Exploring Second-Language Learner Comprehension of University Lectures

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Abstract:
In international education, the ability to comprehend English-medium lectures has become an important benchmark for many students from non-English speaking cultures, yet the issue of second-language lecture comprehension has received only occasional attention by scholars. This research aims to address this gap by exploring the linguistic factors that affect lecture comprehension of Japanese users of English in an English-medium lecture course at Ritsumeikan Asia Pacific University (APU) in Japan. It identifies the key linguistic factors that are likely to pose a challenge for non-native users of English in this context and investigates the effects of these factors on the comprehension of the participants as they attend lectures in the course. It concludes with recommendations for improving lecture comprehension and options for future research in this area.

Key terms: Lectures, Comprehension, Non-native users of English, Japanese-basis students

1. Introduction

This study explores a mode of spoken discourse which is of major importance to university education internationally, and yet has received only occasional scholarly attention: the academic lecture. In most university courses, lectures continue to function as the primary mode of imparting knowledge to students; however, lectures are arguably one of the least efficient methods of delivering content due to their length, complexity and mode of delivery. Additionally, and in recent years, an increasing number of universities in the Asia Pacific have started offering lectures in English, and the ability to comprehend English-medium lectures has become an important benchmark for many students from non-English speaking cultures who are seeking an international education. This paper considers findings relating to the latter of these issues, that is, the comprehension of lectures by students who are non-native speakers of English. Specifically, it reports on a case study of five Japanese learners of English who were enrolled in an English-medium lecture course in the social sciences during the 2016 academic year at Ritsumeikan Asia Pacific University (APU) in Japan. The paper begins by reviewing previous studies of lecture comprehension to identify the linguistic features of lectures which are likely to cause comprehension difficulties for non-native listeners of English. In doing so, it aims to address the following specific research questions:

1) What linguistic features of English-medium lectures are likely to cause comprehension

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difficulties for Japanese users of English?
2) To what extent do these features match with the features that have been cited in the literature on lecture talk as problematic for comprehension?
3) What techniques or strategies can lecturers employ to minimize comprehension difficulties for non-native users of English in their lectures?

It then proceeds to outline a methodology for analyzing the lecture comprehension of the five Japanese students, before going on to discuss the findings of the analysis and the extent to which the comprehension problems experienced by the Japanese learners in this study match with the types of issues identified in the literature. It concludes by offering recommendations on improving the lecture comprehension of non-native users of English and avenues for further research into the comprehensibility of lecture talk.

2. Research on Second-Language Lecture Comprehension

Academic lectures are one of the most challenging aspects of university education for non-native users of English, due to their length, speed of delivery and academic content. The difficulties faced by non-native users of English in comprehending lectures are well-documented in the literature. In general, these difficulties can be divided into two categories: 1) linguistic factors related to the mode of delivery and the language used in lectures and; 2) cultural factors such as differences in cultural knowledge and attitudes towards learning in other culture (for a more detailed account of this categorization, see, Bilbow, 1989, pp. 91-95). A brief overview of these factors will be provided below, before turning to the development of a methodology for investigating the linguistic and other factors that may cause comprehension problems for Japanese users of English in the APU context.

2.1 Linguistic Factors

Studies of the comprehension levels of non-native users of English in university lecturers have identified discourse, grammatical, lexical and phonological aspects of the language used in those lectures as especially problematic for comprehension (e.g. Flowerdew, 1994; Mulligan & Kirkpatrick, 2000; Rost, 2002). In addition, aspects of the mode of delivery such as a lecturer's speed of speaking and style of delivery are also cited as challenging for non-native students in university lectures (Flowerdew, 1992; Bilbow, 1989).

At a discourse level, researchers have examined comprehension difficulties associated with the structuring of lectures for different purposes, for example, informative vs. argumentative lectures (e.g. Tauroza & Allison, 1994), variations in the structure of lectures across disciplines (Dudley-Evans, 1994), the development of topic frameworks in lectures and/or how topic shifts are signaled (Hansen, 1994), and difficulties with comprehending the way that topical phases or elements of lectures such as elaborations are structure or developed (e.g. Fahmy & Bilton, 1990; Young, 1994). Flowerdew (1994, p. 11) also points to potential difficulties with distinguishing material which is relevant to the main purpose of the lecture and that which is less relevant,

such as digressions, asides and jokes. Similarly, Lebauer (2000, p. 14), observed how lecturers commonly"go off on tangents if new thoughts arise while they are speaking". These tangents are a feature of the mode of lectures, that is, lectures are live events and lecturers may express unplanned thoughts while speaking (Lebauer, 2000). As will be noted later in this study, these unplanned or unpredicted sequences are an important factor in loss of comprehension in lectures.

In addition to the factors just mentioned, Blackwell (2011), observed that discourse-structuring in academic lectures is more complex than the structuring found in written academic discourse. Discourse-structuring refers to the way that topical themes are expanded or developed in speech or writing, for example, an explanation of tourism trends in the Asia-Pacific region may be expanded via multiple additional explanations or descriptions of aspects of the history of tourism in the region, with each one linking back to the overall theme of tourism that was first introduced. With each layer of structuring, more effort is required by the listener to link the text with material that preceded it, making extended elaborations (or deep thematic structures) more difficult to follow (Blackwell, 2011). This phenomenon of deep thematic structuring in lectures may also be a contributing factor to the comprehension problems faced by non-native listeners in lecture contexts.

At a lexicogrammatical level, comprehension may be affected by factors such as grammatical structure, sentence length, the amount of information contained in sentences or the amount of redundancy employed (Kennedy, 1978, cited in Bilbow, 1989). Flowerdew and Miller (1992) also reported that new vocabulary and field-related terms or concepts caused comprehension problems for the non-native participants of lectures surveyed in their research. At a phonological level, accent and speed of delivery are frequently cited as problematic, as they affect the ability of students to identify and recognize sounds and words in a lecturer's speech (Mulligan & Kirkpatrick, 2000, p. 327)

Additionally, and as mentioned above, aspects such as the lecture mode are frequently cited as problematic for the comprehension of non-native participants in university lectures. As Flowerdew (1994, p. 10) points out, lectures, like other forms of classroom instruction, are delivered in real time and audiences do not have the "same degree of control over the text as do readers, who can dwell in parts of the text, skip over other parts, backtrack etc." The speed of delivery also poses major challenges for non-native listeners in lectures. Griffiths (1992, p. 385), for instance, argues that comprehension declines as the speech rate of the lecturer increases. Furthermore, non-verbal signals such as gestures, or facial expressions or other conventions or cues may be difficult for students to interpret in lectures (Mulligan & Kirkpatrick, 2000) and may contribute to comprehension difficulties.

2.2 Cultural Factors

In addition to the linguistic factors outlined above, a range of cultural factors may also cause comprehension difficulties for non-native users of English in lectures. Bilbow (1989), for instance, argues that lectures are seldom contextualized in terms of their subject matter, making it necessary for students to "impose a context of their own in order to render the lecturer's words meaningful"

(Bilbow, 1989, p. 93). Students who have cultural backgrounds which are sufficiently similar to their lecturers may be able to generate this context, but students from non-English speaking backgrounds may not.

Bilbow (1989) also points to the possibility of students from non-English speaking backgrounds being confused by references to background knowledge which is understood by the lecturer but not by the audience. In addition, he points out that difficulties may arise from different cultural conceptions of knowledge and/or learning. As an example, he points to a lecturer's use of jokes or colloquialisms that are understood as acceptable in the lecturer's culture but not in the students' cultures. These differences in cultural norms have the potential to make comprehension difficult or impossible for the audience (Bilbow, 1989, p. 94).

2.3 Other Factors

Research into lecture comprehension has also identified other situational factors that may influence comprehension in lectures. These factors may include the length of the lecture, distractions in the lecture hall and any materials that lecturers deploy in support of their lectures. Flowerdew and Miller (1992, p. 72), for instance, in a study of the problems experienced by Hong Kong students taking lectures in English, reported that the students in their study had difficulty maintaining concentration over long periods. This could be partly attributed to the style of delivery (i.e. lectures are typically delivered as extended monologues, and to distractions from other students, e.g. other students chatting during the lecture). Furthermore, Briguglio (2000), in her study of language and cultural issues in transnational education, reported that audience comprehension was improved when lecturers used visual aids such as overhead transparencies, lecture notes or lecture outlines. It may be inferred from these observations, then, that the quality or availability of supporting materials may have an effect on non-native users' comprehension of lectures in English.

Finally, Mulligan and Kirkpatrick (2000) add that lecture comprehensibility can be improved by pre- and post-lecture activities. In their study of lecture comprehension problems faced by students from non-English speaking backgrounds, Mulligan and Kirkpatrick found that *active reworking* of lecture material after lectures was an effective way for students to enhance their understanding of lecture content, as this process involves a "reframing of concepts so that they are consistent with the students' own cognitive styles and knowledge bases" (Mulligan & Kirkpatrick, 2000, p. 329).

2.4 Summary of Factors

By way of summary and considering the studies just outlined, the factors that are likely to affect non-native listeners' comprehension of lectures can be summarized as follows:

Table 1

Summary of factors that may influence lecture comprehension

Factors	Examples
Linguistic	Topic structure, topic signaling, lecture purpose, asides and digressions, grammatical structure, length of utterances, amount of information, redundancy, new vocabulary and/or concepts, accent, speed of delivery, non-verbal cues
Cultural	Differences in background knowledge, culturally acceptable subject matter and styles of delivery
Other	Length of lectures and concentration, availability and quality of visual materials, pre- and post-lecture activities

As mentioned earlier, the aim of this study is not to consider the extent to which all of these factors might affect lecturer comprehension among Japanese users of English at APU. Instead, and to permit the study to be conducted in a manageable way, the analysis of comprehension was directed specifically towards linguistic factors that may influence comprehension, but also leaving open the possibility of exploring cultural or other factors, if they appeared to be of importance. With this focus in mind, a methodology was developed to investigate comprehension levels among Japanese users of English at APU. The specific procedures employed are outlined in the following section.

3. Methodology

This section provides an overview of the context, subjects and the data collection methods employed in this study.

3.1 The Context

The context of this study was an International Relations lecture course held at Ritsumeikan Asia Pacific University in the spring 2016 semester. The course consisted of 15 lectures held over an 8-week period in the first quarter of the semester. As is frequently the case at APU, the course consisted of 200-300 students from a mixture of nationalities. In the APU educational system, this lecture was open to *English* and *Japanese-basis* students, in other words, students who were admitted to the university based on their proficiency in one of these languages. The English-basis students were from a variety of countries; however, the vast majority could be categorized as non-native users of the language, in other words, their first language was a language other than English (e.g. Chinese, Korean, Thai etc.). The Japanese-basis students were predominantly Japanese

nationals, although a few were of other nationalities, but proficient enough in Japanese to be admitted to the university on that language basis.

The lectures in the course were all delivered in English by a foreign lecturer, that is, a lecturer from outside of Japan, whose first language is English. For reasons of confidentiality, the lecturer shall be referred to simply as *the lecturer* in this study. The lectures were conducted in a large lecture hall, and the lecturer made use of a microphone as well as visual aids (such as PowerPoint slides and videos integrated into PowerPoint) to support the delivery of his lecture. Each lecture ran for a total of 95 minutes.

3.2 The Subjects

The subjects participating in this study were five Japanese-basis students (three female and two male) studying in the College of Asia Pacific Studies at Ritsumeikan Asia Pacific University (APU) in Japan. They are what might be termed *non-native listeners* of English in that their first language is Japanese. They all grew up and were educated in the Japanese national school system and were admitted to APU as Japanese-basis students. The students were all first-year students who had successfully completed the Intermediate English program at APU and were either studying in the Upper-Intermediate (UIE) program at APU or had recently completed the UIE program. The students volunteered to join the research project as a means of identifying and solving issues that they were experiencing with the content of their lectures and, by way of their participation, to contribute towards the improvement of the educational system at APU.

At the beginning of the lecture course, the researcher visited the lecture hall and, with the permission of the lecturer, distributed a flyer outlining the aims of the research and invited Japanese-basis students to join the project. A total of five students were accepted to join the project, this number being judged sufficient to conduct at least a preliminary investigation of comprehension issues using the methods outlined here. In accordance with university privacy guidelines, the student's identities will remain confidential and they will be referred to herein simply as *the students* or *student 1*, *student 2* etc.

3.3 The Lectures

For the purposes of this study, five lectures were selected at random from the set of 15 lectures mentioned above. The first and final lecture were not included in the selection, since these lectures dealt mainly with administrative matters, and could not be considered representative of the majority of lectures in the course. From the remaining lectures, numbers 3, 7, 9, 11 and 13 were selected for analysis and were recorded using a digital video camera. The researcher was also able to obtain the lecturer's PowerPoint slides and other materials for each of the lectures in question. Prior to the commencement of the recording, the researcher met with the five students and briefed them on their role in the project and the procedures that would follow, which included the students completing a task during each lecture and attending a follow-up meeting soon after each lecture to review their responses to the task, as outlined below.

3.4 Methods of Data Collection

As outlined above, a variety of methods were employed to collect data for this study, including video-recordings and transcription of the lectures, the lecturer's materials (PowerPoint Slides) for each lecture, questionnaires, and group meetings that utilized stimulated recall techniques. The selection of methods was influenced, in part, by Flowerdew and Miller's use of self-rating instruments in their (1992) study of second-language lecture comprehension, and by Fahmy and Bilton's (1990) investigation of listening and note-taking in lectures, in which they utilized recordings and transcriptions of lectures to examine linguistics features of the lecture talk. A brief overview of the methods employed in this study is provided below.

3.4.1 Video Recordings and Transcripts

Consent was obtained from the lecturer to record the lectures using a digital video camera. The camera was positioned near the front of the lecture hall to capture the lecturer and the screen he used to display his PowerPoint Slides (PPT). Including the screen in the recording helped the researcher and students to pinpoint specific points of the lecture that were problematic for comprehension. Problematic portions of the lecture were later transcribed for closer analysis.

3.4.2 Lecture Materials

The researcher directed the students to download and print the lecturer's PowerPoint slides prior to each lecture (the lecturer made these slides available to students via a file exchange folder). Students were directed to refer to these slides during the lecture and to note on the printed slides the time when any comprehension problem occurred. If possible, the students were to also note the nature of the problem (e.g. the student could not understand a word or concept, or the student could not comprehend a part of the lecture because of the speed of the lecturer's delivery). Making note of the time and comprehension problems in this way facilitated the later analysis of the lectures.

3.4.3 Lecture Questionnaires

The researcher created a questionnaire and distributed it to students, in order to elicit details of the comprehension problems experienced by them in the lectures. The questionnaire consisted of a combination of closed and open-ended questions and was delivered on a single page, for ease of completion and viewing. An example of a completed questionnaire is provided in Appendix 1.

3.4.4 Follow-Up Meetings using Stimulated Recall

The students were required to attend a group follow-up session with the researcher. During these sessions, the students submitted their questionnaires, and the researcher reviewed responses with the group. To facilitate the review, the researcher employed *stimulated recall* techniques to pinpoint parts of the lectures in which the students experienced difficulty with comprehension (see Nunan, 1986, p. 94, for a detailed account of stimulated recall techniques and their application). This involved playing back portions of the video recordings, using the times noted by the students on the

questionnaire. The students and the researcher then analyzed the video to identify and clarify the comprehension issues. In some cases, it was necessary for the researcher to contact the lecturer for further clarification or explanation.

3.5 Procedures

As mentioned above, the data collection procedures were designed to elicit issues with lecture comprehension among the five students and were broadly organized into pre-, during and post-lecture activities, as summarized below.

A. Pre-lecture

1. Students downloaded and printed the lecturer's PowerPoint slides and the questionnaire form designed by the researcher.

B. During the Lecture

2. The lecture was recorded by the researcher.

3. Students listened to the lecture and noted comprehension problems on the lecture handout (i.e. the printouts of the lecturer's PPT slides).

C. Immediately after the Lecture

4. The students filled out the questionnaire with reference to the notes that they took during the lecture.

D. Within 24 hours of the Lecture

5. The students attended a follow-up session with the researcher.

By the methods and procedures just outlined, then, it was possible to obtain a detailed account of the various comprehension issues that were experienced by the students in each lecture and to analyze, by means of the video recordings and transcripts, the factors that might have caused these issues. The results of these analyses are summarized in the following sections.

4. Results and Discussion

This section reports on the results obtained from the questionnaires and the follow-up sessions with the students. In general, the results are organized into four sections, following the four questions provided on the questionnaire (see the questionnaire in Appendix 1), beginning with the student's self-rating of their overall comprehension of the lectures, followed in turn by various linguistic difficulties that students were expected to face (see question 2 of the questionnaire), other difficulties (see question 3) and specific times in the lecture when students experienced comprehension difficulties (see question 4).

4.1 Self-Rating of Lecture Comprehension

Table 2 below provides an overview of the comprehensibility of each lecture as rated by the five students. The figures in each column show the overall percentage of the lecture that was understood by

the students. Means and standard deviations for each lecture are provided in the last rows of the table.

Table 2
Lecture comprehensibility rating across the 5 lectures

	Lecture 3	Lecture 7	Lecture 9	Lecture 11	Lecture 13
Student 1	60%	60%	60%	50%	60%
Student 2	60%	60%	65%	60%	60%
Student 3	60%	70%	60%	60%	60%
Student 4	60%	50%	60%	60%	60%
Student 5	40%	50%	50%	50%	50%
Mean	56.0%	58.0%	59.0%	56.0%	58.0%
SD	6.8%	6.3%	4.1%	4.1%	3.4%

As Table 2 shows, the five students reported that they understood just over half of the contents of each lecture. The mean comprehensibility figures are in the range of 56% to 59% with standard deviations in the range of three to seven percent, indicating a high degree of consistency among the five students in terms of comprehension across the lectures. These figures also indicate that that the students had difficulty comprehending large portions of each lecture and up to half of each lecture (50%) in some instances. By way of comparison, a study by Flowerdew and Miller (1992) reported that students in the TOEFL 480-540 range at a university in Hong Kong (comparable to the students in this study, whose scores were in the 470-520 range) were able to comprehend 65% to 75% of their English-medium lectures.

4.2 Self-Rating of Linguistic Aspects of the Lectures

The following sections provide an overview of the results obtained from student rating of the linguistic aspects of the lectures (see question 2 of the questionnaire). For ease of reference, the results for each item are presented in separate sections organized by linguistic feature and are summarized by way of tables. Mean scores and standard deviations are provided for the results in each lecture. As shown in the example questionnaire in Appendix 1, students were asked to rate the difficulty of comprehension for each of the linguistic items using a Likert-type scale, as follows:

1 = I could not understanding anything (zero)
2 = I could understand about 25%
3 = I could understand about 50%
4 = I could understand about 75%
5 = I could understand about 100%

4.2.1 The Lecturer's Accent

Table 3 below summarizes the figures for the comprehensibility of the lecturer's accent. As the table shows, the mean and standard deviations for each lecture are consistent, with a mean of 4.4 for most lectures and a standard deviation of 0.4. These results suggest that the lecturer's accent did not present a significant problem for the students.

Table 3

Rating of the lecturer's accent

	Lecture 3	Lecture 7	Lecture 9	Lecture 11	Lecture 13
Student 1	4	4	4	4	4
Student 2	5	5	5	5	5
Student 3	4	4	4	4	4
Student 4	4	5	5	5	5
Student 5	3	4	4	4	4
Mean	4.0	4.4	4.4	4.4	4.4
SD	0.6	0.4	0.4	0.4	0.4

4.2.2 The Lecturer's Speed of Speaking

The figures for the lecturer's speed of speech are presented in Table 4 below. Compared with accent, the speed of speaking presented serious comprehensibility challenges for the students. Mean scores for the five lectures are in the range of 2.4 to 3.3 and standard deviations are fairly stable at 0.3 for three of the lectures and 0.7 for the other two, indicating that all five students rated speed of speech as problematic for comprehension (as the scale in section 4.2 above shows, lower scores indicate lower comprehensibility). Notably, the second lecture (i.e. Lecture 7) appeared to be particularly problematic, although it was not possible to determine the exact reasons as to why the students gave speed of speech a low rating in this lecture.

Table 4

Rating of lecturer's speed of speaking

	Lecture 3	Lecture 7	Lecture 9	Lecture 11	Lecture 13
Student 1	2	2	3	3	3
Student 2	3	3	3	3	3
Student 3	4	3	2	4	4
Student 4	3	2	3	2	3
Student 5	2	2	3	2	3
Mean	2.8	2.4	2.8	2.8	3.2
SD	0.7	0.4	0.4	0.7	0.4

4.2.3 Length of the Lectures

As with speed, the length of the lectures returned consistently low scores across all five lectures. As Table 5 below shows, mean scores are in the range of 2.6 to 3 and standard deviations are steady at 0.4 (with 0 for Lecture 7).

Table 5

Rating of the length of the lectures

	Lecture 3	Lecture 7	Lecture 9	Lecture 11	Lecture 13
Student 1	2	3	2	2	2
Student 2	2	3	3	3	3
Student 3	3	3	3	3	3
Student 4	3	3	2	3	3
Student 5	3	3	3	3	3
Mean	2.6	3.0	2.6	2.8	2.8
SD	0.4	0.0	0.4	0.4	0.4

4.2.4 Understanding Topics

As Table 6 below shows, the understanding of lecture topics returned particularly low scores (i.e. low comprehensibility) with mean scores in the range of 2.4 to 2.8 and standard deviations ranging from 0.45 to 0.73. Excluding the rating of 4 given by Student 4 in Lecture 3, the results indicate that the topical material was very challenging for the students. When questioned about this outcome, the students reported that most of the topics were unfamiliar to them, and they had not encountered these topics in Japanese before. Examples of problematic topics are discussed in the following sections (see Section 4.4 below, - specific problems with comprehension).

Table 6

Rating of topics in the lectures

	Lecture 3	Lecture 7	Lecture 9	Lecture 11	Lecture 13
Student 1	2	3	2	2	2
Student 2	2	3	3	2	3
Student 3	2	2	3	2	2
Student 4	4	2	3	3	3
Student 5	3	2	3	3	3
Mean	2.6	2.4	2.8	2.4	2.6
SD	0.73	0.45	0.37	0.45	0.45

4.2.5 Understanding Vocabulary

Of all the linguistic factors investigated, vocabulary appeared to present the greatest challenge for comprehensibility in the lectures. As Table 7 shows, mean scores for Lectures 3 and 11 are 2.2 (standard deviation 0.37), meaning that all five students could comprehend roughly only 25% of the vocabulary that they were exposed to in those lectures. Figures for the other lectures are not much higher, with means of 2.6 in Lectures 7 and 13 and 3 in Lecture 9. In the follow-up meetings, the students reported comprehension difficulties with verbs and nouns used in the lectures (especially nominalization), in addition to the topic-related vocabulary mentioned in section 4.2.4 above.

Table 7

Rating of vocabulary in the lectures

	Lecture 3	Lecture 7	Lecture 9	Lecture 11	Lecture 13
Student 1	2	2	2	2	2
Student 2	2	3	3	2	3
Student 3	2	2	4	2	2
Student 4	2	3	3	2	3
Student 5	3	3	3	3	3
Mean	2.2	2.6	3.0	2.2	2.6
SD	0.37	0.45	0.58	0.37	0.45

4.2.6 Understanding Explanations

Table 8 below presents the ratings for the difficulty of explanations in the lectures. Figures are notably low, in the range of 2.4 to 2.6 (and low standard deviations of 0.45 for the most part), suggesting that the lecturer's explanations were problematic for comprehension. Possible reasons for these results will be discussed in section 4.4 below.

Table 8

Rating of explanations in the lectures

	Lecture 3	Lecture 7	Lecture 9	Lecture 11	Lecture 13
Student 1	2	2	3	3	2
Student 2	3	2	3	2	3
Student 3	3	2	2	2	2
Student 4	3	3	3	4	3
Student 5	2	3	2	2	3
Mean	2.6	2.4	2.6	2.6	2.6
SD	0.45	0.45	0.45	0.73	0.45

4.2.7 PowerPoint Slides

Finally, the results for the comprehensibility of the lecturer's PowerPoint slides (PPT) are shown in Table 9 below. Mean scores are slightly higher than for the linguistic features presented above (in the range of 3.0 to 3.6), with standard deviations low but showing some variation between lectures (from 0.45 to 0.73). These results indicate that students could comprehend just over half of what they read on the PPT slides.

Table 9

Rating of the lecturer's PowerPoint slides

	Lecture 3	Lecture 7	Lecture 9	Lecture 11	Lecture 13
Student 1	3	3	2	3	3
Student 2	4	3	4	3	4
Student 3	3	2	4	4	4
Student 4	4	4	4	4	4
Student 5	2	3	3	4	3
Mean	3.2	3.0	3.4	3.6	3.6
SD	0.68	0.58	0.73	0.45	0.45

4.3 Other Difficulties

Table 10 below provides an overview of other difficulties identified by students in the lectures (see item 3 of the questionnaire in Appendix 1). In general, students listed one or two difficulties only or none at all (see responses such as *no problems* below).

Table 10

Other difficulties reported in the five lectures

Lecture #	Difficulties
3	When we had a group discussion, I didn't know what to do The speed of the lecturer Technical vocabulary
7	I didn't understand the question he asked us in class The conversation between the professor and students
9	Sometimes I didn't understand the lecturer's questions The speed of the lecturer
11	The lecturer's questions No problems
13	I couldn't catch what the other students asked the professor No problems

As the table shows, students frequently experienced problems with unpredicted events in the lectures, such as question and answer exchanges between the lecturer and the students, and/or discussions that arose from questions raised in the lecture. Some responses emphasized the difficulties that the students faced from the speed of the lecturer's speech, although this factor had already been identified in question 2 of the questionnaire. Other responses indicated that the students felt that there were no other problems, suggesting perhaps that the list of factors in question 2 sufficiently covered the main areas of comprehension difficulty.

4.4 Specific Problems with Comprehension

Table 11 below provides examples of specific problems that were noted by students, and the times that they occurred in the lectures (see item 4 of the questionnaire). The examples selected here are those in which a majority of the students (i.e. 3 or 4 out of the group of five students in the study), identified the same or similar problem.

Table 11

Specific problems and times identified in the five lectures

Lecture #	Time	Problem
3	15:23	The radical perspective – what is it? (4 students)
7	15:46	Explanation of the "constructivist view the state" (3 students)
9	14:54	I don't understand the "collective goods" (3 students)
11	14:42	What is the meaning of "comparative advantage"
13	-	(No specific problems reported)

In each instance, these problems were related to the comprehension of new topics or concepts presented in the lectures, a phenomenon that is consistent with the results reported in the literature (see Flowerdew & Miller, 1992, for instance). Additionally, students reported that the elaboration of concepts provided by the lecturer were frequently difficult to follow. The students also reported that the issue was not only a matter of the accent or speed of the lecturer's speech, but also the length of the explanation. Examining the video transcripts for these types of elaborations, it is possible to observe that linguistically, they are organized into multiple layers of discourse structure. Table 12 below provides an example of how the explanation of the *radical perspective* (see the table above), is structured in this way. The actual text of the span in question is presented in the table, and the discourse levels are shown in parentheses and by indentation.

Table 12
Example of complex discourse structuring in lecture 3

[Level 1 Theme]
so what is the Radical perspective what did Marx say

[Topical Digression 1]
now I'm going to simplify things I know that somebody was reading Marx up here and ah maybe you know more than I do about Marx philosophy and that's ok maybe you can intervene and tell me but I'm going to simplify it just for this time

[Level 2 Theme]
so one of the things that Marx talked about was this idea of economic determinism

[Level 3 Theme]
ah the idea that sort of the nature of economic systems will move from one system to another just naturally you don't have to actually do anything to move it from one type of economic system to the next

[Level 3 Theme]
ah he said it will start with this feudalistic system that existed you know whenever it existed in Europe

[Level 4 Theme]
this sort of central system with ah periphery and you know the serfs around castles those kinds of things

[Level 3 Theme]
and then it will move into this sort of ah capitalist system

As the example above shows, the theme or topic (that is, the radical perspective) is developed across 4 levels of discourse structure. The lecturer begins by introducing the notion of the radical perspective, and then begins to elaborate on it by way of a description of economic determinism (see the underlined Level 2 theme), which he then goes on to define (see the two Level 3 themes which immediately follow), and then provides a further description of the feudalistic system (see the Level 4 theme underlined) and so on. Additionally, near the beginning of this sequence, the lecturer briefly digresses to address the audience directly about their knowledge of Marxism, adding an additional element of complexity into the sequence.

This excerpt supports the observations on thematic structuring noted in section 2.1 above, and suggests that the phenomenon of deep thematic structuring in lectures may contribute to the comprehension problems faced by non-native listeners in such contexts. In addition to the speed of delivery and processing the text at a grammatical and lexical level, listeners are also required to process extended thematic sequences at a discourse level. The additional demands of this type of discourse-level processing, then, may explain why elaborations of new concepts were especially challenging for the students in this study. Further investigation of this and other phenomena (such as the topical digressions mentioned above) are beyond the limits of the present study, but do suggest some interesting avenues for further research into the comprehension difficulties faced by non-native listeners in English-medium lectures.

5. Implications of the Findings

While the findings presented above must be considered preliminary, they do suggest some possibilities for improving the comprehension of Japanese and other non-native users of English in university lectures. These findings, for instance, might form the basis of a set of diagnostic tools for lecturers to review their own lectures and to consider the issue of comprehensibility. Alternatively, the findings may help to inform the design of language teaching materials that could be deployed to aid students in improving their English knowledge and skills for academic lectures.

For lecturers, the obvious factors to consider would be speed of delivery and the presentation of course-related topics and explanations of them, since the findings showed that these aspects of the lectures were problematic for the five students who participated in this study and are likely to be problematic for other non-native users of English attending lectures. Solutions to these issues might be obtained by reducing the speed of speech or by dividing the lecture into shorter spans with pauses between them. The addition of glossaries of key-terms and concepts may help to resolve the comprehension difficulties with the presentation of course-related topics, and reducing the length of explanations, or clearly signaling the beginning and end of explanations may go some way toward addressing issues posed by extended elaborations of the topical material.

In terms of language teaching materials, it may be possible for language teachers to design glossaries of key terms in coordination with lecturers, and to create activities that direct student's attention to identifying specific topics in lectures and how these are elaborated. It might also be useful to look at the way transition points are managed in lectures, for example, when lecturers shift from talking about lecture administration to the substantive content of the lecture, or when they shift back and forth between lecture-related topics and non-lecture-related topics (i.e. digressions or asides). It would also be prudent to establish a corpus or *bank* of lectures that can be utilized for additional listening and/or language training.

6. Conclusion

In conclusion, this study sought to identify the key linguistics factors that may affect the comprehension of English-medium university lectures by Japanese users of English. The findings presented appear to be in line with the various comprehension issues identified in the literature on academic lectures. As outlined in section 4 of this study, the lecturer's speed of speech, presentation of course-related topics, extended elaborations of course concepts and the length of the lectures were especially problematic for the five Japanese participants in this study, and therefore, are likely to be problematic for other non-native users of English as well.

Due to the limited scale and scope of this study, these findings must be treated as preliminary. Furthermore, the methodology employed in this study was previously untested, so additional application and testing of the methodology would be desirable. Enhancement could also be made to the data collection instruments, for example by narrowing the focus of the questionnaire to investigate individual factors in more detail, or by expanding the study to include a larger number of lectures and subjects.

This study does suggest some interesting possibilities for future research in the area of lecture comprehensibility. For instance, it would useful to explore whether a decrease in a lecturer's speed of speech leads to an increase in comprehension. Similarly, it may be possible to investigate the effects on comprehension of simplifying explanations of key concepts or dividing the lecture into a series of shorter spans. Such projects will require a longitudinal approach and should be conducted in coordination with on-going curriculum development projects at APU.

References

Bilbow, G. (1989). Towards an understanding of overseas students' difficulties in lectures: A phenomenographic approach. *Journal of Further and Higher Education, 13*(3), 85–99.

Blackwell, J. (2011). *The Text Compositional Architecture of University Lectures: An Exploration of Genre and Periodicity in Spoken Academic Discourse* (Unpublished doctoral dissertation). The University of Birmingham. U.K.

Briguglio, C. (2000). Language and Cultural Issues for English-as-a-Second/Foreign Language Students in Transnational Educational Settings. *Higher Education in Europe, 25*(3), No. 3, 425-434.

Dudley-Evans, T. (1994). Variations in the discourse patterns favored by different disciplines and their pedagogical implications. In J. Flowerdew (Ed.), *Academic listening: Research Perspectives* (pp.146-158). Cambridge: Cambridge University Press.

Fahmy, J., & Bilton, L. (1990). Listening and note-taking in higher education. Ericdb Document No. ED366189.

Griffiths, G. (1992). Speech Rate and Listening Comprehension: Further Evidence of the Relationship. *TESOL Quarterly, 26*(2). 385-390.

Flowerdew, J. (1994). Research of relevance to second language lecture comprehension—an overview. In J. Flowerdew (Ed.), *Academic listening: Research Perspectives* (pp.7-29). Cambridge: Cambridge University Press.

Flowerdew, J. & Miller, L. (1992). Student Perceptions, Problems and Strategies in Second Language Lecture C1omprehension. *RELC Journal, 23*(2), 60-80.

Hansen, C. (1994). Topic identification in lecture discourse. In J. Flowerdew (Ed.), *Academic listening: Research perspectives* (pp. 131-145). Cambridge: Cambridge University Press.

Lebauer, R. (2000). *Learn to Listen, Listen to Learn: Academic Listening and Note-Taking* (2nd Edition). White Plains NJ: Prentice Hall Regents.

Mulligan D., and Kirkpatrick, A. (2000). How Much Do They Understand? Lectures, students and comprehension. *Higher Education Research & Development, 19*(3), 311-335.

Nunan, D. (1986). *Research Methods in Language Learning.* Cambridge: Cambridge University Press.

Rost, M. (2002). *Teaching and Researching Listening.* Harlow: Pearson Education Ltd.

Tauroza, S., & Allison, D. (1994). Expectation-driven understanding in information systems lecture comprehension. In J. Flowerdew (Ed.), *Academic listening: Research perspectives* (pp. 35–54). Cambridge: Cambridge University Press.

Young, L. (1994). University lectures – macro-structrue and micro-features. In J. Flowerdew (Ed.), *Academic listening: Research perspectives* (pp. 159-176). Cambridge: Cambridge University Press.

Appendix 1: Example of a completed lecture questionnaire

Name: Student 1 **Lecture 7 Review** (2016/7/1, Period 4)

1. How much of the lecture did you understand? 60 %

2. What was difficult about the lecture?

	0	Very difficult	Sometimes difficult	Not so difficult	No problem
Lecturer's accent	1	2	3	(4)	5
Lecturer's speed of speaking	1	(2)	3	4	5
Length of the lecture	1	(2)	3	4	5
Understanding topics in lecture	1	2	(3)	4	5
Understanding vocabulary in the lecture	1	(2)	3	4	5
Understanding explanations	1	2	(3)	4	5
Understanding the PPT	1	2	(3)	4	5

1 = I could not understanding anything (zero) 2 = I could understand about 25%
3 = I could understand about 50% 4 = I could understand about 75%
5 = I could understand about 100%

3. Did you have any other difficulties with the lecture (not mentioned above)?
I didn't understand the question he asked us in class

4. How many times did you have a problem understanding something in the lecture? Write the times and problems below.

Time	Problem
15:18	*I didn't understand the topic "Legal Criteria are not Absolute"*
15:23	*I'm still not sure about the relationship between State and Nation*
Around 15:40?	*View of the State?*
16:09 ~	*What does "Power Refined" meaning?*
16:22	*I didn't understand the contents*