Debilitating Effects of “Listening Stress”:
Focusing on the Use of Coping Strategies

Tokuji NORO
Hirosaki University

Abstract

Listening anxiety is known as an affective factor influencing the second/foreign language listening comprehension process. However, the construct has been examined and discussed as unique to each individual learner and more or less a static learner attribute, which makes it rather difficult to examine the real-time effects of listening anxiety on cognitive processing in second/foreign language listening. The present study introduces “listening stress” as an alternative to listening anxiety and examines its debilitating effects, focusing on the use of coping strategies. A small-scale stress-inducing experiment was conducted with 9 Japanese learners of English. The results show that increased listening stress hinders the use of coping strategies, debilitating listening comprehension, especially in higher cognitive processing, such as inferencing and generalization/application of information. For future research, both quantitative and qualitative analyses of data obtained from more subjects, more control of factors within subjects, and further refinement of the instrumentation were considered to be necessary.

1. Introduction

Research into anxiety presumed to be influencing second/foreign language (L2/FL) learning has identified the construct of foreign language anxiety and revealed its distinctiveness as a construct separate from the more general type of anxiety (e.g., Horwitz, Horwitz, & Cope, 1986; MacIntyre & Gardner 1991a, 1991b; MacIntyre, 1999). As the subcategory of foreign language anxiety pertaining specifically to L2/FL listening, listening anxiety has been examined regarding its instructional implications in teaching and learning of L2/FL listening (e.g., Vogely, 1998, 1999; Elkhafaifi, 2005). The construct of foreign language anxiety, however, has often been discussed as unique to each individual learner and more or less a static learner attribute, which makes it rather difficult to examine the real-time effects of listening anxiety on cognitive processing in L2/FL listening. As a result, the adverse effects of listening anxiety have been mostly examined and addressed for identification of the source and its removal. This “expectant treatment” type of research
approach inevitably hinders delineation of anxiety affecting the listening comprehension process.

The present author has reexamined listening anxiety on the basis of the psychological stress framework and has attempted to explicate its debilitating mechanisms in a series of research projects (e.g., Noro, 2005, 2006, 2007, 2009a, 2009b), in which the newly conceptualized construct of “listening stress” was introduced as an alternative to listening anxiety. The conceptualization of listening stress was based on Lazarus and Folkman’s (1984) psychological stress theory, defining it as “psychological inhibition debilitating listening comprehension which L2/FL learners experience in the face of listening tasks that they perceive to be too difficult” (Noro, 2005, p. 138). A survey with Japanese L2/FL learners of English (Noro, 2006) found that L2/FL listeners who experienced more serious listening stress tended to have more listening difficulties. The results agree with those reported by Maclntyre and Gardner (1994), who observed significant deterioration in L2 (French) vocabulary learning accompanied by increased levels of anxiety aroused by the introduction of video tape recording.

The explication of the debilitating mechanisms of listening stress was attempted in another survey (Noro, 2007), which yielded a cognitive appraisal model of listening stress. The model, still to be understood as a tentative one, renders a schematic representation of the mechanisms of listening stress undermining the coping process and debilitating listening comprehension, causing negative appraisal of the situation and increasing stress further. The debilitating mechanisms were also explored in a small-scale stress-inducing experiment (Noro, 2009b). The data distinctively evidence increased stress experienced by the subjects debilitating their comprehension. Micro-level data analysis revealed that the effect size of listening stress varied depending on the type of cognitive processing required by each listening task. The results of this analysis, together with the interview data from the above-mentioned survey, suggest that listening stress works adversely on the coping process, i.e., the use of listening strategies, causing the overall debilitation of comprehension. This, however, needs to be evidenced by data if it is to be claimed as a certainty.

In search of further elucidation of the debilitating mechanisms of listening stress, the present study aims to examine the relationship between the arousal of listening stress and the use of coping strategies by conducting another small-scale stress-inducing experiment that is modeled on the one mentioned above (Noro, 2009b). The following two research questions are directly addressed:

1) How is L2/FL listening comprehension affected by increased listening stress?
2) How does increased listening stress affect coping strategies in L2/FL listening?

As the frame of reference in considering coping strategies, the two types of coping that were discussed by Lazarus and Folkman (1984) were utilized: problem-focused coping and
emotion-focused coping. According to Lazarus and Folkman, the former is “directed at managing or altering the problem causing the distress,” while the latter at “regulating emotional response to the problem” (p. 150).

2. Method

2.1 Subjects

The subjects of the study were 9 Japanese students (5 males and 4 females). Two of them, who were found to have the experience of short-term homestay in America, were excluded from data analysis because of indications of its influence on their stress arousal. The subjects’ English proficiency was mostly at an intermediate level.

2.2 Procedures

Listening passages

The subjects were asked to listen to four recorded passages in the order of Passage 1, 2, 3, and 4 (corresponding to Listening 1, 2, 3, and 4). Passage 1 (60 words read in 25 sec.) was of an elementary level, designed as a control to relax the subjects. Passages 2 and 4 (165 words read in 60 sec. each) were of an intermediate level and supposedly of the same difficulty level, while Passage 3 (425 words read in 180 sec.) was of an advanced level or higher than the other three texts. Passage 3 was expected to induce listening stress in the subjects, together with the stress-evoking directions specified below, while Passage 4 was designed to measure the possible debilitating effects of their stress on their comprehension in comparison with the comprehension level of Passage 2, which was to be marked as the baseline comprehension.

Comprehension questions

Comprehension questions were provided for each passage to be answered in Japanese. The questions were presented to the subjects immediately after they listened to each passage. The answers were scored based on their quality, ranging from 0 (no answer) to 5 (excellent). For Passages 2 and 4, the questions requiring three different types of cognitive processing were provided: 1) fact-listening (listening for explicitly stated information), 2) inferencing (listening for contextual information), and 3) generalization/application (using the information that they heard). These three tasks were to identify what types of cognitive processing is most seriously damaged by listening stress.

Self-rating of coping strategy use

A total of 12 coping strategies (6 problem-focused and 6 emotion-focused), all of which have been reported as being useful and actually attempted in both successful and
failed listening by participants in the previous research, were presented prior to the tasks for the subjects in the present research to consciously utilize in their listening tasks (see Appendix). A brief session was held for the subjects to familiarize themselves with the strategies before they set about their listening tasks. After they listened to each listening passage and answered the comprehension questions, they were asked to self-rate their use of the strategies with a 5-point Likert scale ranging from 1 (no use) to 5 (very effective use).

Measurement of listening stress

In order to measure the subjects’ listening stress, a 5-point Likert scale ranging from 1 (almost no stress) to 5 (very severe stress) was prepared, following what MacIntyre and Gardner (1994) devised and called an “anxometer”. Measurement of listening stress was conducted before listening to each passage, totaling four measurements.

Directions

Three directions were given to the subjects in order to intensify their induced listening stress: 1) “Listen carefully because you will be asked to give an oral report of what you will hear to the other subjects in the group,” 2) “Show your best listening performance,” and 3) “Remember that there will be an evaluative session of your listening abilities.” These directions had been proved to be effective for induction of intensified listening stress (Noro, 2007).

2.3 Data analysis

For data analysis the subjects were divided into the high-stressed group and the low-stressed group based on the range of the increase in their listening stress. Of the seven subjects whose data were to be analyzed, four were considered as high-stressed and three as low-stressed. Examination of the conceivable effects of listening stress on listening comprehension and the perceived use of coping strategies were conducted by comparing the data of the two groups. Due to the limited number of the subjects involved in the present study, no inferential statistical analysis was available; instead, the data were examined in search of certain characteristics and tendencies in the experiences of listening stress demonstrated by each group.

3. Results and Discussion

3.1 Effects of listening stress on comprehension

Table 1 shows the summary of listening comprehension of each passage and listening stress measured immediately before each listening. For Listening 2 and Listening 4, the
results of the listening comprehension questions requiring the three types of cognitive processing are also summarized. The data set is represented in the graphs of Figures 1-A and 1-B, which show the interaction between listening stress and comprehension, with the bars indicating the level of comprehension of each passage and the lines the transition of the listening stress experienced by the subjects.

As shown in Figures 1-A and 1-B, both High-Stressed Group and Low-Stressed Group suffer a decline in Listening 3, which was designed to work as a stressor inducing listening stress among the subjects with its formidable difficulty. High-Stressed Group experiences a severe stress after Listening 3, and their comprehension in Listening 4 shows another deterioration, even though its difficulty level is supposed to be the same as that of Listening 2. On the other hand, Low-Stressed Group did not feel much stress in spite of their poor comprehension in Listening 3, and they even comprehended slightly better in Listening 4 than in Listening 2. Examination of the comprehension questions by the question type reveals that High-Stressed Group performed surprisingly poor, especially with the inference and generalization/application types of questions in Listening 4 as compared to Listening 2, while Low-Stressed Group shows no such decline in any types of questions.

The results obtained here are basically in accordance with those reported in the previous research conducted by the present author with the same stress-inducing technique (Noro, 2009b). It is surmised that the increased stress experienced by the high-stressed group before Listening 4 was caused by their listening difficulties with Listening 3. The ensuing deterioration in their comprehension in Listening 4 is most probably the result of the adverse effects of their increased listening stress. Also, the effect on correct answers in the inference and generalization/application types of questions, rather than in the fact-listening, indicates that listening stress is apt to debilitate higher cognitive processing. Thus, the results in the present research can be interpreted as further evidencing the circular mechanisms of listening stress debilitating listening comprehension and the deteriorated comprehension increasing listening stress in turn, as proposed in the previous research mentioned above.

### Table 1  Listening comprehension and listening stress induced

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<thead>
<tr>
<th></th>
<th>Listening 1</th>
<th>Listening 2</th>
<th>Listening 3</th>
<th>Listening 4</th>
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<tbody>
<tr>
<td><strong>Group</strong></td>
<td>LS</td>
<td>LC</td>
<td>F</td>
<td>I</td>
</tr>
<tr>
<td><strong>HS</strong></td>
<td>1.50</td>
<td>3.25</td>
<td>2.50</td>
<td>2.92</td>
</tr>
<tr>
<td><strong>LS</strong></td>
<td>2.33</td>
<td>4.25</td>
<td>2.00</td>
<td>3.17</td>
</tr>
</tbody>
</table>

*Note.* HS=High-Stressed Group, LS=Low-Stressed Group, LS=listening stress, LC=listening comprehension, F=fact-listening, I=inferencing, G/A=generalization/application
3.2 Effects of listening stress on the coping process

The subjects' perceived use of the coping strategies for Listening 2, Listening 3, and Listening 4 are summarized in Table 2. The problem-focused coping, for which six cognitive listening strategies were chosen, was expected to contribute toward making the listening comprehension process more effective from a cognitive viewpoint. The emotion-focused coping, which comprises six affective listening strategies, was to help
enhance affective control in listening. Figures 2-A and 2-B show the interaction between listening stress and the use of the coping strategies.

As the figures show, self-rating for the overall use of coping strategies was lower in High-Stressed Group than in Low-Stressed Group. High-Stressed Group assessed their use of the problem-focused strategies as less successful in Listening 4, when the group felt severe listening stress, than in Listening 2, when they did not feel much listening stress. Their self-rating for the use of the emotion-focused strategies hardly changed. The self-rating of Low-Stressed Group also stayed more or less the same between Listening 2 and Listening 4. Among the six problem-focused strategies, the most severely compromised one in High-Stressed Group was Using background knowledge. Its average rating in Listening 2, when the group did not feel much stress, was 3.5, which described “fairly effective use.” However, in Listening 4, the rating decreased to an average of 2.5, which described “not very effective use.”

The changes of the perceived use of problem-focused strategies in Listening 4 observed in the high-stressed group substantiate the mechanisms of deterioration of listening comprehension mediated by the coping process being damaged by increased stress firsthand. The compromised coping process leads to poor listening comprehension to be negatively appraised in the cognitive appraisal process, further increasing listening stress and thus bringing about the circular debilitating mechanisms. The hindered problem-focused coping recognized by the high-stressed group, represented most evidently in their rating of the use of the Using background knowledge strategy, is to be possibly explained in terms of the “limited capacity of working memory,” the rationale of which was formulated by the present author (Noro, 2009a) on the basis of Eysenck’s (1992) information efficiency theory. It is most likely that the high-stressed group, in coping with their listening stress, pre-empted some of the resources of their working memory that should have been allocated to cognitive processing in listening and did not have enough capacity left for this cognitive processing. As a result, the efficiency of their cognitive processing declined, leading to deterioration of the overall listening comprehension. Using background knowledge is an essential strategy for the inferencing and generalization/application types of cognitive processing, and the low rating for its use by the high-stressed group can be interpreted as corresponding to the lowering of their scores in these types of comprehension questions.

<table>
<thead>
<tr>
<th>Table 2  Perceived use of coping strategies</th>
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<tr>
<td><strong>Group</strong></td>
<td><strong>Listening 2</strong></td>
</tr>
<tr>
<td></td>
<td>PC</td>
</tr>
<tr>
<td>HS</td>
<td>2.25</td>
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<tr>
<td>LS</td>
<td>3.17</td>
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</table>

*Note. PC=problem-focused coping, EC=emotion-focused coping*
4. Conclusion

The present study aimed to examine the relationship between the arousal of listening stress and the use of coping strategies for further explication of the debilitating mechanisms of listening stress, addressing the following two research questions:

1) How is L2/FL listening comprehension affected by increased listening stress?
2) How does increased listening stress affect coping strategies in L2/FL listening?
As for the first question, the present study basically agrees with the results reported in the previous study (Noro, 2009b). That is, increased listening stress debilitates listening comprehension, especially in higher cognitive processing, such as inferencing and generalization/application of information. The second question must be answered with more multi-dimensional analysis as well as further hard evidence, but the results yielded by the present study indicate that the problem-focused coping, as represented in the use of cognitive listening strategies, is compromised by increased listening stress, leading to deterioration of overall comprehension. This most probably brings about the circular debilitating mechanisms of listening stress.

The present study does evidence the hypotheses and explanations of the debilitating mechanisms of listening stress proposed in the previous research, but it is still far from making a generalization, mostly due to the limited number of subjects involved in it. For further elucidation of the debilitating mechanisms of listening stress and its generalization, both quantitative and qualitative analyses of data obtained from more subjects will be needed. Also, more control of factors within subjects as well as refinement of the instrumentation such as listening passages and comprehensions questions will be necessary.

Acknowledgement

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References


anxieties and to processing in native and second languages. *Language Learning, 41*, 513-534.


**Appendix**

**Coping Strategies** (The original was given in Japanese.)

*Problem-focused strategies*

1. Infer the overall contents from the words that you heard.
2. Predict the next developments from the contents that you heard.
3. Direct your attention ahead.
4. Try to listen by the sense group, not word by word.
5. Infer the overall contents from the contexts.
6. Use your background knowledge about the topic and the situation.

*Emotion-focused strategies*

7. Do not worry about what you could not hear.
8. Remind yourself that you will be able to hear next.
9. Relax yourself as much as possible.
10. Remind yourself that it does not matter even if you cannot hear.
11. Remind yourself that you are not the only person who cannot hear.
12. Be satisfied with what you could hear.