlation between these variables. Advanced learners (Group 1) might deploy all strategies more interactively and consistently than upper-intermediate and lower-intermediate/elementary learners (Groups 2 and 3). This could be supported by O'Malley *et al*. (1989) and Vandergrift (1997), who claimed that effective listeners use both top-down and bottom-up strategies more than ineffective listeners do. What is more, compared with the less effective listeners, the advanced listeners possessed more versatile characteristics of learning style when they approached the nature of learning materials, being communicative and analytic/detail-oriented.

5. Conclusion

In this present investigation, attempts have been made to discover the interrelationship between listening comprehension strategy use and listening proficiency levels, and learners' cognitive styles by using a quantitative paradigm. The

findings indicate that both listening strategy deployment and learning styles could be a predictor for listening ability since there were statistically significant relationships among these variables. In order to facilitate effective comprehension of a spoken text, more proficient listeners of L2 use more flexible strategic processes combining linguistic knowledge and prior experience, and are in control of their emotions. In addition, the more effective listeners demonstrate the flexibility of learning style.

The results of this investigation also suggest strategies-based instruction within L2/FL classrooms useful to increase learners' awareness of their learning styles and of making decisions for their own strategy use during task performance. Such training implies that a learner could take control of his/her own learning by planning a goal, monitoring the process, and evaluating the learning outcome, that is, nurturing an individual's metacognition is the key to successful learning. Wenden (2003), Goh (2003), and Vandergrift (1997) emphasise that learners' metacognitive processing is closely related to effective learning and is applicable to all learning contexts. In the current research context, the process operationalised metacognitively in listening comprehension is to plan what to listen for, to stay focused on the text, to predict what comes next, to monitor carefully, and to evaluate one's comprehension.

For future studies, the findings suggest that qualitative methods (e.g., think-aloud protocols) are useful to probe deeply into how listeners process the acoustic input of L2, which would provide better understanding of the strategic processing.

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