Academic Listening Comprehension (ALC) in English: Phase 1 (Developing and Piloting an Academic Listening Test)

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1. Introduction

Among the four language macro-skills - reading, writing, speaking, and listening – the least attention is given to listening. This is probably due to the mistaken belief that, unless a person has a listening impairment, s/he knows how to listen. Even in the academe, listening is the least researched topic among the language skills although lectures and debates are significant modes of teaching, especially in the university.

The relative lack of academic emphasis given to listening may be due also to the erroneous perception of listening as a passive skill involving just the reception of sounds. Nothing is farther from the truth. Actually, listening involves a listener processing the oral input from a speaker, using his/her Situational Knowledge (SK), Background Knowledge (BK), and Linguistic Knowledge (LK) (Bejar, Douglas, Jamieson, Nissan, & Turner, 2000 in TOEFL Monograph Series 2000). SK refers to the listener's understanding of the context, BK is the listener's knowledge of the topic, and LK is the listener's knowledge of grammar, discourse, and pragmatics (Bachman 1990, in TOEFL Monograph Series 2000). Bottom-up processing is used to discriminate discrete sounds and to group them into bigger units of words, phrases, clauses, and sentences; top-down processing, on the other hand, is done when background knowledge is used to aid in comprehension (Chaudron & Richards, 1986; Goh, 2002). What makes listening more complex than the other language skills is that it involves the interpretation not only of acoustic symbols but also of visual input such as gestures, facial expressions and body stance that form part of the message. The fact that speech is transitory further complicates the communication situation as it precludes the benefit of replay, unless the speech is recorded. Perhaps because of its ephemeral quality, Richards (1983) proposed that listeners actually remember propositions when they understand a message. "Propositions are represented indirectly in the surface structure of utterances" (p. 220). The ability to process these utterances depends on the listener's grammatical competence and real world knowledge. In other words, listening is not only a process but also a set of skills, such as listening for details, listening for gist, drawing inferences, listening selectively, and making predictions (Goh, 2002).

The Study

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). This initial study on academic listening focuses on lectures which are a permanent fixture of academe.

The nature of academic listening. Academic listening is very different from social listening which allows room for interaction and meaning clarification. Typically "monologic" (Eslami & Eslami-Rasekh, 2007), lectures vary in length but are basically long stretches of speech (Chaudron & Richards, 1986; Flowerdew & Tauroza, 1995, in Smit, 2006). This being the case, two basic skills are required of listeners: the ability to concentrate and focus on oral input for an extended period, and to take down notes. Note-taking is often difficult as listeners frequently have to simultaneously process information coming from several sources: the lecture itself, the OHP slide, the handout, and the lecturer's scribbles on the blackboard (Jordan, 1997, in Smit, 2006), and maybe even visual aids like maps and graphs posted on the board. For this reason, academic listening even in L1 could be a daunting task, often resulting in incomplete or inaccurate comprehension. By logical extension, listening in a second language (L2) or a foreign language (FL) is expected to be doubly difficult and complicated.

Information is the primary content of academic lectures and this information is (or should be) so arranged as to be easily understood and recalled. In this sense, although primarily oral, "lectures share properties with written texts …, as they are planned and employ primarily an informational type of language" (Smit, 2006, p. 23). " … the structuring and organization of information within a lecture has been assumed to be an essential aspect of its comprehensibility" (Chaudron & Richards, 1986, p. 114), making the signals that mark this structure of paramount consideration. "In order to process successfully and to achieve a coherent interpretation of speech, especially in a monologue, the listener needs to grasp the 'network of concepts and semantic relations underlying the surface text" (Beaugrande & Dressler, 1981, in Thompson, 1994; in Smit, 2006, p.15). Previous knowledge or content schema will definitely aid the listener in accomplishing this, but knowledge of the discourse organization of lectures should have a facilitative effect because it "helps top-down processing by initiating expectations and predictions about the lecture. These expectations are then confirmed and supported by the speaker's use of discourse signals of the relationship between successive episodes and moves within the lecture" (Chaudron & Richards, 1986, p. 116).

Discourse Markers. Discourse markers (DMs) are defined by Shiffrin (1988, in Smit, 2006,) as "elements which bracket units of talk" (p.40). More clearly, Hansen (1994:143 in Smit 2006:16) 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." Thus, DMs "signal the information structure of discourse by emphasizing directions and relations within discourse" (Eslami & Eslami-Rasekh, 2007). It is expected, therefore, that transitional devices and conjunctions should help listeners follow turns in a lecture and help them understand the relationship of ideas between sentences and between segments of talk.

In the study of Eslami and Eslami-Rakesh (2007), 72 EAP students at Najafabad Azad University were exposed to two versions of a lecture, one with discourse markers and the other without. Results show 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. In a related study, Chaudron and Richards (1986) differentiated DMs into macro-markers, or markers of rhetorical moves, and micro-markers which are lower-level signals of topics and topic relationships. Their study showed that macro-markers led to better recall of the lecture.

The facilitative effect of discourse markers may not only benefit L2 listeners but even L1 listeners. Allison and Tauroza (1996) examined the way that discourse structure relates to comprehension of the main points of a lecture using L1 participants. Just like their L2 counterparts, L1 listeners found difficulty in following a lecture that deviated from the typical problem-solution structure. If discourse markers had been used, most likely L1 listeners would have understood the lecture better.

Even in studies not focused on discourse markers, there is a perception that they are important in listening to lectures. For example, in Harper's (1985) 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. In another study, Rolfe (1977) developed a listening comprehension test in English for incoming students at Khon Kaen University, Thailand using multiple-choice items that tested the listener's "knowledge of structural points, comprehension of factual content, and ability to make inferences." (p. 8). "Structural points" pertain to lecture organization which may be indicated by discourse markers.

As has been mentioned earlier, very little study on academic listening comprehension (ALC) has been done in the country. With the University's goal of internationalization in the near future, there is an urgent need to launch ALC research in English in the University. Because of the critical significance of academic lectures in a university, this initial study explored the impact of discourse markers in ALC in English. With regard to this secondary concern, the question that must be answered then is: Do discourse markers have an effect on lecture comprehension? Results of this and subsequent studies will help the Department of English and Applied Linguistics (DEAL) design an academic listening program to help ESL/EFL learners cope with academic lectures.

2. Method

The ALC team prepared lectures in four academic fields: the social sciences, mathematics, the natural sciences, and the humanities. The research team selected the following topics: force (for the natural sciences), sampling (for mathematics), gender (for social science), and image (for the humanities). The lectures were based on several references on the topic. 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.

All lectures passed through several revisions for clarity, appropriateness of discourse markers, and appropriate length in order to pass the initial evaluation by the other members of the team.

Although there were two lecture versions, the same test was taken by listeners of both lectures. The test focused on the linguistic dimension of the listening process, which are: 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

(Harper, 1983 ; Eslami & Eslami-Rasekh, 2007)

As measure of comprehension, these macro-skills identified by Harper (1985) were tested: identifying the thesis and important details, inferring from the given information presented. Thus the academic listening test consists 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; Section B tests 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. As in the lectures, the tests were initially evaluated by the team for clarity and conciseness.

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

Two hundred and six (206) 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.

Procedure

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.
2. Preparation of the test. The research team decided to make it a multiple choice oral test.
3. Content validation of the lectures and tests. After the initial review by the content experts, the lectures and tests were revised based on the experts' comments and recommendations, after which they were again evaluated.
4. 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.

5. Taping of the listening test. The lecture was read once but test items were read twice.

The lectures and tests were saved in CD format.

6. Administration of the listening test. Prior to the listening test, the project's student assistant (an undergraduate computer science major) was made to take the test as dry-run. According to him, the test was manageable. 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.

After a short orientation, the test kits were distributed and then the CDs (lecture and test) were played. The participants were given one minute to recall the options and answer the question. After the test, the participants accomplished the Respondent Profile Sheet.

The grammar and listening tests were administered over a period of three weeks.

7. Correction of the tests and data analysis. The grammar and ALC tests were corrected by the student assistant. Responses gathered through the Respondent Profile Sheet were likewise counted. A summary of the results was prepared in Excel format and the project's statistician analyzed the data. To analyze the data, an independent t-test was used since there were different participants in the two conditions.

3. Results and Discussion

The first part of this section presents the individual results of the four lecture tests. An overall discussion of the results and implications of the study follows.

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.

A. FORCE Listening Test:

1. Undergraduate:

The independent *t*-test comparing the mean CDE scores of the two groups shows no significant difference. This means that discourse markers most likely did not have any significant impact on lecture comprehension. The correlation between DM x F and DM x G, the correlations for both

groups are equally positive and negative. This might suggest that the presence or absence of discourse markers may not have had any strong effect on lecture comprehension. Probably the participants relied on other listening skills such as predicting, guessing the word meaning, schema activation. Neither did the test takers rely on language proficiency because FG x Gram correlations are both positive and negative.

A second independent *t*-test, this time comparing mean F scores of groups with and without discourse markers, shows significant difference between Force 1 and Force 2. This means that the two groups' comprehension of the lecture's main ideas and details was significantly different, suggesting that understanding this item was facilitated by discourse markers. Correlation scores indicate, however, positive but weak correlation. Weak correlation in both groups indicates a weak association between their CDE test scores of comprehension and grammar scores.

Though that might have been the case, the results of the exit survey indicate that the few participants who found the lecture difficult and difficult to follow and the test itself difficult, all belonged to the Force 2 group (no discourse markers). This might suggest that the absence of discourse markers might have affected the perception of lecture and test difficulty.

It should be noted that no one in Force 1 found the lecture, lecture flow, and test, difficult. One possible explanation for this is the fact that there were more students in Force 1 group who had previous knowledge of the topic. Content schema might have been a more crucial factor in lecture comprehension than discourse markers. Having content schema, one can predict that the students would find the listening comprehension test easy or moderately easy.

2. Graduate:

The results of the t-test comparing mean CDE scores of groups with and without discourse markers show no significant difference. This suggests that discourse markers had no significant effect on lecture comprehension. Similarly, the results of the t-test of mean F scores of groups with and without discourse markers show no significant difference. The graduate participants probably relied on DM as well on their language proficiency – correlation between FG (measure of lecture comprehension) and Gram (grammar) is positive and very strong. This means that Force 2 participants' test scores are strongly related to their comprehension and grammar scores.

Over 69% of Force 1 group had previous knowledge of the topic. Although discourse markers were not critical to lecture comprehension, it is noteworthy that more participants in Force 2

(without DM) found the lecture difficult (30.8% vs. only 15.4% in Force 1), difficult to follow (15.4% vs. 7.7% in Force 1), and the test difficult (38.5% vs. only 15.4% in Force 1). Overall, content schema could have been the strong factor explaining the results of the statistical tests. Likewise, the small sample size could have contributed to the results.

B. SAMPLING Listening Test

1. Undergraduate:

The results of the independent *t*-test comparing the mean CDE scores of groups with and without DM show a significant difference in their performance. This means that DM had a significant effect on lecture comprehension. However, the results of the independent t-test comparing F mean scores of groups with and without DM show no significant difference. This might be interpreted to mean that comprehension of the main ideas and details of the lecture might not have been facilitated by discourse markers. A possible explanation based on the correlation analysis is that the groups might have relied also on language proficiency to understand the lecture content. The table shows positive, moderately weak and positive moderately strong correlation between FG and G (grammar score).

Although the majority (almost 54%) of the participants in Sampling 1 did not have the content schema, none found the lecture/test difficult, suggesting the probable help accorded by discourse markers in understanding the lecture. In Sampling 2, however, the majority or 54% had previous knowledge of the topic. Thus, content schema could have aided them in the absence of discourse markers in the lecture. In fact, the majority or 92.3% of Sampling 2 group found the lecture easy to follow, and 100% found the test easy.

2. Graduate:

The results of the independent *t*-test comparing the mean CDE scores show no significant difference between groups. Likewise, the results of the independent t-test comparing the mean F scores of the two groups show no significant difference.

Language may have been a contributory factor in lecture comprehension because correlations between FG and Gram are positive, moderately weak.

Content schema may have facilitated comprehension because half of the Sampling 2 participants had previous knowledge of the topic. Despite this, a few in Sampling 2 group found the lecture

difficult to understand and the test difficult (2 or 16.7%) On the other hand, although the majority (53.8%) of Sampling 1 group did not have content schema, none of them found the lecture or the test difficult. This suggests that discourse markers may have made the listening task relatively easy.

C. GENDER Listening Test

1. Undergraduate (UG):

The results of the *t*-test show that there is no significant difference between the two groups of UG Gender 1 and UG Gender 2. This means that discourse markers did not have an effect on lecture comprehension. The correlation between the variables in UG Gender 1 (with DM) is consistently positive. Looking at the results of the exit survey taken by the test takers, one can surmise that discourse markers might have helped the students a bit considering that the majority (61.5%) of UG Gender 1 group had no previous knowledge of the topic. The fact that more of them found the test difficult (23.1% vs. 7.7% in UG Gender 2 group) may suggest the critical role of schema in lecture comprehension. On the other hand, UG Gender 2 (without DM) exhibited a positive, moderately strong correlation between the other variables DM and F and G. 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 found the lecture difficult or difficult to follow. Again this might suggest that schema could have played a more critical role in lecture comprehension than DM.

2. Graduate:

As in the UG Gender test, the results of the *t*-test show no significant difference between Gender 1 and 2 results. The two groups manifest mostly positive but mixed correlations between DM, FG, and Gram, indicating that the presence or absence of discourse markers had no impact on lecture comprehension.

Overall, the results of the *t*-test seem to indicate the lack of relationship between discourse markers and lecture comprehension. This result may have been caused by the small number of participants. Thus, an extension or replication of the study with a bigger population may show a more substantial relationship between discourse markers and academic listening comprehension. In addition, other variables such as content and delivery and comparability of levels of difficulty of texts may be explored in a future study.

D. Image Listening Test

1. Undergraduate (UG)

The results of the independent *t*-test for the UG group exposed to Image 1(with DM) and Image 2 (without DM) show no significant difference between discourse markers and lecture comprehension.

Tests CDE (on discourse markers) scores correlated with the results of the tests on lecture comprehension (Tests F for main idea and details and Test G for inferences and applications), and lecture comprehension correlated with language proficiency measure (Grammar).

The correlations, on the whole, are predominantly positive but weak. This means that knowledge of discourse markers seems to have had weak relationship with lecture comprehension. This is supported by the fact that the majority of the participants (69% in both Image 1 and 2) found the lecture flow 'moderate', contrary to expectation that without DM, the structure of an informational lecture would be harder to follow. Neither did English language proficiency seem to be a fallback skill for the participants since correlation with lecture comprehension is positive, moderately weak. Probably, the undergraduate participants relied equally on their previous knowledge of the topic (62% of participants in Treatments 1 and 2) and on their L1 listening comprehension ability, in order to comprehend the lecture.

2. Graduate:

Based on the independent *t*-test, there is no significant difference between the performance of the group that listened to Image 1 and that of the group that listened to Image 2. This means that linguistic and discourse markers did not seem to have had any effect on lecture comprehension.

The correlations between Tests CDE and lecture comprehension (Tests F and G) are moderately strong. This means that knowledge of discourse markers might have helped a little in lecture comprehension but their English language proficiency might not have helped much in lecture comprehension.

This interpretation is supported by the results of the exit survey. The majority (77%) of the participants exposed to Image 2 found the lecture flow moderately easy/difficult to follow; nobody found it difficult to follow. What is strange is that 23% of those exposed to Image 1 found it difficult to follow despite the discourse markers, although the majority (46%) still found the lecture flow moderately easy/difficult to follow. What this suggests is that the participants probably did

not find discourse markers to have any facilitative effect at all. It is possible that the graduate participants relied on their previous knowledge of the topic to understand the lecture; the majority (69% of those exposed to Image 1 and 54% of those in Image 2) admitted to having it.

4. Conclusions, Implications, Recommendations

Overall, based on the independent *t*-test using CDE scores with and without discourse markers, only sampling UG group results were found to have a significant difference. However, when the independent t-test using mean F scores of groups with and without discourse markers were compared, only Force UG group showed a significant difference. This means that the majority of the ALC tests did not show that discourse markers had a significant impact on lecture comprehension, contrary to the findings of Chaudron and Richards (1986), Eslami and EslamiRasekh (2007), and Smit (2006).

The finding that DM did not seem to have a significant impact on lecture comprehension is not totally unexpected. The most probable explanation for the result is the very small sample size of the treatment groups – 12 or 13 per treatment group. Replication of the study on a much bigger scale is therefore recommended.

Also, it must be remembered that Filipinos, who constituted the majority of the participants in this study, are generally not taught how to listen to lectures, much less how to follow lectures in terms of discourse markers. Students in the Philippines are generally taught just to take down notes from a lecture. In other words, the participants in the study most probably focused strongly on content and not on the discourse markers in order to understand the lecture, relying more on their previous knowledge than discourse markers to understand the lecture. This observation might have been true also of the non-Filipino participants in the study. Chaudron and Richards (1986) observed that "non-native listeners have difficulty recognizing signals and markers of organization of information within lectures" (p. 115). This situation merits an enhancement of the study by having two sets of classes: a controlled class, which will be given a lecture on the value of discourse markers in academic listening, while another class will simply take the test without the benefit of a lecture on discourse markers. The aforementioned procedure will better delineate the effect of the knowledge of discourse markers on listening comprehension.

Another factor could be the content of the lecture listened to. Yagang (1993) found out that the nature of the message could affect the learners' listening skill. The listening materials might have included concepts and situations that are unfamiliar to some of the students, or may not have been aligned to their fields of interest. In such a situation, listening performance is affected by the listener's inability to predict what the speaker is going to say. According to Willis (1981, as cited

in Yagang, 1993), the ability to predict what the speaker is going to say is part of a listener's "enabling skills."

The listener himself is another factor in the listening situation. His attitudes and personal traits can be barriers to effective listening. Lack of interest is likely to affect the participants' willingness to listen (Boco, 1999). In the study, the students' preferences regarding lecture topics were not solicited; they had no choice in the topic of the lecture. Thus, their attitudes and beliefs towards the topic could have caused differential levels of mental resistance or openness to the lectures. Biases in understanding the lecture could have affected listening competence.

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. Even if the participants were asked to take down notes, experience tells us that taking down notes while listening is oftentimes difficult, especially in content areas. If the multiple choice type of test 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. Lastly, the slower-than-normal rate of lecture delivery adopted in the study is another probable explanatory factor. A slow rate of delivery was adopted in view of the EFL participants. Chaudron and Richards (1986), in their study which included the use of a baseline lecture version that was delivered at a slow rate, argue that "the lecture version was already slow enough for these learners to derive the most benefit possible from the pace of the lecture …" (p. 123). In view of this, a possible alternative in future studies is to have two sets of audiotaped lectures, one for ESL listeners and another for EFL. Other prosodic aspects, such as vocal quality, intonation, accent and pitch, pauses and hesitations in the delivery of the lecture, are also worth examining in future studies.

Academic listening of and by itself is a complex language area of research that is in a sense in its infancy; more intricate and more mysterious factor interactions must characterize academic listening in a second or foreign language. The pivotal role of language in lecture comprehension is revealed by the linguistic threshold hypothesis (LTH) which asserts that for successful reading or listening in a L2, a certain level of L2 linguistic ability must be achieved (Cziko,1980, in Vandergrift, 2006). This is also referred to as "the short circuit hypothesis" because L1 reading or listening ability is "short-circuited" if the reader/listener does not have an adequate level of language proficiency. Was lecture comprehension "short-circuited" by the language proficiency of the participants in this study? The strength of this explanatory factor in this study remains speculative because language proficiency was only measured in terms of grammar score. Future

ALC studies should consider other measures of language proficiency, especially as they apply to academic listening.

There is much to be done in the area of academic listening comprehension. The present exploratory study is just an initial step towards a fuller study of academic listening which is critical especially to tertiary level learning.

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