Learners' Listening Strategy Use when Listening to Authentic and Inauthentic Materials: Based on Listening Strategy Questionnaire

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Abstract

The purpose of this study is to explore how learners adjust their listening strategies when listening to inauthentic and authentic materials. Japanese university students listened to inauthentic and authentic materials and answered questionnaires regarding their listening strategy use. Exploratory factor analyses were conducted on two sets of data: data after listening to authentic materials and those after listening to inauthentic materials. Four factors were extracted from the data of each type of material. Three common factors, which were labeled as, Top-down Strategy, Phonology-based Strategy, and Bottom-up Strategy, were found in both materials. However, the items in each factor were slightly different between the inauthentic and the authentic materials.

In one of the four factors, categorized as Metacognitive Strategy, different variables were observed depending on the material types. In the inauthentic listening, the items were related to the metacognitive strategies during or after listening, while in the authentic listening the items in the Metacognitive Strategy were about strategies used mainly before listening. Some adjustment of learners' listening strategies was observed between the inauthentic and the authentic materials based on the instruction before listening, and learners adjusted their strategies when they found out the difficulty levels of the listening passages.

1. Introduction

1.1 Listening Strategies

Among various topics in listening studies of English as a second language (ESL) and English as a Foreign Language (EFL), many researchers have been trying to investigate what listeners actually do during the comprehension process, and what teachers can do to aid their comprehension. Actions that second language (L2) learners take to make their learning of the L2 more effective are called learning strategies (Oxford, 1990). It has been revealed that listening strategies are crucial in listening

comprehension, and in order to succeed in communication conducted in a foreign language, learners must be motivated and use these strategies effectively (Goh, 1998; O'Malley, Chamot, & Kupper, 1989).

Vandergrift (1997) developed categorization of *metacognitive* and *cognitive* listening comprehension strategies. *Cognitive strategies* involve active manipulation of the text, and include processing, organization and elaboration of new information. Language learners use cognitive strategies to store and retrieve new information (O'Malley et al., 1989; Rubin, 1994). *Metacognitive strategies*, on the other hand, do not process input directly, but involve controlling learning through planning, monitoring and evaluating the language activity (Goh, 1998; O'Malley et al., 1989). Bacon (1992) categorized metacognitive strategies into *prior to listening*, *while listening*, and *post-listening*. Cognitive strategies were categorized into *top-down* and *bottom-up* strategies. *Top-down strategies* refer to the use of learners' background knowledge of schemata, discourse, and other real-world knowledge. With these, listeners meet a task with certain expectations, they test hypotheses and infer from the context. *Bottom-up strategies*, on the other hand, are text-based and listeners attempt to build meaning inductively from the evidence that is presented in the text (Bacon, 1992). Matsumura (2002) had the unique idea of including *phonology-based listening strategies* in her questionnaire study.

The topics of the studies conducted to examine learners' listening strategy use include the effects of learners' proficiency levels on their listening strategy use and the characteristics of the listening strategy use of a certain language group (Cubillos, Chieffo, & Fan, 2008; Goh, 1998; O'Malley et al., 1989, Vandergrift, 2003). However, little investigation has been conducted into the effect of material types on the learners' strategy use. Thus, it is crucial to investigate if and how learners adjust their listening strategies depending on the material types. The material type which is the focus of this study is *authenticity* of the text.

1.2 Authentic Language

Though English ESL/EFL teachers tend to use teaching materials which have been developed especially for language teaching, it is vital to introduce authentic materials in language classrooms. Especially in an EFL environment where there are limited chances for students to communicate in English outside of the classrooms, students need to familiarize themselves with the authentic language to enhance communication in real-life settings.

There is much discussion on the definition of *authentic language* in ESL/EFL studies. Some argue that the task or the social situation in the classroom should be authentic, while others state that truly authentic recordings consist of personal conversations (Field, 2008; Kobayashi, 2008; Widdowson, 1998). Gilmore (2007) recognizes that the concept is too broad and he defines authenticity as "the language

produced by a real speaker/writer for a real audience, conveying a real message” (p.98). By combining this notion with the definition created by Porter and Roberts (1981) and other researchers, namely that authentic language is real language not intended for non-native learners, it is possible to distinguish authentic text from others by referring to the source of the discourse and the context of its production. This also makes it possible to identify the surface features of authentic discourse and evaluate to what extent inauthentic materials or learner output resemble authentic material.

Teaching materials are generally regarded as less difficult to comprehend than authentic materials (Gilmore, 2007). As Porter and Roberts (1981) state, in inauthentic materials, the pace of speech is slow, limited vocabulary is used, and speakers tend to enunciate words with excessive precision and minimal assimilation. A few studies have been conducted on the effects of lessons using authentic materials on students’ listening ability. Most of them concluded that the authenticity of the material did not have an effect on the students’ listening ability, and the participants with authentic input did not show any more improvement than those with inauthentic input (Hislop, 2001; Lambert, Hailes & Engler, 2003). However, Gilmore (2011) has recently concluded that the group with authentic input outperformed those with inauthentic input in a communicative competence test including a listening test.

1.3 Purpose of This Study, and Research Questions

Though several investigations have been conducted on learners’ listening strategies, no studies to date have compared the learners’ strategy use in authentic and inauthentic listening. As listening to authentic materials is more challenging for students than listening to inauthentic materials, it is important for learners to use strategies effectively to succeed in authentic listening. The purpose of this study is to examine how learners adopt strategies in inauthentic listening and authentic listening, and to thoroughly compare their strategy use by using a listening strategy questionnaire. Thus, the following research questions (RQs) were addressed in the present study.

RQ1: Do exploratory factor analyses conducted on the questionnaire data after listening to authentic and inauthentic passages yield different factors?

RQ2: Do the items on listening strategies found in each factor differ between authentic and inauthentic materials?

3. Method

3.1 Participants

A total of 217 students at a national university in Japan took part in this study. They were students from four different English classes. After eliminating the data of those who did not fully complete the questionnaire, the data of 189 participants were

analyzed in this study.

3.2 Instruments

3.2.1 Proficiency test

The participants took the listening proficiency test to measure their general L2 listening proficiency. The test was created using items from the TOEIC practice listening test textbook (Kokusai Business Communication Kyokai, 2011). Because of the time constraint, the original listening section, which originally consisted of 200 items, was edited to 38 items, and these questions took around 20 minutes to answer. The listening section consists of four parts: picture description, questions or statement and responses, conversations, and talks. In each section, the items were categorized depending on their difficulty levels and ranked by the author. The items were chosen based on their difficulty levels so that in each part there were items whose difficulty levels varied.

3.2.2 Listening strategy questionnaire

Based on the listening questionnaire used in previous studies (Matsumura, 2002; McBride, 2008; Vogely, 1995), the first version of the questionnaire was created. It consisted of 27 items written in Japanese on a five-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). As a pilot study, 32 university students answered the first version of the questionnaire after authentic listening. The results of correlation analysis showed that correlation coefficients of four items which investigated the use of inference during listening comprehension were high (over .7). Other items which conveyed similar meanings were also edited. As a result, a total of six items were removed and the second version of the questionnaire with 21 items was developed (see Appendix A).

3.2.3 Listening materials

Four listening materials, two authentic and two inauthentic materials, were used in this study (see Appendix B). A speech made by a founder of an internet company (authentic 1) and a news report (authentic 2) were used as authentic materials. Two inauthentic materials (inauthentic 1 and inauthentic 2) were selected from narrative stories of ESL/EFL textbooks. Table 1 shows the speech rate and the difficulty levels of the scripts. The Flesch-Kincaid Grade Level (FKGL) measures the readability of the text and the numbers stand for the school grade level in the United States. Table 1 shows that the difficulty of the authentic materials was higher than that of the inauthentic materials. Half of the students listened to inauthentic 1 and authentic 1, and the others listened to inauthentic 2 and authentic 2 to prevent issues related with the materials themselves, such as familiarity with the topics, and the speakers' accent, affecting the results.

Table 1

Difficulty Levels of the Listening Materials

Material	Length (sec)	Rate (wpm)	Total words	FKGL
Authentic 1	110	168.9	309	9.5
Authentic 2	92	160.5	246	10.8
Inauthentic 1	117	104.1	203	2.3
Inauthentic 2	72	103.3	156	4

Note. FKGL = Flesch-Kincaid Grade Level.

3.3 Procedure

The experiment consisted of two sessions. Both sessions were approximately 20 minutes long and were conducted in a regular classroom at the students' university. Before the experiment, the instructor explained that the students would listen to two sets of listening passages and after each listening they would write down what they had understood in Japanese and answer a questionnaire. The purpose of having the students write down what they understood was to know how difficult they found the listening passages and to have them concentrate on the listening activity. The students were not informed of the purpose of the experiments in order to avoid any influence on their strategy use. The instructor gave some information about the content of the listening beforehand. While she told them that they would listen to a short story before the inauthentic listening, she informed them that they would listen to news or a speech before the authentic listening. In the first session, the students listened to the inauthentic input and wrote down what they understood in Japanese. After that, they answered the questionnaire about their strategy use. In the second session, they listened to the authentic input, recalled it in Japanese, and answered the same questionnaire used in session 1. The questionnaires used in both sessions were the same.

3.4 Scoring and Data Analyses

Three sets of data were analyzed accordingly. First, the proficiency test scores were marked by the author. Each item was given one point and the full score was 38.

Secondly, The students' recall protocols were scored on the basis of idea units (IUs), referring to Ikeno's (1996) criteria. According to Ikeno, each idea unit consists of a single clause. Each infinitival, gerundive, and participle constructions, nominalized verb phrase, and heavy adjuncts prepositional phrase is also regarded as different idea units. Argument and predication conjuncts and disjuncts are parsed into separate idea units. First, 30 % of the recall protocols were randomly selected from the data and copies were made of these recall tasks. The author and a graduate student

majoring in EFL education, discussed parsing and the scoring template. After this discussion, they scored the passages separately and their inter-rater agreement rate was 92 %. Because scoring reliability was sufficiently high, the author scored the remaining data. Finally, all recall scores were transformed into a percentage of the total number of IUs in each passage. Based on the recall scores, the dependent *t*-test was conducted to see if the students' comprehensibility changed between the inauthentic and authentic materials. The dependent variables were the recall scores of each listening.

Third, exploratory factor analyses were conducted on the questionnaire data after the inauthentic listening and the questionnaire data after the authentic listening. The data were examined using Maximum likelihood extraction with Promax rotation on SPSS 17.0 to find the underlying factors of students' listening strategy use. An eigenvalue of 1.0 was taken as the threshold, and items whose factor loading was greater than .35 were adopted as meaningful for each factor. Based on the factors extracted from the factor analyses, the mean value of each factor was calculated.

4. Results

4.1 Proficiency Test Scores

The full score of the proficiency test was 38, the mean was 23.49, and the standard deviation was 6.05. The internal consistency of the test was $\alpha = .81$, which means almost perfect reliability of the test. The histogram in *Figure 1* indicates that the participants had various proficiency levels.

Figure 1. Histogram of the proficiency test score

4.2 Recall Protocols

The scores of the recall protocols after the inauthentic and the authentic

listening were analyzed using a *t*-test. On average, the participants recalled the contents of the inauthentic listening significantly more than the authentic listening, $t(188) = 10.98$, $p < .001$, $d = .92$. This result indicates that the participants found the authentic listening more difficult to comprehend than the inauthentic listening.

Table 2

Descriptive Statistics of the Recall Protocols After Inauthentic and Authentic Listening

	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	Cohen's <i>d</i>
Inauthentic	8.03	5.70	10.98	.00	0.92
Authentic	3.79	3.13			

4.3 Factor Analyses of Each Material

In the factor analysis conducted on the questionnaire data after listening to the inauthentic material, an initial analysis was run to obtain an eigenvalue for each factor. Five factors had eigenvalues over 1.0, and in combination these explained 53.09% of the variance. From the scree plot, four to five factors were observed. Maximum likelihood extraction with Promax rotation was applied and the loadings of Items 2 (*I started thinking in English before I started a listening activity*) and 9 (*I lost my immediate train of concentration, but tried to recover my concentration right away*) were below 0.35. As factor loadings greater than 1.0 were observed, Item 2 with low communality (.178) was deleted as well as Item 9. The factor analysis was conducted again after eliminating Items 2 and 9, and the result showed that the fourth factor consisted of two items, with low factor loading below .35. Thus, four factors were set and re-analyzed. As a result, all preconditions for the analysis were met with KMO = .808.

The same analytical procedure was used for the questionnaire data after listening to the authentic material. In an initial analysis to obtain the eigenvalue for each factor, five factors had eigenvalues over 1.0 and these explained 53.69% of the variance in combination. The scree plot also indicated five factors. Maximum likelihood extraction with Promax rotation was applied and the loadings of Items 4 (*Even if I don't understand something, I don't give up trying to comprehend the passage*), 8 (*I was able to concentrate*), and 6 (*I skipped unknown words*) were found to be below 0.35. The data were re-examined by eliminating items whose factor loadings were below 0.35, and as a result, the fifth factor had only Item 15. Thus, Item 15 was also eliminated and the data were re-examined with four factors. As a result, all preconditions for the analysis were met with KMO = .804.

Table 3 and Table 4 show the factor loadings for the inauthentic listening and the authentic listening.

Table 3

Factor Loadings for Exploratory Factor Analysis: Inauthentic Material

	PB (α = .723)	TD (α = .625)	MC (α = .498)	BU (α = .443)	Communality
18. I listened to the stressed segments.	.812	-.010	.056	-.096	.713
17. While listening, I used my knowledge about phonetic changes.	.604	-.090	.001	.117	.335
12. I listened to the main idea the speaker stressed.	.594	.187	.112	-.030	.582
7. I listened to the speaker's tone of voice.	.399	.335	-.325	-.049	.291
14. I guessed at what the speakers intended to say.	-.031	.726	.029	-.073	.544
15. I tried to remember the numbers.	.015	.433	.042	.160	.216
20. I tried to understand the main point and disregarded the details.	-.207	.408	.321	-.292	.467
16. I associated the information received from the discourse with my own prior knowledge.	.092	.379	.126	.176	.249
10. I visualized the settings.	.004	.361	.202	.022	.230
21. After listening, I summarized the content.	-.025	.116	.675	-.025	.452
19. I paid attention to discourse markers.	.430	-.098	.449	.430	.463
4. Even if I didn't understand something, I didn't give up trying to comprehend the passage.	.013	.209	.444	.013	.400
5. When I didn't understand the content, I thought about it for a while.	.018	.350	-.355	.018	.331
8. I was able to concentrate.	.194	.126	.355	.194	.340
11. I repeated to myself what I had heard.	-.014	.153	.280	.596	.343
13. I tried to translate each word.	.107	-.061	.038	.522	.273
5. When I didn't understand the content, I thought about it for a while. (reverse code)	.175	-.004	.113	-.488	.331
Factor correlation matrix	PB	1.000			
	TD	.453	1.000		
	MC	.429	.419	1.000	
	BU	-.038	-.113	-.375	1.000

Note. Factor loadings > .35 are in boldface; PB: Phonology-based, TD: Top-down, MC: Metacognitive, BU: Bottom-up Strategies.

Table 4

Factor Loadings for Exploratory Factor Analysis: Authentic Material

	TD (α =.751)	PB (α =.724)	MC (α =.678)	BU (α =.528)	Communality
14. I guessed at what the speakers intended to say.	.759	-.003	-.109	-.001	.507
10. I visualized the settings.	.678	-.150	-.051	.087	.366
16. I associated the information received from the discourse with my own prior knowledge.	.650	-.067	-.054	.091	.371
21. After listening, I summarized the content.	.484	.112	-.054	.120	.308
12. I listened to the main idea the speaker stressed.	.456	.313	.027	-.028	.468
20. I tried to understand the main point and disregarded the details.	.429	-.112	.294	-.262	.377
18. I listened to the stressed segments.	.007	.784	.067	-.264	.650
17. While listening, I used my knowledge about phonetic changes.	-.094	.675	-.081	.146	.426
19. I paid attention to discourse markers.	-.045	.649	.055	.168	.494
7. I listened to the speaker's tone of voice.	-.021	.574	-.094	-.080	.273
1. Before listening, I tried to ignore all the things that might distract me.	-.255	-.126	.925	.083	.658
9. I lost my immediate train of concentration, but tried to recover right away.	.235	-.009	.428	.100	.346
2. I started thinking in English before I started a listening activity.	.008	.187	.412	.163	.317
3. Before listening, I tried to listen for the main point.	.272	.150	.392	-.078	.436
11. I repeated to myself what I had heard.	.231	.071	.030	.580	.467
13. I tried to translate each word.	-.070	.072	.050	.576	.350
5. When I didn't understand the content, I thought about it for a while.	.120	-.191	.111	.352	.143
Factor correlation matrix	TD	1.000			
	PB	.453	1.000		
	MC	.4297	.419	1.000	
	BU	-.038	-.113	-.375	1.000

Note. Factor loadings > .35 are in boldface; TD: Top-down, PB: Phonology-based, MC: Metacognitive, BU: Bottom-up Strategies.

Three common factors, which were labeled as Top-down Strategy, Phonology-based Strategy, and Bottom-up Strategy, were found in the authentic and the inauthentic listenings. One of the factors, which was broadly categorized as Metacognitive Strategy, included different items between the authentic and the inauthentic listening.

Table 5

Descriptive Statistics of Factors Found in Each Type of Material

Inauthentic			Authentic		
Factor	Mean	SD	Factor	Mean	SD
1. Phonology-based Strategy	2.54	.853	1. Top-down Strategy	3.18	.784
2. Top-down Strategy	3.44	.744	2. Phonology-based Strategy	2.49	.842
3. Metacognitive Strategy	2.93	.719	3. Metacognitive Strategy	2.87	.807
4. Bottom-up Strategy	2.85	.653	4. Bottom-up Strategy	2.30	.793

Table 6

Summary of Factors and Variables Found in Each Type of Material

Strategy	Inauthentic	Authentic
Phonology-based	7. Speaker's tone of voice	7. Speaker's tone of voice
	12. Main idea the speaker stressed	17. Use of phonetic knowledge
	17. Use of phonetic knowledge	18. Stressed segments
	18. Stressed segments	19. Discourse markers
Top-down	10. Visualized the settings	10. Visualized the settings
	14. Guessed the speakers' intention	12. Main idea the speaker stressed
	15. Remembered the numbers	14. Guessed the speakers' intention
	16. Association with prior knowledge	16. Association with prior knowledge
	20. Understood the main point	20. Understood the main point
Metacognitive		21. After listening, summarized
	4. Didn't give up comprehending	1. Ignored what distracted me
	5. Concentrated on the part I don't understand	2. Thought in English before listening
	8. Able to concentrate	3. Tried to listen for the main point
	19. Discourse markers	9. Recovered my concentration
Bottom-up	21. After listening, summarized	
	6. Skipped unknown words (reverse code)	5. Concentrated on the part I don't understand
	11. Repeated what I have heard	11. Repeated what I have heard
	13. Translated each word	13. Translated each word

The descriptive statistics of the factors in Table 5 shows that the Top-down Strategy was the most used strategy, irrespective of the material types. Though the Metacognitive Strategy was the second most used in both materials, the items used in the Metacognitive Strategy in each material differed, as mentioned before. Bottom-up and Phonology-based strategies were less used in both materials. Table 6 summarizes the results of the factor analyses of both materials.

5. Discussion

5.1 Comparison of Factors Extracted from Each Material

On average, it was observed that strategy use was less frequent in the authentic material than the inauthentic material (see Table 5). The recall protocols suggest that the authentic materials were more difficult for the students to comprehend than the inauthentic materials. Thus, it seems that learners were unable to make effective use of listening strategies during the authentic listening.

In answer to RQ1 (*Do exploratory factor analyses conducted on the questionnaire data after listening to authentic and inauthentic passages yield different factors?*), the factor analyses extracted three common factors, which include Top-down Strategy, Phonology-based Strategy, and Bottom-up Strategy, and one different factor, which was roughly labeled as Metacognitive Strategy.

The Phonology-based Strategy was defined by three common items in the inauthentic and the authentic listening: Questionnaire items 7 (*Speaker's tone of voice*), 17 (*Use of phonetic knowledge*), and 18 (*Stressed segments*) concerned attention to phonological characteristics rather than meaning of the passage.

In the Top-down Strategy, Items 10 (*Visualized the setting*), 14 (*Guessed the speakers' intention*), 16 (*Association with prior knowledge*), and 20 (*Understood the main point*) were common items. Items 10, 14, and 16 show that the students used inference and background knowledge for comprehension. Item 20 suggests that they paid attention to the overall meaning of the passage.

Items 11 (*Repeated what I have heard*) and 13 (*Translated each word*) were about learners' attention to the word level, and were defined as Bottom-up Strategy.

Regarding the Metacognitive Strategy, the items were related to the Metacognitive Strategies during or after listening in the inauthentic listening. In the authentic listening, on the other hand, the items in the Metacognitive Strategy concerned strategies used before or during listening.

5.2 Examination of Variables in Each Factor

In order to answer RQ2 (*Do the items on listening strategies found in each factor differ between authentic and inauthentic material?*), the items found in each factor were thoroughly analyzed. An examination of each item indicates that even though three common factors were found between the inauthentic and the authentic materials, the items in each factor were slightly different. Item 19 (*Discourse markers*) was connected to the Phonology-based Strategy, with a factor loading of .698 in the authentic listening. This indicates that discourse markers were more prominent in news

or a speech and the students paid more attention to discourse markers in listening to the authentic materials by connecting them to other Phonology-based Strategies. In the inauthentic listening, on the other hand, Item 12 (*Main idea the speaker stressed*) was loaded toward the Phonology-based Strategy. It could be explained that in the inauthentic listening, the main idea was phonologically stressed by enunciating words with excessive precision or stress, so that it would help listeners to pay attention to the main idea.

Regarding the Top-down Strategy, in the inauthentic listening, Item 15 (*Remembered the numbers*) was part of the Top-down Strategy, and had the second highest loadings in the factor. In the inauthentic material 1, which was about three donkeys, three donkeys with different characteristics were described as the first donkey, the second donkey, and the third donkey, respectively. As the recognition of the numbering of the donkey helped the listeners grasp the meaning of the whole story, it is believed that they used numbers as part of the Top-down Strategy. In the authentic listening, though some numbers such as years or the numbers of products were included, memorizing the numbers was not closely related to the overall comprehension of the meaning.

In the authentic listening, Items 12 (*Main idea the speaker stressed*) and 21 (*After listening, summarized*), were part of the Top-down Strategy. As the stressed parts were regarded as important for helping listeners comprehend the overall meaning of the passage, Item 12 was categorized as part of the Top-down Strategy in the authentic listening. As the authentic listening was more difficult for the participants to comprehend, they tried to get the whole picture of the content by paying attention to the main idea. Item 21 (*After listening, summarized*) was also connected to the Top-down Strategy, as summarizing was done by recognizing the overall meaning of the passage.

Regarding the Bottom-up Strategy, Item 6 (*Skipped unknown words*) was a reverse code, and the data was edited for analyses in the inauthentic material. In the authentic listening, Item 5 (*Concentrated on the part I don't understand*) was part of the bottom-up strategy. The differences in the characteristics of Items 5 and 6 were that Item 5 indicated that participants paid attention to the unknown words at the word level in the inauthentic listening, while Item 6 indicated that they paid attention to the part they did not understand in phrase or sentences larger than the word level in the authentic listening. This indicates that they might have comprehended the inauthentic listening from the word level while they comprehended the authentic material at the phrase level.

In the Metacognitive Strategy, different items were observed in the authentic and the inauthentic materials. In the inauthentic listening, Items 4 (*Didn't give up comprehending*), 5 (*Concentrated on the part I don't understand*), 8 (*Able to concentrate*), and 21 (*After listening, summarized*) referred to the Metacognitive Strategy during and after the listening activity. Though Item 19 (*Discourse markers*) was part of the Phonology-based Strategy in the authentic listening, it formed the Metacognitive Strategy in the inauthentic listening, which implies that discourse markers were used more in the Metacognitive Strategy than in the Phonology-based

Strategy.

In the authentic listening, on the other hand, Items 1 (*Ignored what distracted me*), 2 (*Thought in English before listening*), and 3 (*Tried to listen for the main point*) concerned the Metacognitive Strategy prior to the listening. Item 9 (*Recovered my concentration*) concerned the metacognitive strategy during listening. This difference in the use of the Metacognitive Strategy has some implications: First, it can be explained that the students adjusted their strategies as they listened to the passage. In the authentic listening, they adjusted their listening strategies once they discovered that the passage was more difficult than the inauthentic passage. Strategy adjustment was observed in the inauthentic listening as well. Secondly, it is likely that the instruction before the authentic listening made the participants change their strategy before listening. The instructions given before both the inauthentic and authentic materials differed slightly from each other. Before the inauthentic listening, the instructor explained that the participants would listen to some stories. Before the authentic listening, on the other hand, they were informed that they would listen to news or a speech. This information about news or a speech might have made them realize that the listening would be challenging for them, and they probably decided to concentrate even before the listening started. Third, it is possible that the students had learned some metacognitive strategies before listening by answering the questionnaire after the inauthentic listening, and they applied them in the authentic listening. Some comments from the students indicate that they tried to apply the items indicated in the questionnaire to the authentic listening.

6. Conclusion and Implications

6.1 Conclusion

This study investigated how learners adjust their listening strategies in listening to inauthentic and authentic materials. The proficiency test revealed that the learners had various proficiency levels. The recall protocols showed that the authentic listening was more difficult to comprehend than the inauthentic listening.

Exploratory factor analyses conducted on the questionnaire data after the authentic and inauthentic listenings yielded three common factors and one different factor. In both materials, the Top-down Strategy, Phonology-based Strategy, and Bottom Strategy were found to be the strategies learners used in listening. In the three common factors, extracted items were slightly different. In the authentic listening, discourse markers were defined in the Phonology-based Strategy, and to recognize main ideas and summarization after listening were part of the Top-down Strategy. The items in the Bottom-up Strategy implied that listeners tried to comprehend the authentic listening at the phrase level. In the inauthentic listening, on the other hand, memorizing numbers was used as the Top-down Strategy. From the items in the Bottom-up Strategy, it is likely that they comprehended the inauthentic listening from the word level. These differences found in the items in each factor indicate that the learners' adjusted their strategy use at the local level in the framework of each strategy.

A major difference was found in the Metacognitive Strategy. In the inauthentic

listening, the Metacognitive Strategy concerned strategies used during and after listening, while in the authentic listening the items mainly concerned before or during the comprehension. This difference suggests three implications: First, it suggests that the learners adjusted their strategies once they found out the difficulty of the materials. Second, the instructions given before the listening activity may have had an effect on the learners' strategy change. Third, the students may have learned strategies by answering the questionnaire after the inauthentic listening.

6.2 Limitations

Three limitations of this study should be mentioned. First, data on learners' strategies were obtained only from the questionnaires. By using other methods such as interviews or think-aloud protocols, listening strategies other than those mentioned in the questionnaire items might have been obtained. Other measures would make it possible to examine the differences in the items in each factor in more detail.

Second, the effect of answering the same questionnaire twice should be considered. Some of the students indicated that their strategy use was affected by answering the questionnaire. As the questionnaire data of the authentic listening was obtained after they had already answered the questionnaire on the inauthentic listening, the order of listening might have had an effect on their strategy use.

Third, there was a great difference in difficulty levels between the authentic and the inauthentic materials used in the current study. The difference in authenticity could be examined from another perspective by comparing materials whose difficulty levels are at the same level, but differentiated with their authenticity of the text, i.e. whether the materials were developed targeting language learners or not.

6.3 Pedagogical Implications

Based on the results of the current study, some pedagogical implications should be noted. First, instructors should be cautious about the instructions they give to students before conducting a listening activity. As the students in the experiment changed their strategies after they were informed of the topic of the listening activity, it was revealed that the instructions given before listening have a great impact on the students' strategy use.

Second, students should be trained to make use of listening strategies more frequently in authentic listening, which is regarded as more challenging for them. It was found in the experiment that the students used listening strategies less frequently in the authentic listening than in the inauthentic listening. As it has been argued that strategy instruction has a positive impact on learners' strategy use as well as on overall listening comprehension (Cross, 2009; Thompson & Rubin, 1996), strategy instruction is needed, especially when learners listen to authentic materials.

Lastly, the questionnaire used for the current research serves as a practical way to understand students' strategy use. Because of the time constraint, it might be difficult for teachers to have interviews with each student or have the students write journals about their strategy use. Thus, conducting a questionnaire makes it possible for instructors to become aware of their strategy use. Based on the data of the

questionnaire, instructors are able to plan strategy lessons.

For further study, measures other than questionnaires are needed to investigate further into learners' listening strategy variation with the authentic and the inauthentic materials. This research investigated the learners' strategy use; thus further research on the effects of strategy instruction is needed.

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Appendices

Appendix A Listening Strategy Questionnaire

(Questionnaire in n Japanese)

以下の質問に、1－5 までの指標で答えてください。

(1:全くあてはまらない、2:少し当てはまらない、3:どちらでもない、4:少し当てはまる、
5:よく当てはまる)

リスニング前

1. 集中するために、集中力の妨げとなるものを無視するよう心がけた。
2. リスニングを行う前に英語で考え始めた。
3. 話の重要なポイントを探しながら聞くようにした。

リスニング中

4. 分からない箇所があっても、その先を聞くのをあきらめなかった。
5. 分からない箇所があった場合、そのことについてしばらく考えた。
6. 意味の分からない単語は、一つ一つ考えず飛ばして聞いた。
7. 内容ではなく話し手の話し方に注意を向けた。
8. リスニング中、集中できた。
9. 集中していないことに気づくと、再度集中した。
10. 内容に関して、イメージや映像を思い浮かべながら聞いた。
11. リスニング中に単語、文レベルで言葉を頭の中でリピートした。
12. 話し手が強調している内容、メインアイデアに注意向けながら聞いた。
13. 一語一語単語を訳しながら聞いた。
14. 理解した情報から、内容を推測しながら聞いた。
15. 数字が出てきた場合は、その数字を覚えるようにした。
16. 自分の持っている知識や経験と、内容を関連させながら聞いた。
17. 英語の音声変化（音の省略、同化、連声、短縮、弱母音化など）についての知識を利用して聞き取りを行った。
18. 強調して発音されている語句に注意して聞いた。
19. 会話の区切りの目印となる語句（例 *but, then* など）に注意を払った。
20. 詳細にこだわらず、テキストの概要を把握するよう心がけた。

リスニング後

21. 聞き終えた後自分の言葉でその内容を要約した。

(Questionnaire in English)

Before listening

1. I tried to ignore all the things that distracted me.
2. I started thinking in English before I started a listening activity.
3. I tried to listen for the main point.

During listening

4. Even if I didn't understand the content of the passage, I didn't give up trying to comprehend the passage.
5. When I didn't understand the content of the passage, I thought about it for a while.
6. I skipped the words I did not understand.
7. I listened to the speaker's tone of voice.
8. I was able to concentrate.
9. I lost immediate train of concentration, but tried to recover my concentration right away.
10. I visualized the settings.
11. I repeated to myself what I had heard.
12. I listened to the stressed segments of the discourse.
13. I tried to translate each word.
14. I attempted to guess what the speakers intended to say.
15. I tried to remember the numbers if there were any.
16. I associated the information received from the discourse with my own prior experience and knowledge.
17. I listened by using my knowledge about the phonetic change (elision, assimilation, liaison, contraction, reduction).
18. I listened to the stressed segments.
19. I paid attention to discourse markers in the discourse.
20. I tried to understand the main point and disregarded the details.

After listening

21. After listening, I summarized the content.

Appendix B Samples of Listening Materials

Inauthentic 1

A man had three donkeys but he wanted to buy another. He went to a donkey-seller and said, 'Which is your best donkey?' 'This one', said the donkey-seller and pointed to a donkey. 'Take it home with you and try it. Then come back and pay me or bring back the donkey.' 'Very well', said the man. The man took the new donkey home and showed it to the other three donkeys. One of them worked very hard all the time. It was never tired. The second donkey tried to work but soon became tired and stopped. The third donkey was very lazy. It did very little work. The new donkey looked at the three donkeys for a few minutes. Then it went and stood by the lazy donkey and began to eat happily at its side. The man at once took it back to the donkey-seller. 'Here is your donkey,' he said. 'I am not going to buy it. I don't want it. It is lazy.' 'But you had it for only ten minutes,' said the donkey-seller. 'You cannot know.' 'Yes, I can,' said the man. 'He chose a lazy donkey for a friend. He is lazy, too. 'Look at a man's friends. Then you know the man.

Authentic 2

Thirty years ago, it was cutting-edge technology. Now, it's nearly forgotten. "Do you know what a Walkman is?" "With a CD, like, to play CDs? Yeah." In the past 30 years, Sony has sold more than 200 million Walkmen. "Twenty years ago, yes, yes, then I did use a Walkman, and it was good." But now, it's pulling the plug. "I used to have one when they were in fashion, but I don't have one anymore. It's all about MP3s and downloading and iPods." Sony stopped producing the Walkman in Japan; the last batch was made in April. The times, they are a-changing. Sony revolutionized the electronics industry with the Walkman in 1979. It was the first-ever portable music device. As cassette tapes gave way to CDs, Sony followed up with the Discman. But when Apple burst into the market with the first iPod back in 2001, there was no turning back. Sony says there's still some demand for the classic Walkman in parts of Asia and the Middle East. To accommodate those customers, it'll produce a limited number of Walkman out of China. But many music lovers went digital a long time ago and say they won't even notice the Walkman has gone. "Walkman with cassettes, right? No, I don't even have any cassettes anymore." Like crimped hair and Pac-Man, a classic of 1980s culture now banished to the history books and the memories of nostalgic fans.