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<td>Author(s)</td>
<td>Nakamura, Jinsei</td>
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<td>Citation</td>
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LISTENING DIFFICULTIES
IN A GROUP OF LIAISONED ENGLISH WORDS

Jinsei Nakamura

0. Introduction

Listening is not a simple activity of hearing a stream of speech sounds. It involves other factors in addition to linguistic abilities. Takefuta points out that hearing as an activity is not simply an activity of hearing sounds themselves, but that it is a complex of "concurrent activities" for which many problems are involved as observed in speaking activities.1 We will follow his concept of hearing, although we have adopted the term "listening" for the same concept in the present paper.

In this paper, we will attempt to analyze some problems that Japanese college students encounter when listening to a particular group of English words spoken together in connected speech by using data sorted and summarized from a series of tests.

For the present study, three tests were administered to four groups of Japanese college students and the results analyzed.

The tests were a Sound Discrimination Test (henceforth abbreviated as SDT)2, a General Test of English (GTE)3 and a Listening Comprehension Test (LCT)4 for which four different types of tests were prepared with principal consideration to the presence of liaison among a group of words and their delivery speed. The students were requested to write down what they heard for the tests.

1. Test Results

First, we will discuss results of the three tests which were given to four groups totaling 168 students in the Department of
English at Okinawa Junior College of English and Business. The results of the three tests are listed in Table 1.

Table 1. Average Rates(%) of Correct Answers on GTE, SDT and LCT by Group and No. of Students Tested

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of Students</th>
<th>GTE</th>
<th>SDT</th>
<th>LCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>45</td>
<td>42.0</td>
<td>63.0</td>
<td>16.7</td>
</tr>
<tr>
<td>B</td>
<td>43</td>
<td>43.3</td>
<td>58.6</td>
<td>38.1</td>
</tr>
<tr>
<td>C</td>
<td>39</td>
<td>46.5</td>
<td>60.0</td>
<td>18.7</td>
</tr>
<tr>
<td>D</td>
<td>41</td>
<td>45.4</td>
<td>61.7</td>
<td>44.5</td>
</tr>
</tbody>
</table>

As far as the results of both GTE and SDT are concerned, it is apparent from the table that there are minor differences in the results among the four groups ranging from 42.0 to 46.5 percent for GTE and from 58.6 to 63.0 percent for SDT.

Let us observe next the results of LCT, however. As seen in Table 1, the rates of correct answers on the LCT for each group are 16.7, 38.1, 18.6 and 44.5, and there is a considerable difference among the results of the tests in contrast to the slight differences among scores on both the GTE and SDT, as we have observed.

Table 2 below offers further information on the tests.

Table 2. Types of LCT's

<table>
<thead>
<tr>
<th>Type</th>
<th>Speed (wpm)</th>
<th>Presence of Liaison</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCT-1</td>
<td>212 (Normal)</td>
<td>Yes</td>
</tr>
<tr>
<td>LCT-2</td>
<td>211 (Normal)</td>
<td>No</td>
</tr>
<tr>
<td>LCT-3</td>
<td>165 (Slow)</td>
<td>Yes</td>
</tr>
<tr>
<td>LCT-4</td>
<td>253 (Fast)</td>
<td>No</td>
</tr>
</tbody>
</table>

From Table 2 we notice that both LCT-1 and LCT-2 have almost the same speed, with the only exception being the difference
in the presence of liaison. LCT-3 was the slowest among the tests with the presence of liaison and LCT-4 was fastest in speed without the presence of liaison in a group of words. We can assume from tables 1 and 2 that the presence of liaison and some other factors might have exerted some fatal effects upon difficulties in listening, since the results of the first set of the two tests, whose speed were almost the same, are considerably different. This can be said of the results of the second set of the tests (LCT-3 and LCT-4), where the results of LCT-3 were 18.7, much lower than that of LCT-4 at 44.5, whose speed rate was 253 words per minute as compared to that of LCT-3 (165 wpm) for which better results could be expected because of its relatively lower speed.

In short, LCT-1 and LCT-3, for each of which the presence of liaison among a group of words was included, seem to have been much more difficult for the students of group A and group D regardless of the delivery speed.7

Before summarizing this section let us consider the correlation coefficient among the results of these four types of tests and GTE and SDT, given in Table 3 below.

Table 3. Correlation Coefficient of GTE, SDT and LCT by Group

<table>
<thead>
<tr>
<th>Group A</th>
<th>GTE</th>
<th>SDT</th>
<th>LCT-1</th>
<th>Group B</th>
<th>GTE</th>
<th>SDT</th>
<th>LCT-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTE</td>
<td>1.000</td>
<td>0.574</td>
<td>0.816</td>
<td>GTE</td>
<td>1.000</td>
<td>0.438</td>
<td>0.491</td>
</tr>
<tr>
<td>SDT</td>
<td>0.574</td>
<td>1.000</td>
<td>0.528</td>
<td>SDT</td>
<td>0.438</td>
<td>1.000</td>
<td>0.415</td>
</tr>
<tr>
<td>LCT-1</td>
<td>0.816</td>
<td>0.528</td>
<td>1.000</td>
<td>LCT-2</td>
<td>0.491</td>
<td>0.415</td>
<td>1.000</td>
</tr>
</tbody>
</table>
As can be seen, the correlation coefficient among the GTE, SDT and the four types of LCT for the four groups is neither very high nor too low. It is notable, however, that there is a strong relation between GTE and LCT for LCT-1 (Group A) and LCT-4 (Group D).

To summarize this section, we assume that liaison among a group of words and some other factors resulting from it might have had some decisive effects upon the Japanese listener, since no other significant factors can be observed to cause difficulties in listening as far as the data summarized from the results of these tests were concerned.

2. Liaison as a Factor in Causing Listening Difficulties

We have observed the test results in the preceding sections, arriving at the conclusion that liaison might be the chief reason for Japanese listeners having difficulties in English language listening comprehension.

In succeeding sections, we will attempt an analysis of several types of liaison which seem to effect the listening of the Japanese student. For the present paper, however, we will limit our discussion to basic and particular types of liaison, which were examined with LCT-1 and LCT-2 for Group A and Group B, namely liaison of two words closely connected and pronounced together with a juncture that is hardly audible to the Japanese student.
Each group of words was tested in a sentence the average number of words of which was 6.1. In the following discussion, however, an analysis will be made only of the results of LCT – 1, since the same results of the analysis can be expected for LCT – 3.

2.1. Liaison Between the Word Final Consonant of the Content Word and Word Initial Vowel of a Function Word

2.1.1 A Word Initial Vowel of a Function Word With a Weak Stress (Hereafter abbreviated as “C+f”)

The rate of correct answers to LCT – 1 was 16.3 and relatively very low. See the example: "I'm sick of rain.", which is one of 20 sentences tested. The words, "sick of" were liaisoned between /k/ of "sick" and /ə/ of "of" with a weak stress falling on the vowel but only 8 students (18.1%) of the total of 45 students who took LCT – 1, could perceive this particular group of liaisoned words. There were also some students who heard only the first element (abbreviated as FE) of the group of words, "sick", and some others the second element (SE) "of" only. Still others mistakenly heard it as morphologically similar to such words as "second", "seconded", and "sake of". Others could not recognize them at all, answering with nonsense words such as "searve", "seeted", and "seak of". In Table 3, the results of a “C+f” on the LCT is listed. The figures are the rate of correct answers as well as those of correct answers for either the first or the second element of the group of words, different words (Dif. Wds.), nonsense words (Non. Wds.), and words unanswered (No. Ans.).

Table 4. The Results of “C+f” on LCT-1 (%)

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>16.3</td>
<td>15.4</td>
<td>6.2</td>
<td>26.0</td>
<td>17.7</td>
<td>18.4</td>
</tr>
</tbody>
</table>
It's notable in the table that the rate of correct answers for first element of the total of 20 groups of words is approximately 2.5 times higher than that of the second element. The number of "different words" is 26.0 percent and is much greater than that of the "nonsense words." We can assume here that the content word as the first element of the groups of words was more easily recognized than the function word of the second element. Because of the ambiguous vowel of function words with a weak stress, moreover, it seems that the rate of the number of "different words" outnumbered that of "nonsense words", which might also have been produced mainly because of the vowel of function words with a weak stress which probably made the groups of words ambiguous for the students to listen to.

We assume that this probably is because the students could not hear the internal open juncture between the groups of words nor the vowel at the initial position of the function word which is also difficult for the Japanese listener to perceive since it is often dropped or unstressed and reduced to an ambiguous sound such as /i/, /ə/ or /u/.

2.1.2. Word Initial Vowel of a Function Word With a Strong Stress (C+F)

Next let us consider the results of another type of liaison, that of a word final consonant of a content word followed by a word initial vowel of a function word with a strong stress. This is different from the case discussed above in that the vowel at the initial position of the function word bears a strong stress as in such examples as "work in" in the sentence; "This room is pleasant to work in." The vowel of the function word "in" bears a strong stress at the end of this particular sentence. See Table
5, which shows results of "C+F" for LCT-1.

Table 5. Results of "C+F" on LCT (%)

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</tr>
</thead>
<tbody>
<tr>
<td>28.0</td>
<td>16.2</td>
<td>10.0</td>
<td>27.0</td>
<td>15.0</td>
<td>3.8</td>
</tr>
</tbody>
</table>

As can be seen, the rate of correct answers to this part of the test was 28.0, much higher than that for the "C+f" already observed, and it is also higher than those of any other tests discussed below. This is probably because the strong stress, which was relatively clearly pronounced with a recognizable internal open juncture between the group of words, was utilized as a cue for the students to recognize the function word.

In connection with this particular type of liaison, A.C. Gimson (1964: p.275) remarks as follows:

"It is unusual for a word final consonant to be carried over as initial in a word beginning with an accented vowel, the identity of the words being retained. ... more particularly, the fortis plosives do not acquire aspiration such as would accompany their shift to an accented syllable initial position ... One or two phrases in common use do, however ... they may be considered as constituting, in effect, composite word forms."

It is noteworthy, however, that the rate of the total number of "different words," "nonsense words," and "words unanswered" was approximately 46 percent. We assume that it was still difficult for the Japanese listener, who had a knowledge of an internal open juncture as occurred between the group of words, aspiration and so forth for a clue to the solution of the problem, to recognize the group of words "work in" as a set of two individual words.
2.2. Liaison Between the Word Final Consonant of a Function Word and the Word Initial Vowel of the Content Word.

2.2.1. Word Initial Vowel of a Content Word With a Weak Stress \((f+c)\)

This type of liaison seems more difficult than those discussed in the preceding sections for the Japanese listener to recognize. For example: "I paid my rent in advance." The group of words liaisoned here is "in advance." In the test, only five students \((11.1\%)\) out of the total of 45 were able to answer correctly. The rate of correct answers was a low 7.8, as shown in Table 6 below. Many students heard them as "dance." Some others heard them as "advant", "to dance" "an advance" and so on with nonsense words such as "it vant", "it bance" and "in a bents". The total rate of the number of such errors was 49.0 percent, the highest among the rate of errors of the six types of liaison in LCT-1. It seems that many listeners were unable to clearly perceive the word initial vowel of the function word "in", which bears a week stress, nor the word initial vowel of the content word "advance" since each vowel was pronounced with a weak stress, thus yielding ambiguous vowels such as those mentioned earlier. For this reason and others such as an internal open juncture being hardly audible, the listeners could not recognize the group of words.

**Table 6. Results of "f+c" on LCT.**

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<tbody>
<tr>
<td>7.8</td>
<td>7.8</td>
<td>6.1</td>
<td>49.0</td>
<td>20.0</td>
<td>9.4</td>
</tr>
</tbody>
</table>

2.2.2. Word Initial Vowel of the Content Word With a Strong Stress \((f+C)\)
Next we will observe the liaison of the word final consonant of a function word and the word initial vowel of a content word with a strong stress. For example: "Some wines are kept on ice." The vowel of the content word "ice" in the example bears a relatively strong stress. The rate of correct answers to the test was 17.0 percent. In other words, only three students (6.7%) could recognize the group of words "on ice" in the example above. Some listeners heard them as "nice", "eyes" or "are eyes" with such nonsense words as "an eyes", "nise" and "anais". Some others heard them as "ice", which is the second element of the group of words. It is obvious from the table that the rate of correct answers for the second element of the group of words is 16.1, and is relatively higher than that of the "f+c". We assume that this probably is because it was relatively easier for the Japanese listeners to perceive the second element of the set of words which bore the strong stress.

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<tbody>
<tr>
<td>17.0</td>
<td>5.0</td>
<td>16.1</td>
<td>23.2</td>
<td>25.3</td>
<td>13.4</td>
</tr>
</tbody>
</table>

2.3. Liaison of the Word Final Consonants and the Word Initial Vowel of Content Words.

In the preceding sections, we have observed such liaison as the word final consonant of either content or a function word with the word initial vowel of either a function or a content word, and vise versa. In the sections following we will observe liaison between content words themselves.

In this case too, our discussion will be separately made in
consideration of the kind of stresses falling on the vowel of the second element of each group of words.

2.3.1. Liaison of the Vowel with a Weak Stress \((C+c)\)

In the following example, "He has a large amount of money," the words "large amount" are liaisoned. The same tendency was shown among the errors made with the second element of the group of words tested in this part of the test. It is notable, however, that the first element of the group of two content words were relatively easily recognized in comparison with that of the liaison either of the content word and function word, or of the function and the content word. As far as the results of the test are concerned, the average rate of correct answers of the first element of the test was 33.0, relatively high. For instance, 21 students (47.1\%) recognized "accidents", the first element of the group of words "accidents occur" in the sentence "Minor accidents occur all the time everyday," but only 2 students (4.4\%) for the second element, "occur." Thus the rate of correct answers to the second element was as low as 6.9 percent. We can assume that the first element of the group of content words was much easier than the second element as well as than that of the second element of the either the function or content word.

<table>
<thead>
<tr>
<th>Table 8. Results of &quot;C+c&quot; on LCT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>18.7</td>
</tr>
</tbody>
</table>

2.3.2. The Word Initial Vowel With a Strong Stress \((C+C)\)

The situation, however, is different with this type of liaison. As observed in the preceding sections, we have discovered that
the second element, the initial vowel of which bears a strong stress, was relatively easy for the student to recognize. The same can not be said in this case, however. That is, the second element seems to be very difficult for the listener to recognize, though the vowel of the second element bears a strong stress. For example, only 2 students (4.4%) recognized the words "took over" in the sentence "Mr. Green took over his father’s business." Many of the others mistakenly heard them as "to go by," "go go" and "to go with." The important point here, however, is that the first element was also relatively difficult for the Japanese listener to recognize.

The rate of correct answers to the test was, therefore, as low as 5.8 and was the lowest among all the results of the tests given.

We can assume here that this liaison was most difficult for the Japanese listener to recognize. This is probably because the internal open juncture between the group of words was completely ignored by the students, which accordingly made them think of the group of words as a single unit, along with the listeners' unfamiliarity with the pattern of English stress in which a tertiary stress usually falls on the first element and a primary stress on the second.

Table 9. Results of "C+C" on LCT.

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>5.8</td>
<td>22.0</td>
<td>10.0</td>
<td>32.0</td>
<td>16.4</td>
</tr>
</tbody>
</table>

3. Summary and Conclusion

Throughout preceding sections, we have observed six types of English liaison which cause difficulties to the Japanese listener
in his perceiving a group of liaisoned English words. We will now summarize and conclude here our discussion.

First, it has been shown from the results of four types of LCT which were administered to four different groups of Japanese college students that liaison is the most important factor which causes difficulties for the Japanese listener in his perceiving those particular types of closely linked English words mentioned above.

Second, we have found from the correlation coefficient that there is a relatively strong relation between GTE, SDT and the four types of LCT. It is particularly notable that there is a stronger relation between the GTE and LCT's 1 and 4. This probably means that there is a strong relation between the results of the GTE and those of the test of a linked group of English words delivered at normal speed, and a non—linked group of words with fast speed.

Third, the rates of the total number of errors of "f+C" and "C+C" were relatively high, and they seem most difficult for the Japanese listener to perceive. It could be assumed, however, from the rates of the total number of different words, nonsense words and the words unanswered for "f+C"(70.25%) and "C+C"(51.70%) that "f+C" was much more difficult than "C+C" for the listeners to perceive, since the rate of correct answers to either the first or second element of "C+c" and "C+C" was much higher than those for "f+c" and "f+C". In case of "C+c" and "C+C", either the first or the second elements of the liaison was relatively easily perceived probably because of the content word which was relatively easily recognized, except for "f+c" where the rate of correct answers to the second element of the content word was as low as 6.1%.

Of "C+c" and "f+C", however, the rate of the total number
of errors of different words, nonsense words and words unanswered was 78.4% and was highest among all the types of liaison. It could be summarized that "f+c" is most difficult for the Japanese listener to perceive.

It is also characteristic that the rate of the total number of errors of different words, nonsense words and words unanswered for "C+c" was 62.2 and the second highest, in spite of our finding that the content word was more easily recognizable than the function word either as the first or the second element. This probably is because there occurred a change in the degree of stress falling on the vowels of the two content words liaisoned with an internal open juncture which is hardly audible. This is another type of liaison that the Japanese listener has difficulties with in their listening to a liaisoned group of English words.

The average rate of the total number of errors of the different words, the nonsense words and the words unanswered of "C+C" was as high as 53.95%. It was noteworthy, however, that the rate of the total number of right answers of "C+F" was 28.0%, the highest among all the types of liaison. This is probably because most of the function words tested for this study as the second element of the liaisoned group of words were monosyllabic and bore a strong stress. We can assume that the listener could perceive relatively easily both the content word as the first element and the function word as the second element with a strong stress on their initial positions.

In the case of "C+F" and "f+C", generally speaking, the rate of the total number of errors of the different words, nonsense words and words unanswered was relatively very high, indicating that the listener could not perceive either the first or the second
element enough to answer the tests given.

For "C+C" and "C+c", on the other hand, "C+c" is relatively easier for the Japanese listener to perceive either as the first or the second element, but it is difficult for the listener to perceive both the first and the second element of "C+C" as the results have shown.

These are the findings which we have observed throughout the previous sections of the present paper.

We can add, moreover, the following as part of our conclusion. That is, liaison, which is closely related with juncture, is one of the most significant factors which hinder the Japanese listener's perceiving a group of closely linked words. This probably is because junctual oppositions are frequently neutralized in connected speech or may have such slight phonetic value as to be difficult for the Japanese student to perceive.9
Note

1. This is my own translation from the Japanese version. All errors are my own.

2. Quizzes in "A Practical Course in English Phonetic (Kenichi Ando: 1984) were used for the test.

3. This is a standard test of English annually given to all the freshmen at the University of Okinawa and Okinawa Junior College of English and Business.

4. I carefully chose the test sentences for LCT in due consideration of vocabulary, for which I tried to choose relatively easy and frequently used words from the "Practical Use of the Basic English Vocabulary for Senior High school" by Zeneiren (Japan Federation of the English Language Study Societies: 1981).

5. They are the exact same tests with the exception of their speed and presence of liaison.

6. I used a speech compressor to change the speed. To calculate the sentence rate, I used the formula which Takefuta used in his book, "Hiaringu no koudoukagaku" (1984: p.60)

7. In this connection Takefuta (1984) adduces a quotation from Machida (1979: pp.26-28) and Kono (1984: p.91) and states that speed doesn't impede listening as long as it doesn't exceed a certain limit, but it rather functions to improve listening.

8. There is not much difference in the results of LCT-1 and LCT-3 although they are different in speed. We think, therefore, it is enough to deal with the results of LCT-1 only for the present paper.


10. I am grateful to Mr. Charles Duncan, instructor of English at Okinawa Junior College of English and Business, for taperecording the test problems, and Mr. Gene Van Troyer for reading and commenting on this paper.
References


Bibliography


