

Evaluating the Role of Discourse Markers and Other Enabling Factors in Academic Listening Comprehension

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The present study focuses on the analysis of a set of academic lectures in the field of social science, one of the four sets of lectures developed in a previous study by Miciano, Gocheco, Bensal, and Abatayo (2009). The objective of the present study is to investigate the possible effects of discourse markers and other variables such as prior knowledge, test and lecture difficulty on lecture comprehension. The materials include two lecture versions for each topic - one with linguistic/discourse markers and one without. The listening test was taken by a total of 51 undergraduate and graduate students. The exploratory study shows no significant effect in the listening comprehension of academic lectures with or without discourse markers. Other factors that might explain the results, such as prior knowledge, lecture flow, test and lecture difficulty, were also examined in the present study.

Keywords: academic listening comprehension, discourse markers

Listening plays an important role in tertiary education, considering that lectures, seminars, discussions, and debates play a key role in the academe. Despite its academic importance, very minimal research has been done on listening. In most cases, the strategies in reading are assumed to be applicable to listening (O'Malley, Chamot, and Kupper, 1989 in Flowerdew, 1994). This may be due to the notion that reading and listening share numerous characteristics such as:

“Both require receptive language processing, which involves decoding and comprehension. Thus, both processes use two basic knowledge sources, language knowledge and world knowledge (e.g., topic, text structure, schema, and culture) for purposes of comprehension. Like reading, listening also entails two major processes, top-down and

bottom-up, in applying such knowledge to the input during comprehension. Both listening and reading necessitate processes that are flexible and adaptable in respect to cognitive demands (Danks & End, 1987), and the listener, like the reader, constructs, in memory a mental representation of what has been comprehended. Finally, the success of both listening and reading is influenced by other factors, such as metacognitive strategies and motivation (Samuels, 1987)” (Vandergrift, 2006, p. 9, as cited in Miciano et al., 2009).

Apart from these common skills, listening has distinctive features that may be categorized in terms of “real-time processing, phonological and lexicogrammatical features” (Buck, 1991; 1992 in Flowerdew, 1994, p. 10). It is said to be processed in real-time because it is processed as the idea is uttered. As reading and writing may be described as recursive, listening may otherwise be described as “ephemeral” (Flowerdew, 1994, p.10). The listener cannot dwell nor put the reading material aside and attend to it again at a later time. The phonological features may distinctly apply to listening although the lexicogrammatical features must be distinguished from those that may be found in reading. Listening to spoken texts requires an awareness of lexicogrammatical features that may include colloquial speech, discourse fillers, and other remedies for false starts or hesitations.

Goh (2002) identifies three types of text features that may influence listening: acoustic features (phonological modifications and speech rate); discourse features (organization of information, topic, vocabulary, sentence length, register, etc); and text type (broadcasts, lectures, conversations).

As English has become an important language of the world, a considerable number of researchers have investigated the features of the language that ESL/EFL learners may employ in listening to lectures in the academe.

Chaudron, Loschky, and Cook (1994 in Flowerdew, 1994) found that successful recall was related to lecture note quality and training in note-taking. There were 98 students (predominantly from Asian and Pacific backgrounds) who participated in this study. Listening comprehension was measured by multiple-choice and cloze listening tests. The researchers of the study also recognized the value of the clarity of structure and presentation of the lecture.

Another important feature in listening is the use of rhetorical cues known as discourse markers. Discourse markers (DM) are defined by Shiffrin (1987) as elements that define units of talk. According to Flowerdew (1994), the rhetorical pattern of a discourse, such as lectures, is signaled by connectives and discourse markers that make a body of information coherent, easily understood and remembered. Hansen (1994 in Miciano et al., 2009) defines them as “organizational signal[s] that appear ... at the beginning and/or end of a unit of talk and [are] used by the speaker to indicate how what is being said is related to what has already been said” (p.16). Therefore,

discourse markers help listeners follow turns in a lecture and help them understand the relationship of ideas between sentences and between segments of talk.

In a study on academic listening comprehension, Chaudron and Richards (1986) have analyzed the use of discourse signals to mark shift in ideas, structure, and organization of information in a lecture and found the facilitative effect they have on academic listening comprehension. In this study, Chaudron and Richards' differentiated discourse markers into macro-markers, or markers of rhetorical moves, and micro-markers, which are lower-level signals of topics and topic relationships. Their study found that macro-markers led to better recall of the lecture.

In a similar study, Dunkel and Davis (1994 in Flowerdew, 1994) investigated the differences between the lecture information recall of first-language (English as first language) listeners and ESL (English as a second language) listeners based on the use of rhetorical signal devices uses in the lectures. This result of this study contradicted the findings of Chaudron and Richards (1986) that rhetorical cues such as discourse markers have a facilitative effect on listening comprehension. According to the researchers, the possible causes of the differences in their findings may be attributed to the following: first, the narrative and comparison/contrast structures of their texts may have provided adequate cues thereby rendering the signaling devices useless; second, they used a different type of test; third, they allowed their participants to refer to their notes during the recall period.

Several other studies have investigated the use of discourse markers in academic lectures. One of these studies is that of Eslami and Eslami-Rakesh (2007). The participants of the study were 72 EAP students at Najafabad Azad University who were exposed to two versions of a lecture, one with discourse markers and the other without. Results showed the facilitative effects of discourse markers in listening comprehension. Likewise, Smit's (2006) study showed that awareness of discourse markers had a positive impact on academic lecture comprehension. The experimental group that underwent a training program on the recognition of discourse markers performed significantly better than the control group.

There is a perception that they are important in listening to lectures, as shown in other studies on ALC. For example, in Harper's (1985, as cited in Miciano et al., 2009) research which studied the relationship of micro- and macro-skills in academic listening comprehension, the Test of Academic Listening Comprehension (TALC) developed for foreign-student participants included these measures of four micro-skills: (1) inferring the meaning of unfamiliar vocabulary from context; (2) recognizing the function of referential devices; (3) recognizing the functions of conjunctive devices; and (4) recognizing the function of transition devices.

Significance of the Study

Most universities do not have any training programs that might help students, especially new international students who need to develop their academic listening comprehension (ALC). There is also a dearth of institutional academic listening comprehension tests in most universities in the Philippines. Gathering data on which to base the design of a training program or an ALC test is therefore necessary. Relevant information such as the role of discourse markers and the other factors that may affect ALC are valuable data in developing strategies in ALC for both the learner and the teacher.

The primary objective of this research is to explore the impact of discourse markers and other enabling factors in ALC in English. Specifically, the study aims to answer the following research questions:

1. Do discourse markers have an effect on lecture comprehension?
2. Do other factors such as prior knowledge, lecture flow, test and lecture difficulties have an impact on academic listening comprehension?

Method

Materials: Lecture and Listening test

The materials used in the present study were identical to those used in the original study of academic listening comprehension by Miciano et al., (2009). The present study, however, focuses and extends the investigation of discourse markers and other factors that affect ALC based on the lecture entitled 'Gender', one of the four sets of lecture. The 'Gender' lecture represented the field of social sciences, while the other lectures represented other academic fields such as mathematics, natural sciences, and humanities.

Two versions of a lecture were prepared -- one with discourse markers and conjunctions and transitional devices (Lecture 1), and one without (Lecture 2) -- for a total of eight lectures. Lecture 1 was first prepared and then the discourse markers were deleted to prepare Lecture 2. In deleting these markers, the team made sure that clarity was not sacrificed. Hence, the same information was covered in both lecture versions, the only point of difference being the discourse markers in Lecture 1. Lecture 1 was between 700-800 words and Lecture 2 was between 600-700 words.

As followed by the research team in the original study, the topic was selected based on the following criteria: (1) The topic must be included in a basic or introductory major or GE course offered at DLSU. (Some syllabi from GE and basic courses were examined for this purpose; (2) The topics must not be too simple nor too difficult in terms of content and language for undergraduate and graduate students, both local and international.

For the preparation of the materials, the following procedures were followed in the original study (Miciano et al., 2009):

- (1) Preparation of the lectures. The syllabi of several GE and basic courses were studied and some references were borrowed/downloaded to survey possible lecture topics. The lectures were initially evaluated for clarity by the team.
- (2) Preparation of the test. The “lecturer” or “scriptwriter” had to prepare a total of 35 questions based on the scripted lecture items: 5 on vocabulary, 5 on references, 5 on conjunctions, 5 on transitional devices, 5 on discourse markers, 5 on main ideas and details, and 5 on inferences/applications.
- (3) A multiple choice oral test was prepared. To aid recall of the options, each participant was given a scratch paper on which the listener/participant could take down notes.
- (4) Content validation of the lectures and tests. After their initial evaluation by the team, the lectures and the tests were given to the content specialist (a retired professor of psychology) for evaluation of accuracy/correctness of content and representativeness of the questions.
- (5) Language validation of the lectures and tests. After the content experts approved the lectures and tests, the materials were given to a language expert at the DEAL (a retired professor of linguistics) to examine the materials’ clarity, coherence and grammatical correctness. Further revisions were made until all the materials passed the evaluation of the language expert.
- (6) Taping of the listening test. One member of the team - Ms. Bensal - read aloud all the lectures, each of which was taped at the English Language Laboratory and subsequently reformatted in CD at the University Library. Ms. Bensal read the lecture at a slower-than-normal-lecture-rate in consideration of the foreign students who would participate in the study. The lecture was read once but test items were read twice and one minute/item was given to the participants to recall the options and answer the question. (p. 13).

Instruments

The test focused on the literal and higher levels of comprehension, in addition to the linguistic dimension of the listening process. More specifically the following micro- and macro-skills were tested: (1) Getting the meaning of unfamiliar words from context; (2) Identifying the referents of referential devices; (3) Recognizing the function of conjunctions; (4) Recognizing the function of transition devices; (5) Recognizing discourse topic markers

Micro-skills (Harper, 1983; Eslami & Eslami-Rasekh, 2007).

Based on the aforementioned skills as reference, the academic listening tests consist of seven sections of five multiple-choice questions each, for a total of 35 items:

Test A is on low-frequency vocabulary used in the lecture;

Test B focuses on the use of referents;

Test C is on conjunctions;

Test D on transitional devices;

Test E is on discourse markers;

Test F is about the lecture's main ideas and supporting details;

Test G is on inferences and applications of the ideas in the lecture.

Tests C, D, and E together were used as the measure of knowledge of discourse markers;

Test F and G were used as indicators of lecture comprehension.

For the English proficiency test, a grammar online test was used (<http://www.english.language.webpark.pl/test/htm>). The test consists of 35 items on grammar, classified as Basic, Advanced, and Intermediate levels, and 15 items on reading.

The Respondent Profile Sheet that each participant answered after the test asked for the following information: degree program, previous knowledge of the lecture topic, perception of the lecture difficulty, lecture flow, and test difficulty (Easy, Moderate, Difficult). Data from the Respondent Profile were used to explain the results of the statistical test.

Participants

A total of 51 undergraduate and graduate students, both local and international, participated in the study. These participants were randomly assigned to one of two groups - one group listened to Lecture 1 (with discourse markers) and the other to Lecture 2 (no discourse markers). The undergraduate students were mostly freshmen and sophomores; the graduate students were mostly in the first year of graduate studies.

Twenty six (26) undergraduate (UG) students participated in the Gender Listening Test. Half of the group listened to Gender 1, the test with discourse markers, while the other half listened to Gender 2, the test without discourse markers. The participants in Gender 1 were all Filipinos, except for one Chinese. The participants who listened to Gender 2 were composed of 10 Filipinos, two Koreans, and one American. On the other hand, there were 25 graduate (G) students who listened to the same tests - 12 listened to Gender 1, while 13 listened to Gender 2. The Gender 1 graduate participants were composed of five Filipinos, two Koreans, three Chinese, one American, and one student with an unspecified nationality. On the other hand, the Gender 2 graduate participants were all Filipinos.

Out of a total of 51 participants, 47 or 92% use English as L2. The results of the grammar test show that the mean score for language proficiency of the UG Gender 1 participants is 38.69 while the UG Gender 2 participants' mean score is 38.76, which means that their language proficiency does not significantly vary. The same pattern is shown in the results of the graduate participants, with 39.33 for Gender 1 and 38.92 for Gender 2.

Procedure

Administration of the listening test. The tests were administered to the two sets of participants: two Undergrad Groups and two Graduate Groups.

The lecture and the listening test, as designed, took at least 37 minutes to finish. The lecture was about 6 minutes, the test took about 30 minutes, and the participants spent about 1 min to fill in a brief Respondent Profile Sheet after the test. In addition to this, the participants needed to take a grammar test, which took about 20 minute for Filipino participants to finish, and at least about 30 minute for foreigners to finish. All in all, the lecture and the listening test and the grammar test took under an hour for Filipinos and a little over one hour for most foreigners. The listening session started with an explanation of the purpose of the grammar and listening test. The participants were assured of the confidentiality of the test results. After the test, the participants accomplished the Respondent Profile Sheet.

For the undergraduate students, the grammar test was administered on a different day from the listening test because of the shortness of the class session. For the graduate students, the grammar and listening tests were administered in one session.

Data Analysis. A summary of the results was prepared in Excel format and analyzed with the help of a statistician. Since two different sets of participants have been used in each investigative condition, the independent t-test was used.

The alpha level used was 0.05, hence p values below the alpha level are statistically significant. Pearson r correlation was computed to check the direction and strength of the relationships of DM and F, DM and G, and F and Grammar scores, where DM or discourse markers are indicated by Tests C,D, E scores; F is the test on main ideas and details score; G is the test on inference and application score; and Grammar is the language proficiency test score.

Results and Discussion

This section discusses the test results of the two groups that listened to the Gender Lecture Listening tests. The other three sets of tests were discussed in a previous study (Miciano et al., 2010).

As mentioned earlier, there were two treatment groups: group 1 listened to the lecture with DM or discourse markers while group 2 listened to the lecture without discourse markers. Both groups, however, took the same test.

Undergraduate (UG) Gender Lecture Listening Test

The results of the t-test show that there is no significant difference between the test results of the two groups of UG Gender 1 and UG Gender 2 ($p = .743$), as shown below in Table 1. This indicates that discourse markers, as measured by the CDE set of test, did not have an effect on lecture comprehension, as manifested in FG set of tests, in the study.

Table 1

Independent t- test: A Comparison of CDE scores of UG Groups with and without DM

F	P value	t	df	P value (2-tailed)	Mean Difference	SE Difference	95% Confidence Interval of the Difference	
							Lower	Upper
1.062	0.313	.332	24	.743	.23	.69	-1.21	1.67

Note. Alpha Level = 0.05, significant difference if $p < 0.05$; Data Analysis Software Used: SPSS v.12

To see the relationship between the different variables in the tests, the correlation was computed. The statistics on the correlation between the discourse markers (DM), as tested in C, D, and E, comprehension (F, G), and Gram (grammar or language proficiency) are presented in Table 2.

Table 2

DM x F, DM x G, and FG x Gram Correlations: Gender (undergraduate)

Treatment	CDE x F	Desc'n	CDE x G	Desc'n	FG x Gram	Desc'n
Gender 1	0.512623	Positive mod'ly strog	0.016305	Positive weak	0.460818	Positive mod'ly weak
Gender 2	0.578109	Positive mod'ly strong	0.674951	Positive mod'ly strong	0.670091	Positive mod'ly strong

Based on the statistics presented in Table 2, the correlations between the variables in UG Gender 1 (with discourse markers) are positive but slightly varied in the degree of correlation. The Gender 1 correlation test made

between C,D, E (or DM collectively) and F (main ideas and supporting details) manifest a positive and moderately strong correlation with comprehension (F).

Similarly, Gender 2 lectures (without DM) show the same result for the same test, positive and moderately strong.

The difference in results lies in the succeeding tests. In the correlation test between CDE and G (inferences and applications) of Gender 1 lectures (with discourse markers), the correlation is positive but weak, whereas the Gender 2 (without discourse markers) test shows a positive and moderately strong correlation.

The same tests (C, D, E) show a positive but weak correlation between discourse markers (DM) and comprehension (FG or the test on inference and application). For the Gender 1 lectures, the results in Table 2 show a positive but moderately weak correlation. while Gender 2 lectures (without DM), the tests show positive and moderately strong correlation with FG, and Grammar. A similar result is found in the correlation of comprehension (FG) and grammar (Gram). The test of FG and Gram of Gender 1 participants manifests a positive but moderately weak correlation, while the Gender 2 (without discourse markers) show a positive and moderately strong correlation.

This far, the results show no significant improvement in comprehension as far as the use of discourse markers in lectures is concerned, since it may be observed that only the Gender 2 lectures (without discourse markers) correlation results manifest a positive and moderately strong correlation between DM and G (inferences and application), while Gender 1 results exhibit a positive but weak correlation between comprehension results and other variables shown in the tests

Further investigation of the other variables found in the exit survey results may predict student performance in academic listening comprehension. These variables in the exit survey questionnaire include prior knowledge, lecture flow, lecture and test difficulty, as may gleaned from the summary presented in Table 3.

Table 3
Summary of Exit Survey Results: UG Gender

Group	Prev. Knowledge of Topic (%)			Lecture Difficulty (%)				Lecture Flow (%)				Test Difficulty (%)			
	Yes	No	NA	E	M	D	NA	E	M	D	NA	E	M	D	NA
G1	8	4	1	3	9	0	1	4	7	1	1	2	7	3	1
%	61.5	0.8	7.7	23.1	69.2	0	7.7	30.8	53.8	7.7	7.7	15.4	53.8	23.1	7.7
G	7	6	0	4	9	0	0	6	7	0	0	2	10	1	0
%	53.8	46.2	0	30.2	69.8	0	0	46.2	53.9	0	0	15.4	76.9	7.7	0

Note. G2 (Gender 2 - without discourse markers) M - Moderate NA - No answer

The majority (61.5%) of UG Gender 1 participants had previous knowledge of the topic. Similarly, a majority of G2 participants, although slightly lower than G1, exhibit a high percentage of schema (53.8%) on the topic.

For Lecture Flow, it may be gleaned from Table 3 that G1 and G2 has similar results in the Moderate answers but there are noticeable differences lie in the E (Easy) and (D) Difficult results. G2 has a higher percentage (46.2%) of participants who found the lecture flow easy and none found it difficult. On the other hand, a lower percentage (30.8%) of G1 participants found the lecture flow easy and 7.7 % found it difficult. Thus, it may observed that G2 generally perceived lecture flow more positively than the G1 participants.

In terms of test difficulty, a higher percentage of G1 participants found the test difficult (23.1%) as compared to G2 participants, which registers at 7.7% in Test Difficulty. Again, based on these percentages, the G2 participants perceived the tests less difficult as compared to the perception of G1 participants.

In summary, the UG Gender 2 (without discourse markers) correlation results exhibit a positive, moderately strong correlation between the other variables DM and F and G. As seen in the exit survey results, in the absence of discourse markers, the participants probably had to rely on their previous knowledge of the topic, which the majority or 53.8% had. Despite the absence of discourse markers, none of the UG Gender 2 participants answered D (difficult) for Lecture Difficulty and Lecture Flow This may suggest that schema could have played a more critical role in lecture comprehension than DM in the results of Gender 2 participants.

Graduate

As in the UG Gender test, the results of the t-test in the Graduate Gender test show no significant difference between Gender 1 and 2 results ($p = .601$).

The statistics on the correlation of discourse markers (DM), comprehension (F and G), and language proficiency (Gram) are presented in Table 4.

The two groups manifest mostly positive but mixed degree of correlations between CDE, F, and G, which indicates that the presence or absence of discourse markers had no impact on lecture comprehension since both groups exhibit similar performance in their test results.

Table 4
DM x F, DM x G, and FG x Gram Correlations: Gender (graduate)

Group	CDE x F	Desc'n	CDE x G	Desc'n	FG x Gram	Desc'n
Gender 1	0.3188	Positive mod'ly weak	0.507833	Positive mod'ly strong	0.345271	Positive mod'ly weak
Gender 2	0.186853	Positive weak	0.15269	Positive weak	-0.05683	Neg, very weak

Note the only negative correlation in Table 4 in the G2 group (graduate). There is a negative and very weak correlation between FG (comprehension) and Gram (grammatical) test results. This means that, for G2, comprehension is not dependent on the grammatical competence of the participants and vice versa.

As shown in Table 5, there is not much difference between the two groups in terms of previous knowledge of the topic - for Gender1, 66.7% of participants have prior knowledge of the topic, and Gender 2 participants follow closely with 61.5 %

Unexpectedly, more of Gender 1 group found the lecture difficult (25% vs. 0 in Gender 2 group). Similarly, more participants in G1 found the lecture flow and the test difficult, despite the use of discourse markers in their lectures. Since the prior knowledge of G2 is slightly higher than G1 (as shown in Table 5) it might have served as a facilitative factor for the G2 participants to perceive the lecture flow, test and lecture less difficult than how G1 perceived them.

The results shown in Table 5 concurs with the result of the independent t-test comparing CDE scores with and without discourse markers, where no significant difference in the results was observed. Thus, the ALC tests done in the study did not show that discourse markers had a significant impact on lecture comprehension, contrary to the findings of Chaudron and Richards (1986), Eslami and Eslami-Rasekh (2007), and Smit (2006). However, the present study's findings that comprehension appear to be unaffected by the use of discourse markers coincide with the findings of Dunkel and Davis (1994, in Flowerdew, 1994) that the use of discourse markers did not have a significant influence on the recall of lecture information units or words in note-taking although the aforementioned studies used different measures or tests to evaluate comprehension and recall of information - "Chaudron and Richards used cloze, true -false, and multiple choice test, while Dunkel and Davis used written recall protocols" (p. 68). It must be noted that the present study did not allow any note-taking.

Table 5
Summary of Exit Survey Results: Gender (Graduate)

Group	Prev. Knowledge of Topic (%)			Lecture Difficulty (%)				Lecture Flow (%)				Test Difficulty (%)			
	Yes	No	NA	E	M	D	NA	E	M	D	NA	E	M	D	NA
G1	4	8	0	2	7	3	0	3	6	6	0	0	7	2	3
%	33.3	66.7	0	16.7	58.3	25	0	50	25	25	0	0	58.3	16.7	25
G2	5	8	0	7	6	0	0	7	5	1	0	1	12	0	0
%	38.5	61.5	0	53.8	46.2	0	0	53.8	38.5	7.7	0	7.7	92.3	0	0

Note. G1: Gender 1 – with discourse markers, E – Easy, D – Dif, G2: Gender 2 – without discourse markers

Conclusions, Implications, and Recommendations

In general, the study found that discourse markers did not seem to have a significant impact on academic lecture comprehension. There may be some factors that may lend support to the divergent findings of the present study in comparison with the findings of other similar studies. First, the result may have been caused by the small sample size of the participants in the study. An extension or replication of the study with a bigger population may show a more substantial relationship between discourse markers and academic listening comprehension.

Second, the content, types of tests and methods to evaluate comprehension were not thoroughly explored in the present study. The nature of the test itself could have affected the results. Listening to the options in a multiple choice test and remembering them could have been a challenge to some participants, especially as some items were phrased in too many words. The participants were asked to take down notes, but experience tells us that taking down notes while listening is oftentimes difficult, especially in content areas. If multiple choice is used in an ALC test, more careful wording of the options should be done to ensure that they are short and easy to remember. Third, the present study did not engage in pre-training of participants in the use of discourse markers in listening to academic lectures. Listening skills and other comprehension strategies such as the use of discourse markers in lectures are not typically taught to students in the Philippines. Studies have shown that listening in a second language involves skills that may be distinct from reading, despite the generally positive correlation between the two skills (Long, 1989, as cited in Flowerdew, 1994). Therefore, a lack of awareness or sensitivity to discourse markers may possibly generate the same result in the two treatment groups. Lastly, the slow speech rate of lecture delivery adopted

in the study has affected the participants' focus needed for the ALC test procedure. The speech rate is a crucial factor for comprehension especially for EFL or ESL participants. As Griffith (1972, cited in Flowerdew, 1994) found in this study, "non-native listeners" (p.23) performed better in comprehension tests that were based on "texts modified in terms of articulation rate and pause frequency and duration (p.23). In the same study, Griffith also suggested further research to determine the most effective rate of delivery for different proficiency levels of learners. In the case of the present study, the slower than normal rate of delivery resulted in restlessness on the part of the participants, based on the observations of the test administrators and testimonies of the participants. Consequently, this restlessness resulted in a distraction that made the participants' attention wander elsewhere.

In conclusion, there is a need for continued research on academic listening comprehension and a variety of methods to use in measuring listening comprehension. Listening to lectures is an important skill that plays a key role in the learning ritual in the academe. Therefore, it is important for all students, local and international, to have excellent academic listening comprehension skills.

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