

Copyright
by
John Patrick Madden
2004

The Dissertation Committee for John Patrick Madden certifies that this is
the approved version of the following dissertation:

The Effect of Prior Knowledge on Listening Comprehension in ESL Class
Discussions

Committee:

Thomas J. Garza, Supervisor

Elaine K. Horwitz

Diane L. Schallert

Linda Ferreira-Buckley

Dale A. Koike

The Effect of Prior Knowledge on Listening Comprehension in ESL Class
Discussions

by

John Patrick Madden, B.A., M.S., M.A.

Dissertation

Presented to the Faculty of the Graduate School of
the University of Texas at Austin
in Partial Fulfillment
of the Requirements
for the Degree of
Doctor of Philosophy

The University of Texas at Austin

December 2004

Dedication:

With love to my parents

Acknowledgements

This dissertation, like any other, was the work of many hands. Gratitude is due, therefore, to many.

Thanks first go to my supervisor Thomas J. Garza. He guided me through the process, was always patient and encouraging, and offered criticism that made this a better study. I am very grateful for the many hours of his time he gave me.

Thanks also go to my committee members. Elaine K. Horwitz was very supportive during the time it took me to complete this degree. I am also grateful for her helpful comments on this project at its various stages of its completion and for the gift of her time and counsel. Her influence can be seen in the teaching implications section.

Diane L. Schallert was unfailingly cheerful, interested and helpful and for that I am very grateful. She offered assistance when the study was designed, when it went through the approvals process before research participants were recruited, and during the final drafting. Her encouragement made the discussion section much better.

Linda Ferreira-Buckley always had time and support for me and for this project for which I am grateful. Her encouragement helped me to complete this project. Her questions about the nature of claims and how they are supported in this field helped me to improve the discussion

section and to begin to think more carefully about any research I might do in the future.

Dale A. Koike offered very helpful comments. She spotted holes in the argumentation and in the final explanations of the research. Her comments resulted in a much better consideration of listening comprehension. For this I am very grateful.

Elaine Phillips and David Wright also served for a time as committee members on this dissertation. Harvey Sussman, likewise, served as an alternate committee member. I greatly appreciate their assistance in moving this project towards its completion.

Thanks to my friends and colleagues at ESL Services at the International Office of the University of Texas at Austin. ESL Services generously supported me in many ways, including office and file space, with the use of a computer, with printing support, and with help using the UT computer system. The comments and backing of colleagues and friends Mike Smith, Teresa Baker, Carol King, Terri Wells, Carolyn Thompson, Pat Jobe, Katherine Fouché, and others have been very helpful in getting this work done.

Many thanks also go to my fellow graduate students in Foreign Language Education who helped in various capacities in this study,

including reading recall protocols, helping prepare the materials of the study, and offering comments on the study at its various stages.

Finally, thanks go to the rest of my friends in Austin, my friends in various parts of the United States and the world, and to my family for their support and encouragement. I could not have done this without all of you! My deepest thanks!

The Effect of Prior Knowledge on Listening Comprehension in ESL Class
Discussions

Publication No. _____

John Patrick Madden, Ph. D.
The University of Texas at Austin, 2004

Supervisor: Thomas J. Garza

Previous research in second language listening comprehension has considered the role of prior knowledge in listening to texts that are presented by a single speaker. Despite this, second language learners commonly encounter situations in which they must understand what more than one speaker is saying, whether in the language classroom, the academy, or the workplace. In addition, prior knowledge for text type has been argued to support second language listening, though the genre of discussion has been overlooked as a text type. This study investigated the hypotheses that prior knowledge of the topic of a discussion would aid comprehension of that discussion, that greater listening skill would result in greater comprehension of a discussion, that topic prior knowledge and listening skill would interact to support comprehension, and that familiarity with the discussion form would support understanding a discussion. Participants recruited from an intensive English program were assigned to experimental and control conditions. Topic prior knowledge was operationalized by allowing the experimental group to hear a portion

of an audiotaped text that was used as the basis for a videotaped discussion among three native English speakers. To measure comprehension of the videotaped discussion, research participants distinguished statements made in the video from distracters, wrote recalls of the video, and made predictions about what they would hear next. Participants took a listening assessment and completed a survey about their experience learning English and their familiarity with and attitudes about discussion. Results showed that participants familiar with the discussion form understood more of the videotaped discussion than did participants unfamiliar with discussion. Better listeners understood more of the videotaped discussion than did less skilled listeners. Prior knowledge of topic was not found to be a significant predictor of success in understanding discussions. No interaction was found between topic prior knowledge and listening skill. Teaching and research implications are presented.

Table of Contents

Chapter 1: Introduction.....	1
Chapter 2: Literature Review	10
Defining Listening Comprehension	10
Summarizing: A Working Definition of L2 Listening.....	14
Comprehension, Context, and Prior Knowledge	15
Prior Knowledge and Second Language Reading Comprehension.....	24
Studies Involving Prior Knowledge and Listening	26
Discussion as a Text.....	37
General Summary	52
Chapter 3: Methodology.....	53
Research Questions	54
Hypotheses.....	54
Procedures.....	55
Study Participants.....	57
Detailed Information on the Participants.....	58
Listening Texts	70
Editing the Video.....	75
Audiotape	77
Comprehension Tasks.....	77
Survey Questions.....	78
Practice TOEFL Listening Section.....	79
Chapter 4: Results.....	82
Questions and Hypotheses 1, 2, and 3.....	83
Participants Included.....	84
Listening Tasks.....	84
Task 1: Short Answer	84
Task 2: Written Recall.....	85
Task 3: Prediction.....	92
Data aggregation.....	96
Listening Skill	101
Results for Research Questions 1, 2 and 3.....	104
Answers to Research Questions	106
Research Question 1	106
Research Question 2	107
Research Question 3	108
Research Question 4.....	110
Analysis of the survey data.....	111
Averaging.....	111
Interpreting Results for Research Question 4	115
Chapter 5: Discussion.....	118

Summary of Procedures and Findings.....	118
Discussion of the Findings.....	121
Practical Implications.....	132
Limitations and Research Implications.....	145
Directions for Future Research.....	158
Conclusion.....	165
Appendices	167
Appendix 1: The Test and the Survey the Participants Took.....	167
Appendix 2: Transcript of Priming Audiotape.....	176
Appendix 3: Transcript of Discussion Video.....	178
Appendix 4: Scoring Rubric for Recalls	187
References.....	195
VITA	206

Chapter 1: Introduction

Listening to one another has become vital in our global village. In the past, it was often mostly written texts that crossed borders. Today, people carry their language with them as they fly over frontiers; television, radio, the Internet, and the convenience store on the corner make “foreign” languages familiar. So, listening comprehension, always of interest, is again a current topic among students, teachers, and researchers. Rost (2002) split his discussion between studying listening and teaching it to students. Buck (2001) devoted his efforts to helping potential researchers and teachers become comfortable with the notion of defining and testing the construct of listening. Buck spent considerable time examining three listening tests, one of which, the Test of English as a Foreign Language (TOEFL), remains of perennial interest to students who wish to apply their English listening skills to the pursuit of further education. Rubin’s call for further work in the area of listening comprehension (1994) is being answered by new examinations of background knowledge in second language listening (Chung, 1999) and listening comprehension anxiety (Kim, 2000).

Interest in second language listening extends beyond the classroom, however. Mendelsohn (1998) argued that listening would become crucial in an increasingly small and globalized society. Among

other technologies in the global village, the networked computer makes it increasingly easy to digitize speech, store it, and send it to a desktop anywhere in the world for the use of general listeners, teachers, researchers, and learners (Davis, 2003). The conceptualization of language use and politics in Kachru's (1992 / 1995) terms of inner, outer, and expanding circles remains valid, with the addition that any radio, satellite television, and especially, networked computer, is now part of the expanding circle of any language. Any language, potentially, can be heard anywhere. The opportunity for, and the necessity of, mutual understanding have never been greater.

The need for understanding drives students to learn languages. The need to guide students drives instructors, and the need for an explanation for how students come to understand what they hear drives researchers, as well as instructors and students. In considering students' goals, if we borrow Kachru's (1992 / 1995) notion of inner, outer, and expanding circles of English use, then it becomes clear that students are seeking to join, at some level, a language community. Joining a community involves making contributions out of one's own experience to the on-going discussions in the community. A vital part of making those contributions is listening. Listening is a frequent subject of discussion in second language acquisition. Rost (2002) recounted a brief history of listening instruction,

beginning with early texts that presented language to be learned in written form and moving to the present via the post-World War II years of audio-lingualism in the United States and the context-driven syllabi in British tradition (pp. 115-116). Others (Krashen, 1996; Morley, 1990; Ur, 1984, Anderson & Lynch, 1988; Mendelsohn, 1998; Mendelsohn & Rubin, 1995; Rost, 1990; Richards, 1983 / 1987; Omaggio-Hadley, 1993) have attested the rise in importance of listening, particularly in the sense of approaching listening not as a series of habits to be formed, as in the case of audio-lingualism (Steinberg, Nagata, & Aline, 2001; Omaggio-Hadley, 1993; Rost, 2002), but rather as a skill to be developed by the learner in the context of integrating it with language learning as a whole. Moreover, materials writers have attempted to give listening more prominence in the practice of teachers and learners (White, 1998; Kozryev & Stein, 2001). Textbooks (Lim & Smalzer, 1996; Kozryev & Stein, 2001) have presented listening to dialogues and discussions, or use discussions as activities. In contrast, much of the recent work on second language listening comprehension has generated data from learners listening to a single speaker – similar to a lecture – rather than to multiple speakers, as in a dialogue, conversation, or discussion. Indeed, though quite a bit is known and written about listening in research and teaching circles, a gap appears when we try to think about listening in discussions.

We listen and speak out of our experience. Numerous studies have examined the ties between experience (or prior knowledge) and listening comprehension. Textbooks take advantage of this research by presenting thematically grouped listenings (Lim & Smalzer, 1996; Kozryev & Stein, 2001). Many of these studies that examine prior knowledge and listening comprehension, again, have assumed that second language listening means listening to a single speaker, or, that the number of speakers makes little difference in comprehension (see, for example, Chiang & Dunkel, 1992; Markham & Latham, 1987; Lund, 1991; Chung, 1999; Nuwash, 1997). Textbooks, in contrast, while offering monologues (Lim & Smalzer, 1996), frequently have offered texts with multiple speakers for listening practice (Numrich, 1997; Kozryev & Stein 2001). Though the importance of lecturing, and lecture-like formats, should not be overlooked (Flowerdew, 1994), much of the listening people do whether in their first or second languages involves listening in situations where they may expect to understand input from more than one speaker, such as conversations or discussions. Richards suggested taxonomies of microskills for both lecture and conversational listening, and then suggested skills that might be useful in discussion situations, among them identifying the topic of a discussion (1987, 1990). It would appear that prior knowledge is an important element in listening in a discussion

situation, yet studies do not appear to address the role of prior knowledge in this listening situation. That people do learn to listen in this situation is fairly easy to establish. That previous work examines prior knowledge is clear. What wants explaining is how prior knowledge might work in listening in a discussion situation.

The purpose of this study, then, is to investigate the role of prior knowledge in listening comprehension in class discussions in the English as a second language setting. To continue by clarifying terms, listening comprehension here is defined as developing a good approximation of the speaker's meaning (Brown & Yule, 1983b, p. 57). Regarding class discussion, Richards (1987, 1990) drew a distinction between listening situations that may be mainly transactional – concerned with the conveyance of information, as in the case of lectures – and situations that may be mainly interactional – such as conversations. While he suggested different listening skills might be required in each situation, class discussions may require a blend of both types of listening, because the content of the listening, and the interactions among the speakers, are important. Natural conversation is unplanned, rather than elicited for research purposes, (Tsui, 1994). Discussions, though, like lectures, may be intended to accomplish educational purposes (Bligh, 2000; McKeachie, 1994). We will define discussion, then, as a planned conversation about a

set topic that is intended to accomplish some purpose. Since shared prior knowledge among the participants is assumed (Bligh, 2000), and since Rubin (1994) has called for more work on prior knowledge and text type in second language listening, work on discussion would seem to be justified.

Discussion assumes prior knowledge. Bligh argued the concepts that underlie participation are not made explicit (2000, p. 55). Prior knowledge and its role in second language listening comprehension are a matter of some interest. Rubin (1994) called for more work on the kinds of knowledge second language listeners need to infer the meaning of incoming messages. Work on prior knowledge in second language listening comprehension proceeds from schema theory and work on second language reading (Carrell & Eisterhold, 1983/1987, in Madden, 1997). Prior knowledge is assumed to be held in organized, though not static, arrangements defined as schemata. Briefly, discussion on second language comprehension in general, and second language listening comprehension in particular, centers on whether it proceeds mainly from schematically held concepts to the particulars of the speech signal – in a "top-down" fashion – from the speech signal to conclusions about the concepts being conveyed – in a "bottom-up" fashion, or, alternatively, whether this is primarily an "interactive" process. Some researchers have

found evidence arguing for the importance of prior knowledge applied in a "top-down" fashion in helping learners make sense of the speech signal (Long, 1990; Schmidt-Rinehart, 1994; Lund, 1991, Markham & Latham, 1987; Chiang & Dunkel, 1992). Others (Tsui & Fullilove, 1998) have found that bottom-up processing appears to be an important discriminator between proficient and less-skilled listeners, implying an important role for "decoding," a more bottom-up skill. Still other researchers (Flowerdew, 1994) have suggested that interplay among different mental operations supports listening, though "in a way that it is not possible to say" (p. 9). Flowerdew, however, then, went on to propose a model that separates a first, language-processing stage of listening, from a second stage of listening in which prior knowledge and "context" are used to infer the speaker's intent. Yet Widdowson (1998), in discussing the role of context, argued that the relevant context in a situation is negotiated by interlocutors using the speech signal. Context and linguistic code, therefore, lie on a spectrum, rather than on opposite sides of a dichotomy. It would appear then, that further work towards an explanation of the listening process is important to the field of second language acquisition research, given prior knowledge's role in discussion, and given the debate itself surrounding second language listening processes and the use of prior knowledge. Considering the apparent importance of prior

knowledge in discussion, and discussion's focused nature, prior knowledge will be operationalized as knowledge of the general content of the discussion. Along with prior knowledge of content, prior knowledge of form has also been posited as significant (Carrell & Eisterhold, 1983/1987, in Madden, 1997). One can assume that students who report greater familiarity with discussion as a genre would demonstrate greater prior knowledge of the form. This assumption can be tested by comparing students' comprehension performance to their reported experience with discussion. Given the debate as to how prior knowledge is used in listening, we can test the assumption that prior knowledge is applied in a top-down fashion to compensate for difficulties in linguistic decoding (Lund, 1991; Widdowson, 1998; Chung, 1999). By way of contrast, presenting listeners the challenge of decoding a discussion among native speakers with the goal of establishing the topic directly from the conversation would seem to be a way of comparing the role of decoding with that of prior knowledge.

Work on prior knowledge and second language listening comprehension in discussions would push the field further towards Rubin's (1994) goal of more work on prior knowledge. Greater explanatory power derived from further studies might allow for better explanations of how learning and memory function and how language is

processed. Researchers would be better poised to provide guidance to teachers and learners. As for teachers and learners, better explanations of how prior knowledge is used in understanding discussions would increase the effectiveness of lessons. Teachers could better select texts and activities and could better design courses. Learners would find it easier to acquire listening skills by pursuing their acquisition in a manner congruent with how the language processes in the mind work.

The remainder of this dissertation will present how these research interests were investigated. Chapter 2 of the thesis will further clarify the problem by reviewing the relevant literature on second language listening comprehension and prior knowledge, on discussion, and on how second language listening has been studied. Chapter 3 will present the methodology. Chapter 4 will present the results. Chapter 5 will present discussion, limitations of this study, and implications for teaching and for further research.

Chapter 2: Literature Review

This study considers the role of prior knowledge in second language listening comprehension in class discussions. This chapter will establish the basis for the study. The chapter will propose a definition of listening comprehension, review relevant literature on prior knowledge, review studies on prior knowledge and second language reading and listening comprehension, and suggest what is meant by discussion.

Defining Listening Comprehension

From the speech sound, listeners infer what a speaker means. This is a rather simple definition and glosses over the debate and study that has gone into understanding the nature of the speech sound and how first and second language users interpret it. The literature on listening is vast and much of the debate cannot be covered here. What will be covered here is enough to provide context for the current study.

Beginning with the speech sound, the difference between what happens in the physical world – sound – and what we make of it – “perception” – gives rise to discussion about listening comprehension, wrote Handel (1989, p. 265). To summarize from Handel, speech sounds arise when a speaker sets the air into vibration with his or her various speech articulators (vocal folds, tongue, teeth, lips, and jaw). The speech sound is complex, is composed of sounds of various wavelengths, and is

rapid and coarticulated. That is, we begin to shape our articulators to make the final sounds in a phrase even as we are still uttering the first sounds (Handel, 1989; Ladefoged, 1993; Rost, 1990). According to Handel, the effect is that the beginnings and the ends of speech events happen simultaneously. Coarticulation presents challenges for second language listeners, who may be unaccustomed to processing connected speech (Rost, 1990, p. 38). The basic abstraction that links the speech stream to meaning on the part of the listener is the phoneme, the smallest unit of sound in a language that creates a distinction in meaning (Handel, 1989; Giegerich, 1992, p. 31). Phonemes can be thought of as mean sound values acquired over time. Second language listeners, who may have learned the canonical phonemes from their dictionaries or language courses, may find interpreting connected, coarticulated speech a challenge, where native speakers may be aided by their experience with the language over time (Rost, 1990, p. 38). A form of prior knowledge, then, may be said to operate at the most basic levels of speech perception.

At a further remove from the physics of sound, and the first abstraction of speech perception, we arrive at listening comprehension. Definitions of L2 listening comprehension tell us as much about the definer as they do about listening. Characterizations of listening – both first and second language listening – may be explicit or implicit, and they

have varied with their times. Listening has been seen as arising from habit formation, as a function of innate cognitive language abilities, as akin to computation, as a quality related to psychology or self-awareness, as cultural awareness, or information processing (Rost, 2002. p.1). Rost introduced his discussion of L2 listening with a discussion of listening in general; he classed definitions of listening into four broad areas. Listening can involve simply receiving what the speaker is saying. Listening can be the building up of understanding and interpretation from what the speaker says. Listening can involve interaction and negotiation with the speaker. Listening can involve empathy and deep understanding of the speaker or the context, almost a Zen state: “feeling the flow of consciousness as you pay attention to things” (Rost, 2002, p. 3; compare with Hagen, 1997). Rost himself wrote that “listening = experiencing contextual effects;” he explained his characterization as defining “listening as a neurological event (experiencing) overlaying a cognitive event (creating a change in a representation)” (p. 3).

Rost’s definition laid the foundation for his explanation of listening, in which he presents listening as a series of processes, one in some sense overlaid on others. Buck (2001) also described listening as a process. This process does begin with deciphering incoming sounds, but also includes making meaning out of them. Key aspects of the process are that the

interpretation of sounds and the construction of meaning have to happen automatically – that is to say with the process making little demand on attention or consciousness (compare with Rost, 2002, pp. 7-16). For Buck, because the construction of meaning is involved, all of the listener's prior experience is involved in the listening process. Yet this process, noted Buck, is within the listener's mind. The "context" for listening is not really the listener's surroundings, but what the listener makes of those surroundings. Listening, then, is personal and individual (Buck, 2001, p. 29).

Though Rost and Buck wrote from a second language listening comprehension perspective, their remarks above apply to both first and second language listening. Feyten (1991), in a study of 90 college-level English speakers studying French and Spanish, found positive correlations between L1 listening ability and L2 acquisition, L2 listening ability, and L2 oral proficiency. Buck (2001) wrote that underlying linguistic processes would appear to be the same in L1 and L2 listening, but incomplete knowledge of the target language and the target culture or context limit proficiency in second language listening.

Scholars in second language listening research have struggled with definitions of listening comprehension. Schmidt-Rinehart (1994) did not provide an explicit definition of second language listening, but saw it as a

process that involved the listener in the making of meaning and in which prior knowledge was vital. Markham and Latham appeared to assess listening comprehension by basically defining the construct as accuracy of L1 recall of a listening text (1987). Conrad (1989) saw listening comprehension as a processing of language that was top down and was largely driven by the semantic content of the message. This was a continuation of an argument in which she maintained that comprehension involves using the incoming message as a basis for a largely predictive and semantically driven interpretation of what a speaker says (Conrad, 1985). Lund (1991), in comparing second language listening and reading, saw both reading and listening comprehension as a two-step process. "Decoding" involves identifying "basic linguistic units" in the speech signal; comprehension involves integrating these units and the listener's or reader's background knowledge into an interpretation of the speaker's meaning.

Summarizing: A Working Definition of L2 Listening

Given the debate over even defining listening comprehension, it seems best to propose a two-level definition. At the more abstract level, given the inference involved in constructing speech from perceived sound, and, then constructing meaning from speech, it seems reasonable to adopt the general definition proposed by Brown and Yule: developing

a good approximation of the speaker's meaning (1983b, p. 57). This definition allows for the process to be internal to the listener, and yet allows some flexibility for discussion and study. For the purposes of this study, listening comprehension will be defined as constructing an interpretation that is reflected in reasonably accurate recall of what a speaker has said, and reasonably accurate predictions about what a speaker might say next. The recall portion is partly similar to the Markham and Latham (1987) definition. The prediction portion is not so different from Conrad's (1989) contention that listening comprehension is a top-down, and hence, predictive, process.

Comprehension, Context, and Prior Knowledge

Since this is a study of the role of prior knowledge in second language listening comprehension, some treatment of prior knowledge theory and how it has been applied in second language listening research is in order. What we will learn is that understanding is something the listener constructs, that it takes effort, and that at all levels we use what is already in our minds to construct our understanding.

Understanding is something we seek or pursue, wrote Brown (in Brown, Malmkjær, Pollitt, & Williams, 1994). Comprehension takes effort. It amounts to more than a speaker or writer uploading meaning into language and a listener or reader downloading the message. Rather,

comprehension involves the signal of intent on the part of the speaker or writer and, on the part of the listener or reader, an inference of what is intended by the signal. Comprehension involves fits, starts, stumbles, and negotiation (Brown, 1994). Any text created by a speaker or writer, on its face, seems to carry meaning and seems to cohere. In fact, though, from the audience's point of view, texts do not inherently cohere or mean anything. Instead, the audience provides the coherence it needs by filling in gaps left by the speaker or writer and uses inference to assign a meaning to the speaker's or writer's message (Brown & Yule, 1983a).

Inference and the construction of meaning apply even at the word and feature level. Aitchison (1994) argued that understanding words is driven by the listener's expectations. While she seemed to imply a top-down process for word understanding, it might be better to see it as an interactive process. Aitchison described word understanding as a two-step routine: word recognition and spotting the meaning. Aitchison cited research to support her argument that the details of pronunciation are lost to the listener, who then must use his or her expectations to narrow the range of what could be said in order to recognize words. For example, Aitchison wrote that English speakers, when presented with the phonological stem [-iss], and a sound between the phonemes [k] and [g], "heard" the word [kiss] rather than the non-word [*giss]. Aitchison

explained the step of arriving at the meaning using prototype theory, which argues that as people mature, they learn from their environment and then organize their learning under clusters of features that could be called prototypical examples. In studies Aitchison cited, Americans name robins as prototypical examples of birds, where Britons cite blackbirds. Children's choices vary from those of adults, implying learning, and non-native English speakers also make differing choices, implying cultural influences. Hearers use prototypes to categorize and interpret their experience; categories are probabilistic. A particular bird could be a better or worse example of the category, depending on its features and what the listener expects. Pinker (1999) argued that people construct prototypes, or "family resemblance categories" (p. 272), from their experience in a world of close resemblances and fuzzy categories, and that the brain is uniquely equipped to create and use these kinds of fuzzy categories.

Returning to the discourse level, we would expect the same kind of process of understanding to apply. Brown (1994) cited Aitchison's essay from the same volume when she discussed the comprehension of various kinds of language. Recognition, with little meaning construction, would apply to understanding numbers or proper names, though grasping the connotations of proper names, such as the social status associated with place names in a city, involves applying particular cultural knowledge.

Comprehending instructions, narratives, and arguments requires progressively more “enrichment” of the text, Brown wrote. Procedures are often reinforced by the immediate physical context. Narratives require the reader or listener to hold a chronology of events and participants in mind with little help from the immediate context. Argument assumes the reader or listener will maintain attention on the premises, facts, evidence, logic, and participants. Both genres, Brown asserted, assume abstraction from immediate surroundings, inference of causal or logical relations, and, therefore, construction, or “striving after” meaning on the part of the reader or listener (pp. 10-20). Comprehension, then, is a two-step process that involves an interaction between recognizing something relevant in the environment, in our case language, and then assigning a meaning to it by a process of constructing a context for it and relating it to the context by inference.

We learn to do this as children acquiring our first language. In summarizing the process of childhood first language acquisition, Steinberg, Nagata, and Aline wrote that speaking is grounded in listening, which itself is grounded in thinking (2001). Children learn to associate a word with its reference to an object, experience, or abstraction because the word occurs in a physical or linguistic context. Children learn concrete content words before function words and abstractions. Experience and

thought lead to language comprehension, which leads to language production. For that reason, the apparatuses and workings of listening comprehension in the second language are of interest.

Comprehension is explained as being supported by organized background, or prior, knowledge. In this theory of knowledge, the term “schema” is often applied to mean a pattern of related memories or sensations; the term has been frequently applied, and debated, in second language comprehension research and teaching. For example, Rubin argued that listeners rely on an “oral schema” for comprehension at various levels of discourse. In her review, she called for further work on the second language listening process, including work on listeners’ prior knowledge, listeners’ competence, and the interaction between texts and listening processes (1994, pp. 209-211, in Madden, 1997).

Rubin was drawing on a theory of knowledge that stretches back at least to Immanuel Kant. Kant’s theory of knowledge has been applied to reading and listening research in the form of schema theory. Kant argued that what we know about the world is based not solely on our perceptions, but on what we make of our perceptions based on what is already in our minds. He used the term “schema” to apply to a filter between our sense perceptions and our higher faculties: “The schema is, in

itself, always a mere product of the imagination,” (Kant, 1781 / 1990; see also Hartnack, 1967).

In these views, prior knowledge is what makes comprehension possible. Bartlett, whose use of the term *schema* has been applied to the research on second language listening argued that our memory aggregates experience into “schemata” (1967, pp. 201-202, in Madden, 1997) and applies them in a manner similar to imagination:

“Remembering is not the re-excitation of innumerable fixed, lifeless and fragmentary traces. It is an imaginative reconstruction...” (Bartlett, p. 213, in Madden, 1997).

Chiang and Dunkel, (1992) cited Bartlett as support for their work on second language listening. Tyler (2001), acknowledging the use of the concept “schemata” in second language listening research, argued that what listeners actually do is “model” a current situation, with schemata providing the raw material for the model (p. 264).

Memory, imagination, and perception appear to overlap. Damasio (1994, p. 100, in Madden, 1997) cited Bartlett, and subsequently described memories as being stored in patterns of connected neurons called “dispositional representations,” which:

...hold in store in their little commune of synapses (...) not a picture per se, but a means to reconstitute “a picture.” If you have a dispositional representation for the face of Aunt Maggie, that representation contains not

her face as such, but rather the firing patterns which trigger the momentary reconstruction of an approximate representation of Aunt Maggie's face, in early visual cortices (p. 102, in Madden 1997).

Damasio and Damasio (1992) proposed a three-part linguistic system for the human brain, in which connected patterns of neurons represented concepts, language, and links between the two (in Madden, 1997).

The schema concept has proven fruitful in encouraging research in second language reading comprehension, but presents difficulties when researchers attempt to apply the concept as a framework to explain experimental results, Nassaji wrote (2002). Schema theory confounds a concept of a theory of knowledge with how the mind might store the knowledge, Nassaji argued. Attempts to fit experimental findings to schema theory have resulted in researchers describing second language reading first as more of a "top-down" phenomenon heavily dependent on the reader's prior knowledge, and later, as an "interactive" process, with no explication of the nature of the interaction, Nassaji wrote (p. 446). Work on memory argued for a model of comprehension that allows for a more complex relationship between conceptual and linguistic process; Nassaji favored the construction-integration model (Kintsch, 1988; 1998), where reading difficulties arise not from the presence or lack of schemata,

but from difficulties in either constructing a “textbase” through automatic, lower-level processes, or a “situation model” (Kintsch’s terms) for analysis and interpretation.

Comprehension, for Kintsch (1988), grows from roots in the information of a text, rather than from predictions based on prior knowledge. When a reader, or listener, encounters a text, he or she fashions a model of the text through a two-stage process, Kintsch wrote (1998, pp. 103-108; 119-120). The reader first creates a rough sketch of the basic propositions of the text using the text and his or her experience and purposes for reading. This rough sketch is constructed in cycles constrained by the capacity of working memory. The rough sketch may lack overall coherence since any potentially relevant propositions are included. In the second stage, the reader (or listener) engages in a “constraint-satisfaction process” (p. 119), in which he or she retains those propositions that help create a coherent picture of the text. The model of the text, thus, has origins in the original text and the reader’s or listener’s prior knowledge. In discussing the two sources of a reader’s model for a text, Kintsch (1998) wrote that one could differentiate between a “textbase” that more or less represents the propositions in the original text and a “situation model” that takes account of the reader’s prior knowledge and expansion upon the text. A reader constructs a situation

model by linking propositions held in short-term memory with knowledge recovered from long-term memory. A particular reader's final picture of a text may be more textbase or more situation model influenced, Kintsch (1998) wrote, depending on the ability of the reader to pull relevant knowledge from long-term memory. A naïve reader confronting a particular text may well construct a textbase from the propositions, but produce an impoverished response based on a sparse situation model. Expert readers can mine their experience to produce rich situation models. Kintsch cited research comparing the recalls of medical interns, experienced, and expert doctors when reading reports of symptoms of medical conditions, where interns produced sparser recalls than did experienced or expert doctors (1998, p. 233). Less experienced readers, then appear to be more likely to be tied closely to their textbases, rather than being able to construct rich situation models.

Kintsch (1998) further argued that expert use of long-term working memory explains the limits of short-term memory. Novice or poor readers, lacking expertise or lacking the ability to make use of it, find their reading constrained by short-term working memory and thus will understand less of what they read. Experts use their long-term memory to expand their short-term memory capacity. Finally, Kintsch argued for a more parsimonious use of the term "inference" in conjunction with

reading research. Inference, he argued, involves the conscious drawing of conclusions. Expert readers may infer, but not when they construct situation models; they draw inferences based on situation models. The use of expert knowledge to construct a situation model, by drawing this expertise from long-term memory, is automatic; no inference is involved. Otherwise, no expertise is involved, Kintsch maintained.

To summarize, while there is interest in second language research in prior knowledge and comprehension (Rubin, 1994), work is still needed. Schema theory has been used by second language acquisition researchers to explain reading and listening comprehension. Nassaji argued that the theory tends to confound theories of knowledge with theories of how knowledge is stored, and further, tends to bias researchers and instructors towards seeing comprehension as a process often driven by the comprehender's expectations, presenting difficulties in interpreting and applying the results of research because complexities in the relationship between the reader and the text are unaccounted for. (2002).

Prior Knowledge and Second Language Reading Comprehension

Listening theory tends to draw from reading theory. Steinberg et. al. (2001) argued for a general foundation of cognition that supports a general language comprehension facility, which in turn underlies a

general language production facility. Lund (1991, discussed below) explicitly made comparisons between second language reading and second language listening comprehension. He concluded that second language reading and listening comprehension are different modalities of one comprehension ability.

Nuwash (1997) documented the relationship between second language reading and listening comprehension. In a study of 204 ESL high-school students, she found that their performance on reading and listening tests correlated highly and significantly. In addition, she found that faster completion rates on the tests reflected greater English proficiency. Students performed better on the reading tests than on the listening tests. The most important predictor of performance was time spent in the U.S. educational system, and underlying language knowledge was found to be the most important factor in accounting for students' performance, supporting the concept of a single, underlying second language comprehension faculty.

Reading scholars generally explain reading comprehension in terms of its parts or its development; researchers look for measurable factors in reading and then attempt to explain how those factors affect comprehension (Urquhart & Weir, 1998, p. 38). In second language reading, ideas about knowledge in the form of schema theory have been

widely used. Among those cited are Carrell and Eisterhold (1983 / 1987, in Madden, 1997). Comprehension, they argued, arises from an interaction among a learner's intellect, comprehension approach, and background knowledge organized in schemata. Content and rhetorical form schemata are posited. The comprehension process may be more expectation driven (top-down) or text driven (bottom-up) (Carrell & Eisterhold, 1983 / 1987, pp. 219-229). Nassaji (2002), cited above, specifically noted weaknesses with the schema approach in understanding second language reading, and advocated the use of Kintsch's construction-integration model (1988, 1998).

The influence of rhetorical form on second language reading comprehension has been documented. Chu (1999, 2004) found that second language readers tended to have better comprehension, and to rate texts as more comprehensible, when the underlying rhetorical conventions matched their cultural expectations. In second language listening, we would expect to find similar results, that listeners' prior knowledge would influence their comprehension.

Studies Involving Prior Knowledge and Listening

The facts of first and second language listening that we commonly can observe are that people do appear to process and to respond to what they hear in appropriate ways. Questions receive answers; greetings

receive replies; arguments receive comment and rebuttals. Increasingly from the explanatory literature we are encouraged to see comprehension as an interaction, in which the listener constructs an interpretation of a text based both on input from the text and from inferences he or she draws based upon what he or she has already experienced. A number of studies in comprehension in general, and second language listening comprehension in particular, provide evidence for this model of human comprehension.

Regarding general comprehension, prior knowledge may work by helping the listener configure input, though prior knowledge must be structured in such a way as to help the listener make sense of the input. In a landmark series of experiments on comprehension often applied to second language comprehension, Bransford and Johnson (1972, in Madden, 1997) found that providing a context for the text structure of input was more effective in helping first language, high-school listeners comprehend than was providing repetition of the input or unorganized context. Moreover, context provided before listening was more helpful than post-listening context.

Markham and Latham (1987, in Madden, 1997) found that prior knowledge, defined as cultural and religious background, affected the listening comprehension of English learners. Learners were grouped as

coming from a Muslim, Christian, or religion-neutral background. On examining participants' written recalls of monologues about Islam and Christianity, Markham and Latham found that listeners identifying themselves with a particular religious tradition recalled more main ideas from the passage dealing with their own tradition, were more likely to introduce their own "elaborations" to what they had heard, and introduced fewer "distortions" of the listening passage.

Long (1990, in Madden, 1997) found that English-speaking college Spanish learners showed better listening comprehension on a monologue about a familiar topic than on one about an unfamiliar topic, as demonstrated on discrete point tests and L1 written recalls. In addition, students with better course grades, and so, by Long's inference, greater listening proficiency, showed better comprehension. Finally, students, in their recalls, interpreted what they heard, constructing new texts, rather than acting as recorders.

Lund (1991, in Madden, 1997) compared the second language reading and listening comprehension of 180 college German learners at the beginning, intermediate, and advanced levels. Students read or listened to the same monologue twice and wrote two recalls. Lund found that beginning and intermediate readers recalled more of the passages' content than did listeners, and were aided more by repetition. Among

advanced students, readers and listeners improved to the same degree on repetition. In comparison with readers, a higher proportion of listeners' recalls were main ideas; readers recalled more details. Lund concluded that listening comprehension was a top-down process relative to reading.

In contrast with other research, Chiang and Dunkel (1992, in Madden, 1997) found no evidence that prior knowledge supported listening comprehension of monologues. Prior knowledge was defined as familiarity with the topic. The 360 undergraduate Taiwanese English learners in the study did demonstrate greater prior knowledge of the presumed familiar topic, but failed to show significantly better comprehension than did students listening to a lecture about the unfamiliar topic. More advanced students had better comprehension than did less proficient students, and appeared to benefit more from modifications introduced into the lectures by the researchers to aid comprehension.

Schmidt-Rinehart (1994, in Madden, 1997), in studying the listening comprehension of 90 English-speaking college Spanish learners, expected that listeners would comprehend more when given a familiar topic, that language proficiency would aid comprehension, and that prior knowledge of topic and language skill would interact. Listening comprehension was measured by L1 recalls in English. Language skill and topic prior

knowledge did aid comprehension, but there was no interaction, Schmidt-Rinehart found.

Finding an interaction between L2 listening skill and prior knowledge on lecture listening performance was the goal of a study by Jensen & Hansen (1995). They hypothesized that listening skill would determine the utility of prior knowledge, in that better listeners would be more able to use their prior knowledge of topic to understand 11 short lectures. University-level students in an intensive English program took a two-part listening test. The “nonacademic” portion, conversational listening, determined students’ listening level. The dependant variable was students’ performance based on their listening on the second portion of the test, listening to 11 short lectures on “nontechnical” (humanities and social sciences) and “technical” (sciences) subjects. To determine prior knowledge, students self-reported on whether they had studied the topics of the lectures. Jensen and Hansen found a significant interaction for only 1 of the 11 lectures, and the effect size was small, arguing against an interaction. Prior knowledge was found to have a statistically significant main effect for only 5 of 11 lectures, and the effect size was small. Listening skill was found to be a significant predictor of listening performance, with a large effect size, across all 11 lectures. They also found that some administrations of the technical lectures showed

significant prior knowledge effects, where others did not. They concluded that arguments for the effect of prior knowledge on lecture listening could not be supported, and that further investigation of the differences in lecture formats should be investigated.

Chung (1999), in a study of 137 Korean college students, found that listeners with high prior knowledge understood more of a presumed familiar text, and, in addition, found that more proficient L2 English listeners understood more than less-skilled listeners. Chung found no interaction between listening skill and prior knowledge. She also found that listeners were persuaded by arguments they heard in their second language.

The studies above, Bransford and Johnson (1972), Long (1990), Schmidt-Rinehart (1994), Markham and Latham (1987), Chiang and Dunkel (1992), Jensen and Hansen (1995), and Chung (1999), with their emphasis on the role of prior knowledge in comprehension, are clearly trying to explain factors relevant to comprehension. Lund's (1991) may also be more of a study that looks at the constituents of listening, rather than the process, since, while he does invoke the language of "top-down" versus "bottom-up" comprehension processes, he makes no particular attempt to explain how a particular approach to comprehension might work beyond saying that listeners appear to infuse their recalls with their

own inferences, a phenomenon that Long (1990) also found; her participants also added their own interpretations to their written recalls.

In contrast, the comprehension studies that follow, all in second language listening, go further in trying to explain how the listening process works. O'Malley, Chamot, and Küpper (1989 / 1995, in Madden, 1997), in a study in which intermediate high-school English learners were asked to listen and then reflect out loud on their listening, found that listening had stages of input perception, parsing, and interpretation in terms of prior knowledge. In a study of the parsing of input in listening comprehension, Conrad (1985, in Madden, 1997) found that more advanced English learners and native speakers tended to parse and interpret input in a listening cloze based more on the semantics of the text, where less-skilled English learners appeared to rely more on the syntactic and phonological information from the input. Conrad began with the assumption that reading and listening share a common base, and continued from this premise in a further study of listening comprehension. In a study in which Polish learners of English and native English speakers listened to sentences recorded by native English speakers and then played at increased speech rates, Conrad (1989, in Madden, 1997) argued that proficient second language learners and native speakers processed input in a predictive manner because of their semantic

and syntactic knowledge. She found that native speakers and more proficient learners were able to process rapid speech because they were able to locate content words and extrapolate sentence meaning. Less proficient learners, relying on less complete L2 knowledge, were less effective at locating the content words and inferring sentence meaning, in effect having to take a more bottom-up approach.

“Bottom-up” skills may be a key in listening comprehension, however. Nassaji (2002) argued that a bias towards seeing second language reading comprehension in “top-down” terms lead to difficulties in understanding the reading process; more recent second language reading studies emphasizing the importance of “bottom-up” processes have lead to a re-interpretation of second language reading as resulting from an interaction of “bottom-up” and “top-down” processes.

In second language listening, the same shift is occurring. Tsui and Fullilove (1998) found that bottom-up processing appears to be an important discriminator between proficient and less-skilled listeners, implying an important role for "decoding," a more bottom-up skill. Tsui and Fullilove analyzed listening comprehension questions on an English language listening test taken by more than 100,000 eleventh-grade students in Hong Kong between 1988 and 1994 as part of their graduation requirements. The researchers coded the examination questions by

“question type” – questions that required listeners to identify specific details or to draw conclusions about the whole of a passage – and by “schema type” – questions that were congruent with the following text or questions that were at variance with the following text. Tsui and Fullilove hypothesized that good bottom-up processing skills would allow the better listeners to more frequently provide correct answers to questions that required conclusions about the whole of a listening text and to questions whose content did not predict the content of the subsequent listening passage. Tsui and Fullilove confirmed their hypotheses and concluded that while lower-level listeners need to make use of their prior knowledge to aid their listening, the goal of instruction should be to improve their bottom-up listening skills.

Hohzawa (1998) found that providing listeners with a chance to activate their prior knowledge affected comprehension and the kind of processing L2 listeners did. Hohzawa tested the comprehension of 58 low- and intermediate Japanese students in an intensive English program. Students were assigned to “background information” and “no background information” groups, experimental and control, respectively. Students took a proficiency test, were tested on their familiarity with the topics of three news stories, listened to the stories, wrote recalls, took a comprehension test, and re-took the familiarity measure. Students in the

experimental group, in addition, heard the introductions to the news stories and discussed the content of the stories briefly with the investigator. Visual aids were also provided. Hohzawa found that students tended to use top-down processing in reporting content-level information in their recall protocols but bottom-up processing in reporting exact words in their recalls. However, she found that students who established background information tended to use more top-down processes and that their comprehension was greater than students in the control group. Better listeners understood more than less-skilled listeners. Finally, students who lacked background information tended to produce more instances of inaccurate recall of the text, or “distortions,” similar to the findings of Markham and Latham (1987).

Tyler (2001) tested the working memory aspects of the construction-integration model (Kintsch, 1998; 1988) in second language listening comprehension. The model implies that second language listeners will use more working memory capacity to understand the basic propositions of a text (in Kintsch’s term, to construct a “textbase”) upon which to found an interpretation (from a “situation model,” Kintsch’s term). Tyler tested the model by having 30 second language speakers of English and 30 native speakers of English evaluate simple mathematical equations while trying to remember the content of the

“Washing Clothes” passage from Bransford and Johnson (1972), ostensibly in order to write a recall. Half of the L2 English speakers and half of the native English speakers received the topic of the passage; half did not, similar to the original 1972 study. Tyler expected that native English speakers and those who received the title of the passage would use fewer working memory resources to construct a textbase and so would complete more math problems correctly. Tyler confirmed his hypothesis: native English speakers correctly interpreted more equations than did non-natives; both native and non-native English speakers who received the topic completed more equations correctly than did those who did not receive the topic.

What we find from the above studies, first, is that prior knowledge does appear to aid comprehension, often defined as recall of a spoken passage (Markham & Latham, 1987; Long, 1990; Lund, 1991; Schmidt-Rinehart, 1994; Chung, 1999; Hohzawa, 1998), though confirmation of this, while frequent, has not been universal (Chiang & Dunkel, 1992; Jensen & Hansen, 1995). Second language listening comprehension has stages; it is a process (O’Malley, Chamot, & Küpper (1989 / 1995). Comprehension is not exact; listeners interpret, rather than reproduce, what they hear; recalls are “imaginative,” in Bartlett’s sense (Markham & Latham, 1987; Long, 1990; Lund, 1991; Hohzawa, 1998). Because of the

demands of listening, listeners may add more of their own interpretations than do readers (Lund, 1991). It may be that prior knowledge actually operates in terms of syntax or semantics and allows listeners to take a broader view of a text and make predictions (Conrad, 1985, 1989).

Alternatively, it may be that prior knowledge allows listeners to devote less working memory to figuring out a text, and so to comprehend more with less effort (Tyler, 2001). Language proficiency aids comprehension (Conrad, 1985, 1989; Long, 1990; Chiang & Dunkel, 1992; Schmidt-Rinehart, 1994; Tsui & Fullilove, 1998; Hohzawa, 1998; Tyler, 2001).

Comprehension may not necessarily proceed in a predictive fashion. Rather, bottom-up skills may be vital in listening comprehension (Tsui & Fullilove, 1998; Tyler, 2001) and what both language skill and prior knowledge may do is free more mental resources for the construction of an interpretation, after the manner of Kintsch's model (Tyler, 2001).

Discussion as a Text

What the above studies also have in common is their reliance on monologues or short lectures. What they do not examine is comprehension where the listener must understand more than one speaker at a time. Discussion is a form of oral text that second language learners will likely encounter in academic and professional settings, at least if one draws conclusions from materials writers (Lim & Smalzer,

1996; Madden & Rohlck, 1997; Porter & Grant, 1992). Like the above studies, Flowerdew's (1994) widely regarded work in academic listening centered on listening in the lecture setting. Flowerdew rightly pointed out that in university-level education, the lecture remains the most widely used means of conveying information to students. Students studying in their second languages will have to understand lectures in their target languages. What scholars have not explored, however, is listening in other university settings, including discussion settings. In this section, we will provide a definition for discussion and consider some justification for exploring listening in that context.

To begin by defining the term discussion, we ought to consider three common oral texts native speakers and language learners may encounter, the lecture, the conversation, and the discussion. Flowerdew (1994) concentrated on lecture, in which one speaker conveys information to a number of listeners. The topic of a lecture, in addition, may be said to be more or less fixed in advance. Conversations, in contrast, are freer exchanges among multiple participants who assume the role of both speaker and listener. Tsui (1994) described "natural conversation" as happening "without any planning or prompting beforehand," contrasting it with talk elicited for research purposes (pp. 5-6). Topics are not necessarily fixed beforehand but may be introduced by any of the

participants. Discussion occupies a middle ground. There are multiple participants who may speak and listen. Bligh (2000) wrote that discussion serves to accomplish specific purposes, such as teaching thinking skills or subject matter. In addition, discussion allows the participants to apply and judge material they learn from other sources such as lectures (McKeachie, 1994). Discussion, then, here is taken to mean a planned conversation about a particular topic with its end being the accomplishment of a particular goal, whether this is the solution to a stated problem or the exploration of ideas raised by prepared questions. A discussion is understood to have a facilitator of some sort, though this may be someone in authority such as a teacher, or someone more equal to other participants, such as a fellow student.

In terms of listening skills, Richards (1987, 1990) distinguished between transactional and interactional listening, concerned with either the content of the listening text or the relationship between the speakers respectively. Class discussion may require both kinds of listening because both the content and the group dynamics are important, Richards suggested.

With regard to discussion as an educational context in which second language learners may find themselves, Bligh wrote that discussion affords its participants an opportunity to learn content, and to develop

ideas and thinking skills in relation to that content. In summarizing educational research, Bligh wrote that discussion appears to be as useful as other instructional techniques, including lectures, at presenting information to students, when the measure of effectiveness is factual recall (2000, pp. 2-3). He did state, however, that discussion is only as effective as lecture in helping students learn information when the discussion has a focus or a specific task, whether or not the teacher or a student leads the discussion; unstructured discussions may be less effective than lectures for presenting information, when the methods are compared using recall of facts, Bligh wrote (2000, p. 4). Discussion may be less efficient than reading or lectures for conveying information, but may help the instructor accomplish other goals. Among those goals, Bligh wrote, is the “promotion of thought” (2000, pp. 9ff, and p. 27).

In second language teaching, there has long been a recognition of the need to expose students to listening to a variety of text types and in a variety of situations. Thus, for example, Lim and Smalzer (1996) emphasized lecture listening and note taking, while including discussion as a post-listening activity. Kozyrev and Stein (2001) included monologues, conversations, and discussions as listening texts for students. Listening situations have been characterized as laying along a continuum from mainly transactional to mainly interactional, where transactional language

is concerned with conveying a message and interactional language is concerned with the relationship between the participants (Richards, 1983 / 1987, 1990; Rost, 2002; Buck, 2001; Brown & Yule, 1983b). Frequently, studies of second language listening comprehension have taken as their texts transactional language, typically the monologue, often adapted from a written source, owing to the commonality between reading and listening comprehension (Markham & Latham, 1987; Long, 1990; Lund 1991; Chiang & Dunkel, 1992; Schmidt-Rinehart, 1994; Chung, 1999). Producing a monologue has obvious benefits in studying second language listening comprehension. Monologues are the simplest kinds of recordings to generate, and, in an academic setting, provide authenticity in terms of listening to lectures (Buck, 2001). In addition, the greater the complexity of a task, such as keeping track of multiple speakers, the more challenging is the task for the listeners (Buck, 2001; Brown, 1995; Anderson & Lynch, 1988). Interactive texts do raise the challenge of distinguishing among speakers, especially if the text is presented only in audio (Buck, 2001). In addition, in a research situation, limiting the number of speakers in a listening text can limit variability and so increase the validity and reliability of a listening test (Buck 2001; Rost, 2002; Bachman 1990). Still, even in common testing situations, the importance of students being able to understand dialogues is such that short and longer

conversations are featured as texts in widely used language assessments such as the TOEFL, both paper and computer based.

Because of the relative ease of constructing tests using monologues and because of the practice of borrowing from reading research to provide foundations for second language listening research, it is no surprise that most second language listening studies, as noted above, take as their text the monologue. Although these studies assume that second language listening would be basically the same across different linguistic genres, such as the monologue and the dialogue, it is not at all clear that this is the case. Moreover, in so far as these studies can be applied to listening in an academic or professional context, while these studies assume a clear distinction between transactional and interactional texts and purposes, others have found that there is an overlap between more transactional and more interactional purposes when discussions are considered. Discussions, as well as lectures, may be a forum for learning.

With regard to variation in text type, or listening genre, many second language listening researchers seem to assume that being able to listen to a short lecture enables one to listen in other situations. This is clearly the implication of many second language listening studies (Markham & Latham, 1987; Long, 1990; Lund 1991; Chiang & Dunkel, 1992; Schmidt-Rinehart, 1994; Chung, 1999). In contrast, Shohamy and

Inbar (1991) distinguished among listening text types, and argued that texts with more oral features are easier to understand, lending explicit support to the assumption of many other second language listening studies, that monologues are more challenging than conversations to understand. Shohamy and Inbar studied the listening performance of 150 high-school aged EFL students on three different texts the researchers created: a text more like a newscast, a text more like a short lecture, and a text resembling dialogue between an expert and a novice. The newscast text was written and read. The short lecture was delivered from prepared notes; there was interaction between the speaker and a single audience member. The dialogue was unprepared. Two topics were used with the factual content controlled across the texts. Participants answered three types of questions: "global," which required inference; "local," which required the identification of details related to the main points of the listening; and "trivial," which required the identification of details unrelated to the topic of the listening. Shohamy and Inbar found that the most oral text, the dialogue, was more intelligible than were the lecture and the newscast, respectively. Students performed better on the local questions than on the global questions. Performance on trivial questions seemed to vary by topic. Shohamy and Inbar argued that the newscast was the least comprehensible because more content was delivered more

quickly, and that perhaps the students were less familiar with the genre of the text. In contrast, the lecture and the dialogue contained more features of oral input arising from the interaction and were less conceptually dense. Their findings, then, arguably supported the assumption that the ability to understand a monologue implies the ability to listen in other contexts.

Read (2002), however, was unable to confirm their results. In examining ways of presenting listening material to students in language testing situations, Read played two versions of the same content to 96 intensive English students. Students read a background text and then listened to either a scripted monologue or a discussion among three people, both presented in audio only. Read found that students who listened to the lecture understood more of the content than did those students who listened to the discussion, in contrast with what Shohamy and Inbar (1991) found. Read commented that the students who listened to the monologue may have benefited from taking a lecture-based test the previous week, that his questions may have better matched the lecture than the discussion, and that students reported that the dialogue was spoken too quickly in comparison to the lecture. Students listening to the discussion may have been less familiar with that form of input, Read argued. In addition, the comprehension questions were based on the

monologue and were only checked for content against the discussion. This may have made answering the questions more difficult for the discussion listeners. Read noted that students reported understanding the discussion but had difficulty in answering the questions, speculating that answering comprehension questions in response to monologues may be less challenging. Both Read and Shohamy and Inbar (1991) concluded that a variety of texts should be included in listening tests. Read (2002) noted that while the earlier study had pointed out the oral features of a discussion that might make it easier to understand than a more “literate” text, his study highlighted the difficulties learners may have with listening to a discussion, particularly when listeners have to contend with “an unscripted discussion on a topic of which they may have limited background knowledge” (p. 117). In his conclusion, Read noted that among the difficulties listeners might face when confronted with a discussion is distinguishing among multiple speakers, particularly when the discussion is in audio format (p. 118). Given the disparity of the results of these two studies, further work on text type in listening is warranted.

Second language learners will likely encounter situations in which they must develop knowledge not by listening to and making notes from a lecture, but by exploring ideas or solving problems in a discussion, a situation that blurs the clear distinction between stereotypically

transactional and interactional language, in that both the content and the interaction among the speakers are important. While the lecture remains a primary way of conveying information at the tertiary educational level (Flowerdew, 1994), students can expect to encounter many situations in which they are expected to develop knowledge for themselves through the medium of talk. Conversation and interaction help learners develop their language skills. Conversation with native speakers helped Spanish learners develop their skill with tenses, Call and Sotillo found (1995). English learners better understood instructions when they could interact with the native speakers giving the instructions than when they simply heard recordings of simplified instructions, Pica, Young, and Doughty found (1987). Students learn languages in order to join a linguistic community at some level, whether for education or work. Discussion, whether for exploring ideas, learning content, or solving a problem is a common feature of educational settings. At the secondary level, Hammer (1995), and Alvermann et. al. (1996) documented the use of discussion in science, social studies and humanities contexts. In contrast, Romo and Falbo (1996) documented the lack of exposure to academic discussions high school ESL students may have. At the university level, many authors attest to the importance of discussions. Schallert et. al., (1996) cited discussion as a teaching method at the graduate and undergraduate levels.

In a business school setting, discussions of business problems and case studies are used to help students both learn content and to help them to develop the communications and problem-solving skills they will need (Jackson, 2002; Jackson, 2004; Basturkmen 2002; Basturkmen, 2003).

Discussion is seen as an effective teaching method. Hammer (1995) argued that class discussions in physics classes can be effective in helping students understand scientific reasoning and in helping them apply what they have learned to new problems; a focus on only learning the “correct” answer to a problem stifles understanding. Alvermann et. al. (1996) found that students reported better understanding what they had read once they had discussed it with peers (p. 260). Similar to Hammer (1995), Hong Kong business faculty reported to Jackson (2004) that they used discussion of case studies to prepare their students for the ambiguity of making actual business decisions.

Discussion, however, may present comprehension challenges distinct from lectures. Like lecture situations, listening comprehension is crucial. Discussion listening may involve listening to peers in order to develop one’s own ideas rather than listening to the instructor in order to take notes. The high-school students observed by Alvermann et. al. (1996) stressed the importance of listening to fellow students in the growth of their own ideas (p. 260). Unlike a lecture, in which a single speaker strives

to convey a coherent text, discussants must follow the development of ideas and create coherence in a social context (Schallert et. al., 1996). In contrast to a lecture in which ideas are conveyed, ideas are explored in a discussion. Divergent, even demonstrably incorrect conclusions, can be reached. Hammer (1995) found that his students discussed predicted outcomes to a physics experiment that were clearly at variance with the Newtonian mechanics they were studying. Jackson's (2004) business professors reported being asked by their students for the "correct" solutions to case studies, even though the professors used case-study discussions as a way to encourage their students to apply theories they had learned in lectures. While the discourse of lectures is more widely studied in terms of listening comprehension (Flowerdew, 1994), discussion presents distinct comprehension challenges. As noted above, there is some debate concerning whether monologues or dialogues are more comprehensible (Shohamy & Inbar, 1991; Read, 2002). Where in traditional rhetoric, ideas may be explored sequentially, as in a lecture, Resnick, Salmon, Zeitz, Wathen, and Holowchak (1993) found that ideas, arguments, reasons, and evidence are distributed chronologically among the participants in a discussion. In contrast to the expectations of classical argument, where claims and finished proofs are prominent, Resnick et. al. (1993) found that their triads of discussants (college-age native English

speakers) regularly challenged each others' positions, answered challenges, and conceded points. Moreover, challenges and concessions were seen as driving the discussion, with concessions often used at the beginnings of additional challenges. Resnick et. al. (1993) also noted the importance of listening: "Participants listen carefully to each other and construct their arguments in relation to what others say" (p. 362). Listeners in discussions may confront ideas expressed through multiple turns by more than one speaker. These turns may contrast with the longer, more developed turns of a lecture, and may also contrast with a typical classroom sequence in which the teacher asks questions and evaluates students responses, the "initiate-respond-evaluate" format (Mehan, 1985). Discussions are more like conversations (Resnick et. al., 1993). Tsui (1994) contrasts conversation sequences with classroom sequences, noting that conversation sequences may more closely resemble an "initiate-respond-follow-up" format, rather than evaluation. In analyzing discussion in MBA courses among native English speakers and proficient non-native English speakers, Basturkmen (2002) found both the sequence "initiate-respond-feedback" and the use of feedback as the initiation of more extended sequences of conversational development (p. 237). Basturkmen pointed out that while ESL textbooks may emphasize the importance of discussion, texts may conceive of participation in

discussion in terms of linguistic forms or functions, such as stating an opinion (p. 234). In contrast, Basturkmen (2002) found, as did Resnick et. al. (1993) , Schallert et. al. (1996), Alvermann et. al. (1996), and Hammer, (1995) that ideas develop among speakers. Students and teachers need to be aware of turn sequences and idea development in discussions, Basturkmen wrote (2002, p. 240).

As Read (2002) found, listening to multiple speakers in discussion can present challenges to second language learners. First, language directed at the listener, as in a conversation, is arguably easier to understand than language not directed by the speaker to the listener (Brown, 1995). Second, the greater the number of variables in a listening situation, such as multiple speakers, the greater is the challenge for the listener (Anderson & Lynch, 1988). Discussion tests listeners in both of these ways. Second language listeners must strive to make sense of the opinions of multiple speakers on a relatively fixed topic. In addition, Lynch (1995), describing a small study in which he taught his intensive English students language for negotiating meaning in discussions, found that while listeners in a discussion can ask for clarification, they often have to wait to ask any questions until an opportunity presents itself. This “delayed negotiation” (p. 170) results in listeners having to understand what multiple speakers are saying while not necessarily having the

discussion directed at them specifically. This can be contrasted with situations in which negotiation drives the ideas forward (Basturkmen, 2002; Resnick et. al., 1993; Schallert et. al., 1996).

Among the areas in second language listening that might prove difficult for students in discussions are content knowledge, often researched above as prior knowledge of topic, and listening skill. Citing research that negotiation of meaning helps both more- and less-advanced students, Lynch (1995) described efforts to have his students learn to ask clarification questions in discussion situations. Lynch defined discussion as the question and answer session or conversation that might take place in an academic seminar after a presentation by a fellow student. He provided examples of transcripts from his students' discussions and noted their success in using questions to clarify and negotiate meaning. What he reported is that students have difficulty with understanding classmates' pronunciation, vocabulary, or word usage. Discussions, he noted, also at times involved multiple students attempting to get clarification from a speaker at the same time, rather than pairs of students speaking to each other. The result, from both the necessity to listen to a short presentation and from the necessity of participating with a group of students, is what Lynch calls "delayed negotiation." Students may have to listen and follow a discussion before getting a chance to ask questions.

General Summary

Second language listening comprehension means arriving at a reasonable interpretation of what someone has said. This interpretation is a construct, at levels from the linguistic through the conceptual. Memory, imagination, and perception seem to be related, so comprehension, in some sense, is supported by memory and is in some sense a memory itself. Typically, studies of prior knowledge and second language comprehension have investigated listening with texts presented by single speakers. Discussion, however, presents a form for second language listening that has not been fully investigated, and yet, may require content prior knowledge and listening skill on the part of the language learner. Given that prior knowledge for rhetorical form influences reading comprehension, it may be supposed that knowledge of the discussion form might likewise influence second language listening comprehension and would be worth investigating.

Chapter 3: Methodology

This chapter will explain the methodology of the study and provide explanations for why that methodology was chosen. First, the research questions will be presented, followed by the hypotheses. Next, general procedures for administering the listening study will be discussed. Information about the participants recruited for the study will then be provided. Participants answered survey questions that provided information about their backgrounds and English study experience; the results of these survey questions will be presented here in order better to characterize the participants and so provide context for the arguments and explanations that will be based upon the results of the participants' answers to the listening tasks. The development of the listening texts used the study will be explained. Participants completed three comprehension tasks; the development of these tasks will be described. Participants were surveyed regarding their experience with discussion. The survey instrument will be discussed. The listening test for the study, the background questions, and the survey questions are included as an appendix, as are the transcripts of the listening texts used. Participants took a listening assessment, a practice listening section of the Test of English as a Foreign Language (TOEFL); the use of this instrument will be explained.

Research Questions

As with any study, the research questions grow out of gaps in the literature discussed in the previous chapter. The research questions for this study were:

What is the effect of prior knowledge of topic on the comprehension of a discussion in an ESL class setting?

What is the effect of listening skill level – as measured by the listening section of the Test of English as a Foreign Language (TOEFL) – on the comprehension of a discussion in an ESL class setting?

Is there any interaction between prior knowledge of topic and listening skill?

Will students who report a greater familiarity with or more frequent participation in discussion understand more of a discussion than those who do not?

Hypotheses

ESL Learners with more prior knowledge of a topic can be expected to understand more of what they hear in a discussion, as measured by correct responses to short answer questions, by the number of idea units reported in a free written recall of the discussion, and by the accuracy of their predictions about what they might hear next in the discussion.

High listening skill, as measured by the listening section of the TOEFL, will result in greater listening comprehension of the discussion, as measured by participants' performance on tasks designed to assess their comprehension of the discussion.

High listening skill, as measured by the listening assessment, and greater prior knowledge of the topic of the discussion, as operationalized by the assignment of participants to experimental or control conditions will support each other. That is, skilled listeners in the experimental condition will have the greatest comprehension of the discussion, as measured by tasks on this study, followed by less-skilled listeners in the experimental condition, skilled listeners in the control condition, and less-proficient listeners in the control condition.

Learners with more familiarity with discussion or more frequent participation in past discussions will show more comprehension than students with less familiarity or experience.

Procedures

Study participants were recruited from an intensive English program (IEP) at a major research university in the southwestern United States between the Spring semester of 2002 and the Fall semester of 2003. Participants were randomly assigned to experimental or control conditions. They signed consent forms. Both groups heard warm-up

audio- and videotapes to check sound levels. The experimental group heard an audio priming tape drawn from an ESL textbook. The topic, a comparison of male and female communication styles, was presented as a short lecture and was assumed to be accessible, but not necessarily familiar, to the students. The students in the experimental group had the topic of the audiotape provided to them in advance. Next, both the experimental and control groups watched a videotape of three native English speakers discussing the content of the audiotape. The starting point for the discussion was a discussion question drawn from the ESL textbook that had provided the audiotape. The question was asked in the videotaped discussion, so both experimental and control groups heard the question, though it was not provided to them ahead of time. Both groups completed three comprehension tasks: identifying statements made in the video, writing recalls of the video, and predicting what they might hear next. In addition, students in both groups completed survey questions about their English experience, their backgrounds, and their familiarity with discussions. Finally, students in both groups completed the TOEFL practice listening section. The study was conducted in classrooms available at the IEP, using audio cassette players and TV / VCR combinations to present the video to the students, and in classrooms available through the university that were equipped with sound systems and projection

equipment for presenting the video. Procedures took approximately 90 minutes per session. The study instrument is included in the appendix. The following sections present more detail about the study participants, the audio and video listening texts, the comprehension tasks, the survey questions about discussion experience, and the listening assessment.

Study Participants

A total of 174 English language learners from an intensive English program at a major university participated in data collection between the Spring semester of 2002 and the Fall semester of 2003. Students in this program followed an academic track or a more general language-learning track. Participants were recruited from among students in the academic track and the middle through upper levels of the language-learning track. Typically, students in the academic track can use English at the basic conversational level or higher and may have a paper-based TOEFL score of at least 425. Students in the academic track are usually designated by the instructors in the program as “intermediate” through “advanced” learners of English in that they can use and understand English on at least the sentence or clausal level. Students in the language-learning track may vary in their proficiency from true beginner to “advanced” learners. Typically, students range in ability from unable to communicate through able to function professionally in English. Students from the middle

through upper levels of the language-learning track are at least “low-intermediate” in proficiency as designated by this program.

Detailed Information on the Participants

Students who participated in the study completed surveys about their experience with discussion and about their English learning background. The information they provided about their background is reported here to allow for better characterization of the population from which the study sample was drawn. Information the students provided about their experience with discussion is reported in Chapter 4 along with the results of the listening tasks.

This study involved statistical analysis of student responses, and, so, a minimum number of students were needed in order for the results of the study to be valid and reliable. To investigate research questions 1-3 that look at the effects of prior knowledge of topic and of listening skill in second language listening comprehension, student responses on the listening tasks were analyzed using a two-level, factorial Analysis of Variance (ANOVA). The table below shows the template for the analysis:

	High prior knowledge (HPK) – Experimental group	Low prior knowledge (LPK) – Control group
High listening skill	HPK and high listening	LPK and high listening
Low listening skill	HPK and low listening	LPK and low listening

Research question 4 was investigated by using a one-way ANOVA, that compared the means on the dependent measures of participants with high average discussion experience to those with low average discussion experience.

In order to meet the statistical demands of the study, ideally a minimum of 20 participants in each of the experimental conditions were needed, or a total of 120 participants, to allow for sufficient analytical power (Stephens, 1996; Hays, 1994).

Efforts were made in recruiting participants to control for random variance in the final sample. This did have the effect, however, of extending the time needed to recruit participants and of reducing the final sample size. In recruiting the students as participants, it was assumed that they would be interested in the additional listening practice afforded by participating in the study. Moreover, they were encouraged, though not required, to participate. Because this study involved questions about prior knowledge, only students in the intermediate and higher levels of the IEP and who were new to the IEP were recruited, and data collection occurred once per academic term to minimize the possibility of students either taking the study more than once, or of hearing about the content of the study from classmates. Data were collected eight times during 2002 through 2003 – once each during the fall and spring terms, and once

during each of two summer sessions. An average of 18.75 students signed consent forms and took part in data collection each term. To operationalize the concept of prior knowledge of topic, students in the experimental condition were primed by hearing an audiotape monologue drawn from an ESL textbook.

As part of data collection, students answered questions about their English learning experience. Five of these questions served as screening questions to eliminate from analysis for this study any data from students who entered the study already familiar with the textbook, the audiotape, or the content upon which the discussion video was based. These survey questions are reproduced here:

Have you ever used the book Advanced listening comprehension (2nd ed), by Patricia Dunkel, et. al., (published by Heinle and Heinle, Boston, MA, USA, 1996), either in class or out of class? Yes / No.

Have you studied in the areas of male-female or cross-gender communication? Circle: Yes / No

Have you studied in the area of cross-cultural communication? Circle: Yes / No

Have you studied in the area of gender studies? Circle: Yes / No

Have you studied or read the work of linguist Deborah Tannen? Circle: Yes / No

The data of any student who did not answer “No” to all of these questions were eliminated from analysis in the present study.

Regarding participant data eliminated from this study, the responses from a total of 73 students were withheld from consideration, or, on average, the data from 8.13 participants each term. During the initial data collection session in Spring 2002, eight students who were not new to the IEP were allowed to participate in data collection as a check on procedures and equipment; their data were not included in the final analysis. Across all data collection sessions, responses from a total of 63 participants were eliminated from the study because of their answers to the screening questions. Another student was eliminated from the experimental group during a data collection session during the first summer session 2003 because of testing irregularities. One other student was eliminated because he chose not to complete the listening tasks for the study and therefore provided no data. After eliminating the responses of participants who did not fit the study criteria, data from a total of 101 students were used in the study. It should be noted that of these 101 participants, not all of them provided data that could be analyzed for each of the listening tasks or for the survey questions about experience with discussion. For example, one student did not provide information about his or her past discussion experience.

The 101 participants were randomly assigned to control and experimental conditions. Control participants, 48 students or 47.5 percent of the sample, heard warm-up audio and video recordings, and then the video of the discussion, after which they answered comprehension and survey questions. The experimental group, 53 participants, or 52.48 percent of the sample, was defined as the high prior knowledge group. They were primed by hearing an excerpt about gender differences in communication styles from Dunkel, Pialorsi, and Kozyrev (1996). The discussants in the video also had heard this excerpt.

Regarding demographic data on the participants, their mean age was 27.51 years ($sd = 4.62$ years; 96 of 101 subjects reporting.). Of the participants, 58 were female (57.43 percent); 42 were male (41.48 percent); one did not report gender. Spanish, Korean, Chinese, and Japanese were the most commonly reported first languages of the participants. Two participants reported having two first languages: Mandarin/Spanish and Chinese / Taiwanese. The table below represents first languages of the participants:

<i>Table 3.2: L1 of Participants</i>	<i>n</i>
Spanish	32
Korean	25
Chinese / Mandarin	14
Japanese	11
Portuguese	5
Thai	4
Indonesian	2
Arabic	1
Basque	1
Chinese / Taiwanese	1
German	1
Greek	1
Mandarin / Spanish	1
Mongolian	1
Turkish	1
Total N	101

It is widely held in the field that time studying a second language results in greater proficiency (Omaggio-Hadley, 1993; Nuwash, 1997). To get a clearer picture of their experience in learning English, participants were surveyed on how much time they had spent studying English, including their time at the intensive English program. Participants' answers varied widely. Some participants may not have understood the question because seven reported only zero to two months of English study. Because only intermediate and higher students were recruited, this would seem to indicate they did not understand the question, as one of these students was placed into the advanced level of the academic track of

the IEP. The maximum number of months of English study reported was 360. The minimum was 1. The mean was 85.28, with a standard deviation of 66.68 months. Median was 84 months (mean of 7.11 years; sd of 5.56 years; median of 7 years).

Regarding programs, 68 of the 101 participants came from the academic track of the IEP; 33 came from the general track. Students were asked to report into which proficiency level they were placed in their respective programs, to self-evaluate their own proficiency in English, and to report on what they thought their best skill was. As shown by the tables below, in the academic program, students were fairly evenly distributed among intermediate, high intermediate, and advanced levels, while most students in the general program reported being placed in the high intermediate level or lower. Note that the academic and general tracks of this particular IEP are not directly comparable, though students who return to the program for more than one semester of study may move between the two tracks. The academic track tends to attract students with a narrower overall range of proficiency in English and with goals of continuing their studies at the graduate level. The general track admits students from all proficiency levels and their goals may vary from graduate or undergraduate study in the future to improving their English for current personal or professional needs; students from the beginning

proficiency levels of the general program were not recruited for the study. The first table shows the proficiency distribution in the academic track; the second shows the general track.

<i>Table 3.3: Academic Track: Self-reported placement level</i>	<i>n</i>
Low Intermediate to Intermediate	13
High Intermediate	21
Advanced	27
Unknown	7
N (Academic track)	68

<i>Table 3.4: General Track: Self-reported placement level</i>	<i>n</i>
Low Int.	9
Int.	5
High Int.	12
Adv.	2
Unknown	5
N (General track)	33

Students were asked to rank their own proficiency using the following scale linked to linguistic functions. The purpose of this ranking was to encourage the students to reflect on their own understanding of their language skills and to provide some functional picture of what participants thought they could do in English. The scale was as follows:

What can you do in English? (Pick and circle one box; pick the hardest tasks that you think you can do)

Take university courses or hold a professional job	Talk with friends; read for fun; write e-mail to friends	Use basic English words and sentences only
--	--	--

Participants generally ranked themselves as being able to communicate with friends or to perform professional tasks in English.

<i>Table 3.5: Level self-report</i>	<i>n</i>
University	55
Friends	35
Basic	6
Basic / Friends	2
Friends / University	1
Unknown	2
Total N	101

As another means of understanding the overall skill level the students had in English when they entered the study, they were asked to report on their best score on the TOEFL, either the computer-based test or the traditional, paper-based test. Not all students reported TOEFL scores, which was one reason for asking them to report on their placement and proficiency levels above. Seventy-eight students reported some form of a TOEFL score. TOEFL data are reported in the following table. For comparison, data for all students taking the TOEFL between July 2001 and June 2002, the most recent data available, are also reported (Educational Testing Service, 2002).

Table 3.6: Participants' Best TOEFL Scores Compared with ETS Data

<i>Participants'</i> <i>TOEFL scores: Computer:</i>	<i>ETS Data</i> <i>(TOEFL-C)</i>	<i>Participants'</i> <i>TOEFL</i>	<i>ETS Data</i> <i>(TOEFL-P)</i>
Maximum	283	300 (max. possible)	657 (max. possible)
Mean	230.2	214	547.96
SD	35.38	47	54.21
Median	235		545
Minimum	140	17 (min. possible)	450 (min. possible)
N reporting	50	572,394	28 116,510

Students were also asked to self-report on their best linguistic skill, again to give a clearer picture of the language skills of the participants. Perhaps reflecting their years of study of English as a foreign language in a classroom setting, slightly more than half the students reported reading as their best skill (58 of 101). The following table summarizes their self-reports.

<i>Table 3.7: Participants' Best Skill</i>	<i>N</i>
Reading	58
Listening	14
Speaking	9
Writing	5
LS	3
RW	2
LR	1
LW	1
Unknown	8
Total N	101

This is a study that involves prior knowledge, and so it was thought that having some idea of the life experience of the participants would be useful in characterizing the sample, and in generalizing to a larger population. Growing up speaking a particular first language implies a range of life and cultural experience. Pursuing a particular field of study or line of work also implies particular experience. Because the study was conducted with students enrolled in a university-based intensive English program, it was assumed that many of the students would have undergraduate degrees, perhaps graduate degrees or interests, and perhaps professional experience. Therefore, students were asked to report on these. The most widely reported measure proved to be the undergraduate field. Of this group of ESL students, 89 of 101 reported an undergraduate field. Therefore, data for undergraduate major are reported here. For the most part, participants reported having studied at the undergraduate level in the fields of business, engineering (including computer science and information technology), the sciences, and social sciences (including economics and education); these fields accounted for 64 of 101 participants. The remainder of the participants reported training in humanities (including languages and mathematics), fine arts, law, medical fields (including medicine, nursing, and pharmacy), agriculture (crop

science), social work, textiles, or did not list an undergraduate field (12 respondents). The following table offers a summary:

<i>Table 3.8: Participants' Undergraduate Fields</i>	<i>n</i>
Business	22
Engineering	22
Sciences	10
Social Science	10
Humanities	8
Fine Arts	6
Law	5
Medicine / Nursing / Pharmacy	3
Ag (Crop Science)	1
Social work	1
Textiles	1
Unknown	12
Total N	101

Of the 12 students, who did not report an undergraduate field, six did report graduate studies in either business (3), engineering (2), or pharmacy (1).

Listening Texts

Two listening selections, a video discussion and an audiotape, were used in the study. This section describes the preparation of the video and the audio.

To operationalize the concept of prior knowledge for the topic of a discussion, students in the experimental condition were primed by hearing an audiotape, the topic of which served as the subject for a discussion among three native English speakers. The discussion of the native speakers was videotaped. The priming condition in this study was

used because of the variety of backgrounds among the students. Unlike studies that chose presumed familiar or unfamiliar topics for known populations, such as U.S. or Taiwanese students (Long, 1990; Schmidt-Rinehart, 1994; Chiang & Dunkel, 1992), or that relied on religious background (Markham & Latham, 1987), or that relied on major field of study (Chung, 1999), this study drew from a diverse population. There was a concern that a presumed familiar or unfamiliar topic would either be difficult to locate, or would be familiar to such a small subset of the population that the sample size would be too small for analysis. A topic from an ESL textbook (Dunkel et. al., 1996) – male-female communication as cross-cultural communication – was therefore chosen on the assumption that the topic would be broadly accessible to students in this population without strongly favoring a small subset of the population. Students in the primed group would therefore be able to retain enough of the content of the audiotape to have their additional prior knowledge reflected in their attempts to follow the subsequent discussion.

One concern in comprehension tests is the difficulty of isolating the comprehension skill (Steinberg et. al., 2001; Buck 2001). Is one actually measuring listening comprehension, or reading comprehension, or writing, or speaking? To limit the overlap with other language skills, it was decided to use an audio priming, rather than having the students read

to be primed. In addition, students in the priming group did receive the topic of the audiotape, as in other comprehension studies (Tyler, 2001). However, no participants received the topic of the discussion before hand. The attempt here was to distinguish the primed group, who presumably had knowledge of the topic of the discussion, from the control group, who did not.

Because recorded monologues are a common feature in ESL texts and in second language listening studies (Lim & Smalzer, 1996; Dunkel et. al., 1996; Markham & Latham, 1987; Long, 1990; Lund, 1991; Chiang & Dunkel, 1992; Schmidt-Rinehart, 1994; Chung, 1999), and as it was drawn from a textbook, the audiotape used for priming was simply taken as it was. One element of difficulty listeners may face in trying to understand a text is the number of elements they must account for (Anderson & Lynch, 1988). Accounting for more than one speaker would therefore present a challenge to listeners. This, of course, is one of the central points of the present investigation of discussion. However, in order to assist participants in following the discussion, a video format for the discussion was chosen. Listeners would therefore have the appearance of the discussants and visual cues to help them distinguish one speaker from another, and so to help them understand the discussion, rather than simply having to rely on purely aural differences, such as differences in

tone or pitch of voice. The use of video has become common in second language teaching. In particular, video can provide listeners with more authentic texts that include paralinguistic information (Omaggio-Hadley, 1993). Video has been widely used in the context of teaching ESL listening comprehension because of beliefs that it provides greater authenticity than audio alone (Coniam, 2001). As a medium for the presentation of listening texts for testing, however, Coniam raised concerns about the validity of video-based tests, since the very extra-linguistic features that video presents also introduce variability into the testing situation. Still, Coniam found no difference in the comprehension of two groups when taking the same listening test when presented in audio and video media (2001). Allowing for possible limitations to the study because of the use of video, it was decided that the benefit to listeners of seeing the discussants outweighed possible validity concerns. Therefore, the discussion was presented in video.

To develop the video discussion, three graduate student colleagues of the researcher, all students in foreign language education, listened to a portion of a lecture from an ESL textbook (Dunkel et. al, 1996) and then discussed their thoughts in response to two questions also drawn from the book. The textbook was chosen because it had been in use with students in previous semesters at the intensive English program, so it was

assumed that the topic of the listening and discussion, “Male-female conversation as cross-cultural communication,” would be accessible to the intended research participants, but not necessarily familiar to them. The three graduate students engaged in producing the discussion text were all adult, native speakers of American English. Two were female; one of the females was a bilingual speaker of American English and Mexican-American Spanish.

Their discussion was videotaped in a conference room available to the researcher, using analogue VHS tape and consumer-grade video cameras. Two video cameras were used to create two tapes of raw footage. One was archived for backup purposes. The other was used to develop the discussion video watched by participants in the study. The discussants spoke for approximately eight minutes. The researcher watched the discussion and selected the initial 2:33 of the discussion for use in the study because Discussant B, selected by the researcher as a leader for the discussion, stated one of the two questions treated in the discussion. The researcher therefore chose this portion for preparation of the video master, assuming it would be accessible to the study participants.

Editing the Video

Initially, the video was edited using analogue equipment to reduce tape noise, increase the volume of the conversation, and reduce a background hiss from the air-conditioning system in the conference room. In addition, the researcher edited the tape to remove the single reference to one of the discussant's names in the video, thus preserving their anonymity. The results, using 2 Panasonic AG 1980 S VHS video decks, a Pro-line Desktop Editor with Panasonic AG A96 Editing Controller, and a 10-channel audio frequency equalizer, proved unsatisfactory, as judged by the researcher, his supervisor, and colleagues. The volume of the conversation was too low and the hiss too prominent. An attempt at having the video edited professionally in a campus media lab also was unsatisfactory. As a result, the raw video was digitized by copying it to Hi-8 format videotape using a digital video camera. The resulting digital footage was then copied to an Apple iMac computer and edited using iMovie 2.0.3 (2000). The soundtrack was excerpted from the video and was edited separately using SndSampler 4.4.2 (Glenn, 2000). Based on feedback on earlier versions of the discussion tape, the researcher decided that the major problem was that the discussion was not loud enough. Therefore, the researcher increased the amplitude of the soundtrack by 150 percent, and then pasted the louder soundtrack back

into the iMovie clip, matching the sound to what appeared on the screen. The resulting edited clip was then copied and pasted to allow the research participants to see the video discussion twice. This clip was then paired with an introductory video clip the researcher recorded to allow him to thank participants and check sound levels. The researcher recorded the introductory clip in the same conference room as the discussion, using the digital camera. This clip also was edited with iMovie, and subsequently was copied and pasted to allow for two iterations. Sound levels in both clips were judged to be similar. Black screens and fade-ins and fade-outs were added between the clips and before the first iteration of the introductory clip and after the second (and final) iteration of the discussion clip. The resulting movie was then exported from iMovie and the computer to a second digital video Hi-8 tape to form a digital master. This master was then copied to three analogue VHS cassettes to create three final tapes, one each for the experimental and control groups respectively, and one backup. The final VHS tapes were judged acceptable for use in the study by the researcher, his adviser, and colleagues.

While the discussants signed release forms, to protect their identities, their names did not appear in the video used in the study. Each speaker was identified on the video by a letter (A, B, C) to allow listeners to distinguish one from another. The portion of the discussion used was

504 words long. They spoke for 2 minutes and 33 seconds, at a rate of 198 words per minute, a “moderately fast” rate (Pimsleur, Hancock, & Furey, 1977).

Audiotape

A portion of the listening from Dunkel et. al. (1996) was also used to provide a priming listening text for the study participants. The portion chosen had been a discussion prompt for the video discussants. Moreover, one of the topics in the priming text, the differences between boys’ and girls’ play, was raised in the video discussion. The researcher specifically included this topic in the priming listening text to ensure commonality of topics between the priming text and the videotext. The priming text, a lecture developed for the textbook, was delivered by a female speaker of north American English. It was 429 words long, ran for approximately 3 minutes, and was delivered at a rate of 143 words per minute, a “moderately slow” rate (Pimsleur et. al., 1977).

Comprehension Tasks

Research participants answered three types of questions to provide insight into their comprehension processes. First, a series of statements was developed from the transcript of the video discussion. Participants checked which statements they actually heard on the video. Second, participants wrote a free written recall of the video discussion. They were

allowed to write in English or in their native language. They were allowed to answer in their native languages to avoid biasing the results against participants who might understand well but write poorly in English. Finally, participants wrote short answers to questions prompting them to predict what they would hear next in the discussion. If comprehension has a top-down, predictive element to it (Lund, 1991; Buck, 1995; Flowerdew, 1994; Rivers & Temperley, 1978; Mendelsohn, 1998), then comparing participants' predictions of the direction of the discussion with what the discussants actually said was seen to be a valid means of getting at comprehension.

Survey Questions

In this study, experience with discussion was operationalized broadly, to mean positive experience with discussion as a genre. Participants in the study answered 11 survey questions about their experience with conversation, discussions in professional and classroom settings, and their beliefs about the efficacy of discussion in helping them learn English. Participants' recorded their answers using a 5-point Likert scale. Survey questions are reproduced below:

1. I often participate in casual conversations in English, like with friends.
2. I often participate in class discussions.
3. I often lead class discussions.
4. Discussion was a common method of education in my country.

5. I have had jobs in situations where we often had meetings and discussions in English.
6. I usually understand what I hear in class discussions.
7. In class discussions, I usually understand my classmates.
8. In class discussions in English, I usually understand my teacher.
9. I like participating in class discussions.
10. I learn English from participating in class discussions.
11. I plan to use English in discussions in the future.

The purpose of the questions was to probe students' beliefs about discussion and about their experience with and comprehension in discussions, while at the same time keeping the survey instrument to a reasonable length, coming as it did near the end of their participation in the study

Practice TOEFL Listening Section

To provide a common measure of listening proficiency, participants took a practice listening section from the Test of English as a Foreign Language, [TOEFL] (Education Testing Service, 1998, pp. 229-237). There is precedent in listening research for using a practice TOEFL listening section as a common measure of listening skill (Kim, 2000; Chung, 1999). As a widely used, standardized assessment, the TOEFL is highly reliable (Kim, 2000). Still, subsection scores may have to be treated with caution. Wainer and Lukhele (1997) reported high reliability for the TOEFL as a whole, but, using item response theory, found that the practice of grouping numbers of questions around single texts – as in the reading and listening sections –

can introduce local dependence and result in lower reliability for subsection scores. As a listening test, the TOEFL does have its limitations. In examining the listening section of a practice computer-based TOEFL, Buck (2001) found that it tested pragmatic knowledge in addition to grammar and vocabulary as applied to listening. Still, the test underspecified the construct of listening by using scripted texts that were inauthentic in terms of interaction and oral features. Moreover, because the questions appear after the listening, Buck argued that listeners have no clear reason for listening; in addition, the questions appear to focus more on a listener's ability to recall and make inferences about what was said in the text, rather than his or her ability to listen, analyze, and respond to what was said. Buck reported missing some questions because he was critiquing ideas presented in a simulated linguistics seminar rather than simply listening for the facts of the text. Discussion listening, then, would seem to be underspecified as a construct (Buck, 2001, pp. 222-223). Despite these limitations, however, the test is widely known. Any test would have limitations, and the listening section of the TOEFL does provide a format known to test participants in this particular study, perhaps reducing irrelevant variance caused by unfamiliarity with the test format. In addition, it does provide a common yardstick with which to compare this group of participants. Finally, any response to spoken

language, whether analytical or simple recall, requires the use of memory. Answering recall and inference questions is not necessarily an inauthentic task. With caution, then, the listening section was used.

Chapter 4: Results

Data were gathered from 101 intensive English students between the Spring semester of 2002 and the Fall semester of 2003. Study participants were randomly assigned to control and experimental groups. Experimental participants heard a short audiotape comparing male and female communication styles. Both groups then watched a videotaped discussion among three English speakers concerning male-female communications as a form of cross-cultural communication. The audiotape and the discussion question were both drawn from an ESL text (Dunkel et. al., 1996), and, as a prompt to their discussion, the discussants heard the audiotape presented to the study participants in the experimental group. All participants completed three listening tasks: (1) choosing from a list of eight statements those that were made in the video; (2) writing a recall of the video; (3) predicting what the discussants would say next in the video. Participants completed a survey of their personal backgrounds and of their experience with discussion as a genre of communication and then took a listening assessment, a practice TOEFL listening section (Educational Testing Service, 1998). Hypotheses were that the experimental group, being primed by the audiotape, would have greater prior knowledge for the topic of the discussion and so would

understand more of the discussion, as measured by the tasks; that better listeners, as identified by the listening assessment, would understand more of the discussion than would poor listeners; that prior knowledge of the topic of the discussion and listening skill would interact in a manner helpful to listeners; and that participants more experienced in discussion, as identified by the survey, would understand more of the discussion than would participants with less discussion experience. Results are presented here.

Questions and Hypotheses 1, 2, and 3

The design of the experiment called for analyzing participants' responses in terms of a 2x2 matrix, as follows:

Table 4.1: Analysis for Research Questions 1-3

	High prior knowledge (HPK) – Experimental group	Low prior knowledge (LPK) – Control group
High listening skill	HPK and high listening	LPK and high listening
Low listening skill	HPK and low listening	LPK and low listening

The independent variables were the placement of the IEP students into Experimental (primed – HPK) and Control (LPK) groups by random assignment and into high and low listening groups based on their scores on the practice TOEFL listening section. The dependent variable is listening comprehension for the videotaped discussion. This dependent

variable was arrived at by aggregating participants' responses on the three listening tasks.

Participants Included

Of 174 IEP students recruited for the study, the data from 73 were eliminated from data analysis for this study; 63 students reported having used the Dunkel et. al. (1996) for English study or having studied male-female communication; it was felt that their greater familiarity with the contents of the priming tape and the discussion would skew the results. The data from eight students were eliminated from analysis because these students were not new to the IEP and were allowed to participate in data collection to check procedures. One student was eliminated because of testing irregularities in one data collections session. One student was eliminated because he chose not to complete the comprehension tasks, and so provided no data for analysis. Data from 101 IEP students were analyzed and are presented, therefore.

Listening Tasks

Task 1: Short Answer

The IEP students were asked to complete three different kinds of comprehension tasks in order to give them a chance to demonstrate comprehension in distinct ways. The initial statement identification task was based on other listening tasks that ask students to respond to

discrete-point questions about details and main points of a reading or listening passage (Chung, 1999). Students were asked to choose from a list of eight statements the four that were actually made in the video. Students could earn a maximum score of eight on this task, by correctly marking the statements made, and by not marking the distracters. The principal investigator scored this task.

Task 2: Written Recall

The second of the three tasks was a recall protocol; participants were asked to write down everything they could recall from the video. They were allowed to write in their native language or in English. Recall protocols are commonly used in comprehension studies, in both the reading and listening modalities, though not without debate and discussion (Markham & Latham, 1987; Long, 1990; Lund, 1991; Schmidt-Rinehart, 1994; Chung, 1999). Because listeners rely on memory in order to make sense of what they hear (Bransford & Johnson, 1972), a common approach to scrutinizing what is basically a “black box” process is to ask listeners to write what they can remember from a listening text. The technique is applied in both reading comprehension and in listening comprehension. In discussing the use of recall protocols in second language reading research, Urquhart and Weir (1998) summarized discussion concerning the use and weaknesses of recall protocols. There is

the problem of confounding writing skill and reading skills (see also Buck, 1995). Recalls may not capture everything readers have understood. Scoring recall protocols involves dividing the original text, and the recalls, into units for scoring, a subjective process. Describing the structure of information in a text – main and subordinate ideas – and creating a metric for this structure so as to score recalls is not transparent. Indeed, even creating a scoring rubric involves comprehension inferences on the part of the examiner, such that the scoring rubric itself could be said to represent an additional text (Brown & Yule, 1983a). Moreover, what the listeners produce is not a transcript of what they have heard, but an interpretation. In that sense, recall protocols are exactly a form of getting at comprehension. However, listeners may elaborate upon or distort the information that they hear (Markham & Latham, 1987; Lund 1991). These changes themselves may be significant (Rost, 2002), but may also present challenges to the researcher trying to measure how much of a text students have comprehended. Still, though it is not without its problems, the method has been applied in second language listening comprehension, and has been used successfully to make inferences about subjects' comprehension. Markham and Latham (1987) did find that prior knowledge in the form of religious background either aided listening comprehension or apparently encouraged misunderstanding. Lund (1991)

used recalls to compare reading and listening comprehension, finding that listeners tended to introduce more distortions into their recalls, and to remember more main ideas than did readers. Schmidt-Rinehart (1994) also used recall procedures, as did Chung (1999). As a result, because this method has been used in prior second language listening studies, despite its limitations, it has been employed here as one task to capture participants' listening comprehension.

To produce the recalls, upon completing the short answer listening task, participants were asked to respond to the following prompt:

Please write down as much as you can recall from the discussion on the video. You may write in English or in your native language. You may refer to your notes. Please write only on this page. Thank you!

Participants were allowed to take notes when they watched the video, or, in the case of the experimental group, also when listening to the priming audiotape. The notes will be analyzed at a later time and not included here because participants were not specifically asked to take notes and because the notes were not produced in response to a specific listening task that itself is linked to one of the research questions motivating this investigation.

The vast majority of the participants (91 of the 101 considered here) chose to write recalls in English; four chose to write recalls in their native

Spanish; one wrote in English except for one word in Spanish; one responded in Korean; two chose to respond in Chinese; one answered in German, and one answered in Mongolian. It may be that the participants responded primarily in English because the investigator and colleagues assisting him were native English speakers. Thus, it may have been that despite the investigator's assurances that translators could be found, most participants chose to respond in English to aid the investigator. They may also have made this choice simply because they were involved in intensive English study and may have seen the recall task as another opportunity for practice. At any rate, most of the recalls were in English.

A function of discussion is for the participants to share their views of reality; in the case of a classroom, this often means comparing their opinions on a common text (Bligh, 2000; McKeachie, 1994). A key requisite for understanding a discussion would seem then to be comprehending both the topic being discussed and the discussants' views on this topic. Hence, Bligh's assertion that discussion implies a shared base of common knowledge (2000). In this study, participants were cast into the role of silent partners in the discussion. They were asked to follow the discussion without commenting, experiencing "delayed negotiation" (Lynch, 1995). Therefore, to measure listening comprehension, study participants should

be held accountable for their understanding of the topic being discussed and the discussants' opinions.

As noted above, a common problem in scoring recall protocols is accounting for the information structure in the original text and how it is represented both in the original text and the recall protocols. As Lund (1991) found, listeners are more likely to recall main ideas than details; readers are more likely to accurately recall details. At the same time, listeners may recall, elaborate upon, or distort details in the original text, and recall of both the main ideas and the details may be influenced by listeners' prior knowledge (Markham & Latham, 1987; Lund 1991). Because listeners are not tape recorders but interpreters (Rost, 1990; 2002) and because comprehension involves inference from prior knowledge (Brown & Yule, 1983a), written protocols should therefore be scored in such a way as to allow for recall of both main ideas and details.

As a result, a two-level scoring rubric was developed for the present study. An analysis of the transcript of the video used as a text in the study revealed that it has four basic components: the question being discussed, and the three speakers' answers to that question. The table below represents this.

<i>Table 4.2: Structure of the Video Discussion</i>
1: The question: Speaker B to C: "Do you think that cross-gender communication can be considered as a form of cross-cultural communication?"
2. Speaker C's response: No. Individual differences are more important.
3: Speaker B's response to Speaker C: Disagrees with Speaker C. Gender differences are more important than individual differences.
4: Speaker A's position: Agrees with B. Disagrees with C.

The table follows the conversation chronologically (see the transcript in the appendix). First, Speaker B poses a yes / no question to Speaker C. Speaker C responds that individual differences are more important than gender differences in determining communication style; that is, cross gender communication is not a good example of cross cultural communication. Speaker B follows Speaker C's comment by disagreeing. Speaker A agrees with Speaker B. So, to account for comprehension of main points, participants were rated on their ability to account for these major points in their recalls. That is, could the participants identify who posed the question, what question was discussed, and each discussant's answer to the question? For each of these major points, participants' responses were rated on a 0-5 scale and then averaged across the major points:

0 – Answer incomprehensible	1 – Comprehensible answer but misses the point	2	3 – About half the idea	4	5 – Fully captures the main ideas
-----------------------------	--	---	-------------------------	---	-----------------------------------

The second level of rating focused more on the smaller units of the passage. Traditionally, as Urquhart and Weir (1998) noted, parsing a text into units has been problematic. In this study, a method based on Johnson (1973) and similar to one used by Schmidt-Rinehart (1994) was developed. While many studies have attempted to identify idea units and to map comprehension on to them, in the present study, the transcript of the videotext was parsed first into pause units, similar to Johnson (1973). To divide the text into smaller units for more accurate scoring, the text was then further parsed into clausal units. When pausal units were short and discernible but were not clauses, the pause unit was used. Speaker B's comment: "Girls for example," was parsed as a separate unit even though it is not a clause. Units were numbered. The scoring version of the transcript is appended.

To score the protocols, the investigator made two copies of the original protocols and had them re-coded by a colleague. The investigator then read and scored the protocols without knowing which protocols

belonged to participants in the experimental group and which belonged to participants in the control group. Each protocol was read twice, first for main-point comprehension and second for content unit comprehension. A second colleague read and scored a random 20 percent of the protocols to ensure consistent scoring. Inter-rater reliability between these two readings was high. The correlation between the two readers for main-point ratings was .96, at an alpha of .05. The correlation between the two readers for detail (content unit) readings was .92, at an alpha of .05.

The principal investigator scored all non-English protocols. For the four protocols written in Spanish, the principal investigator scored them and asked a bilingual Spanish-English speaking colleague to also score them for verification. The correlations between the two readers were .85 for main points, and .88 for content units, both at an alpha level of .05. This was judged to be acceptably high. The recall written in English with one Spanish word was scored as an English recall. The recalls written in Chinese, German, Korean, and Mongolian were translated by native-speaker graduate students the principal investigator recruited. The principal investigator then scored the translations.

Task 3: Prediction

An assumption of work in second language comprehension is that listening, and reading, can be predictive because prior knowledge helps

the listener makes those predictions. It seems reasonable to test this by asking participants to make predictions about what they would hear in a discussion. Moreover, making predictions about a listening selection is a commonly used teaching task recommended by current textbooks (Lim & Smalzer, 1996). Of course, we commonly do make predictions about our environment based on our prior knowledge. Safe drivers anticipate hazards and try to avoid them. Bartlett (1967) used the analogy of a tennis stroke to explain the role of organized prior knowledge (schemata). Hitting a moving tennis ball obviously involves predicting the location of the ball, and the stroke is partly based on the player's experience. In terms of second language listening, Buck (1995) points out that listening is predictive because predictions can be incorrect.

The prediction assumption is not accepted without discussion, however. A common debate in second language listening and reading comprehension research is whether comprehension is more predictive in nature, proceeding top-down from prior knowledge and assumptions to extracting the message from the language stream, or whether comprehension is more, for lack of a better word, reactive, proceeding in a bottom-up manner by assembling the message from bits of received language and only later making reference to the listener's assumptions and prior knowledge. Carrell and Eisterhold (1983 / 1987) argued that it

was possible for a listener to be hindered by either the text or by his or her prior knowledge. Lund (1991) found evidence that listeners tended to comprehend more general propositions and to introduce more of their own distortions into the details of a message than did second language readers. Flowerdew (1994) has argued that second language listening comprehension is enigmatic, arising from both top-down and bottom-up processes, but in a presently obscure way. A reasonable task to measure the predictive nature of second language listening comprehension would seem to be to ask listeners to make predictions about what they are going to hear next in a discussion and then compare these predictions with what was actually said. The prediction task in this study did just that.

Participants were asked to briefly write what words or ideas they expected to hear next from each of the three discussants. To evaluate their predictions, the researcher compared their predictions with a transcript of that portion of the videotaped discussion not presented to the study participants. This portion was approximately 5:46 in length and ran to the discussion's conclusion. This transcript is also included in the appendix.

The researcher evaluated the participants' predictions by rating them on a 0 to 5 scale, reproduced below:

Table 4.4: Prediction Scoring

0 Answer incomprehensible	1 Clear answer, but inaccurate prediction	2 Minimally accurate prediction	3	4	5 Highly accurate prediction.
---------------------------------	--	--	---	---	--

Participants' predictions were ranked by comparing their predictions concerning what each of the three discussion participants would say next in the discussion. Because in a discussion, the topic and the discussants' views on the topic are important, participants' predictions were ranked based on whether they accurately forecast the opinions the discussants would hold in that portion of the discussion not used as a listening text in the study. Study participants were evaluated on how accurately they predicted what the discussant would say and whether they would maintain their opinions. Specifically, participants were asked:

What do you think the three students will discuss next?
Please write brief completions to the following statements:

I think that Speaker A will use these words or ideas next in the conversation:

I think that Speaker B will use these words or ideas next in the conversation:

I think that Speaker C will use these words or ideas next in the conversation:

The principal investigator ranked the participants' accuracy in predicting what the discussants would say on a 0 to 5 scale, with 0 being an incomprehensible answer, 1 being a highly inaccurate answer and 5 being a highly accurate answer. Responses for participants' were averaged across all three discussants to obtain one score for the prediction task. Responses from participants who left the task blank were not scored.

Data aggregation

Data from all the listening tasks were aggregated for analysis. The different listening tasks aimed to give participants means to demonstrate comprehension in different ways, but the original study model called for one final measure of listening comprehension. Additionally, while analyzing each task as a dependant variable was considered, the sample size is not adequate for such an analysis. Allowing for at least three experimental conditions (prior knowledge, listening skill and discussion experience), four dependant variables (short answer, recall: main ideas, recall: content units, and prediction), and ideally, 20 participants in each condition, the study would require a total of 240 participants (3 by 4 by 20) (Stephens, 1996; Hays, 1994). Given that recruiting 101 participants took six semesters (Spring 2002 through Fall 2003), there could be questions about the uniformity of the sample of students enrolled if data collection

were extended over additional semesters. Therefore, the data from each of the tasks were aggregated.

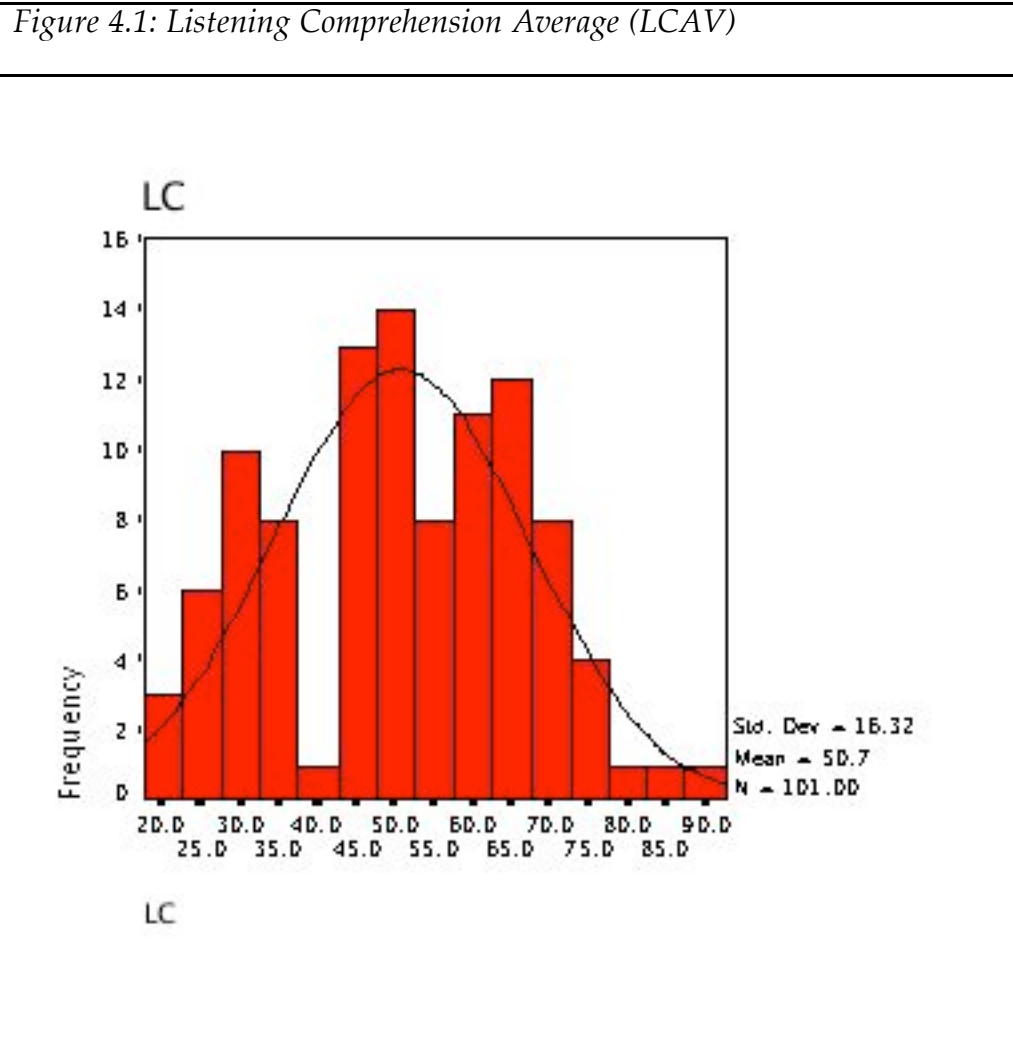
Below is a table showing descriptive statistics for each of the four tasks. As can be seen, some tasks have missing data (Recall: Main Points [MP], Recall: Content Units [CU], and Prediction [PRED]). In addition, results of the MP tasks show a multi-modal distribution, and all the tasks have some degree of skewness.

Table 4.5: Statistics : All tasks						
		Short Answer (SA)	Recall: Main Points (MP)	Recall: Content Units (CU)	Prediction (PRED)	
N	Valid	101	97	97	94	
	Missing	0	4	4	7	
Mean		6.11	2.5696	9.92	1.787234	
Median		7.00	2.5000	9.00	1.666667	
Mode		7	.75(a)	4	1.6667	
Std. Deviation		1.685	1.52997	4.987	1.1283795	
Skewness		-1.250	.035	.432	.811	
Kurtosis		1.675	-1.302	-.313	.368	
Range		8	5.00	24	5.0000	
Minimum		0	.00	1	.0000	
Maximum		8	5.00	25	5.0000	
a Multiple modes exist. The smallest value is shown						

To aggregate the data, results from each task were put on a percentage scale. For the Short Answer task, the Recall: Main Point task and the Prediction Task, students' results were measured against the maximum possible score (SA: 8 correct; MP and PRED: maximum rating of 5). For the Recall: Content Unit task, the highest number of units any student received – 25 units – was used as the standard of complete comprehension. IEP students, like any person, are not tape recorders, and so cannot be expected to remember every unit from the discussion. The following table and figure show the descriptive statistics and the frequency distribution of the aggregated listening comprehension variable, called Listening Comprehension Average (LCAV). Though still somewhat multimodal and skewed, the aggregated data more closely satisfies the standard statistical assumptions of normality and independence of observations, because all of the tasks are treated as one observation after averaging (Stephens, 1996; Hays, 1994).

<i>Table 4.6: Statistics : LCAV</i>		
N	Valid	101
	Missing	0
Mean		50.827970
Median		50.291667
Mode		50.2917(a)
Std. Deviation		16.2979833
Skewness		-.003
Kurtosis		-.673
Range		73.6667
Minimum		18.7500
Maximum		92.4167
a Multiple modes exist. The smallest value is shown		

The following graphic shows the distribution of the LCAV variable.



There are no missing data in the aggregated results. Participants did not have to complete all tasks. If an IEP student chose not to complete a task, that student's comprehension score was averaged from the tasks he or she did complete. No imputation of comprehension was made for

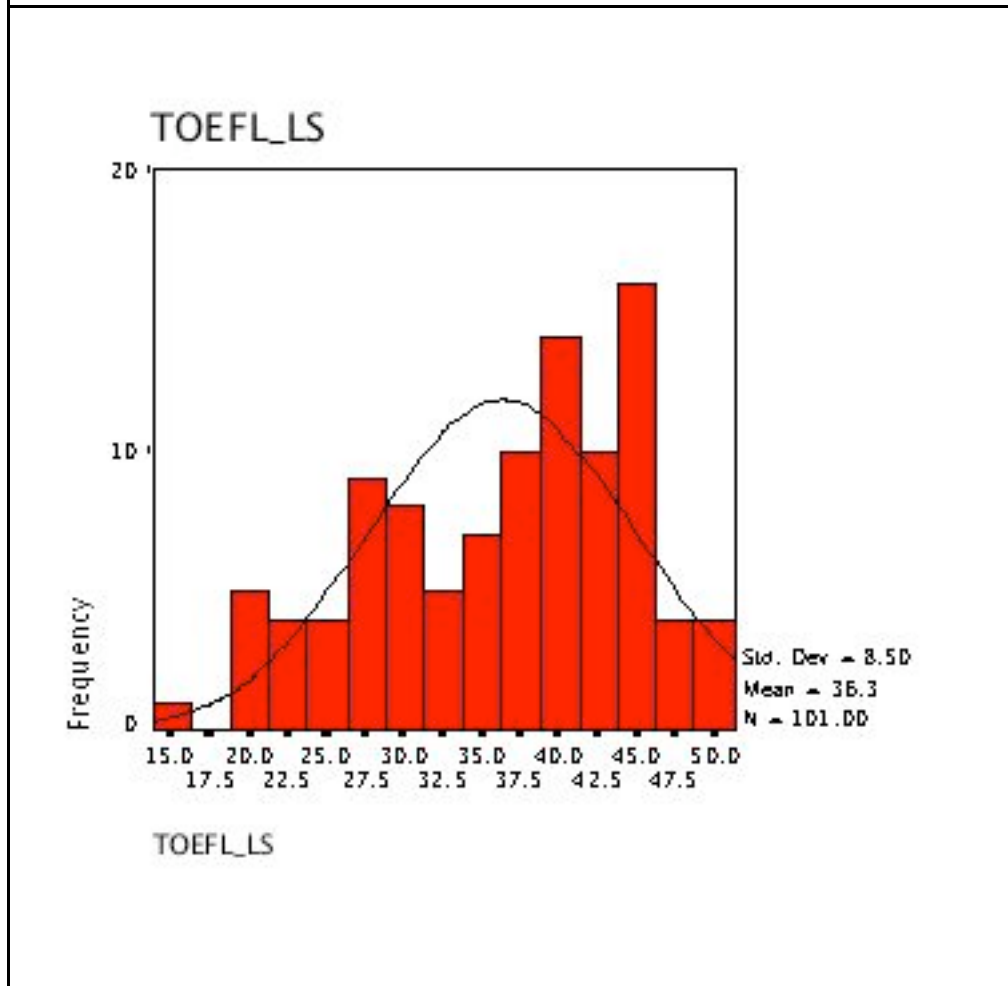
any tasks a student did not complete. The result is a common comprehension score for all the students who participated in the study.

Listening Skill

Participants' listening skill was measured by examining their performance on the practice TOEFL listening section. The number of questions out of 50 that a student answered correctly was taken as that student's listening measure. Regarding students' performance on the TOEFL listening section, those scores also failed to follow a normal distribution, showing instead a slight negative skew. The following table and figure show the descriptive statistics and the distribution for the listening skills measure.

<i>Table 4.7: Statistics: TOEFL_LS</i>		
N	Valid	101
	Missing	0
Mean		36.32
Median		38.00
Mode		45
Std. Deviation		8.497
Skewness		-.470
Kurtosis		-.714
Range		36
Minimum		14
Maximum		50

Figure 4.2: Practice TOEFL Listening Scores



The study design requires thinking of participants as having higher or lower listening skills. Participants were grouped as higher or lower listeners based on their scores on the listening skills measure. IEP students who scored at or below the mean on the practice listening section (36

correct or fewer) were grouped as low listeners. Participants who scored above the mean on the listening measure (37 correct or more) were considered skilled listeners for this study.

Results for Research Questions 1, 2 and 3

An analysis of variance (ANOVA) was performed on the aggregated results of the listening tasks, with students grouped by experimental condition and listening skill. The following tables report the results of the ANOVA. The first table reports the descriptive statistical data for the analysis. The units for the mean for the dependant variable are percentage. With the exception of the group of participants in the control condition with low listening skill (19 participants), each cell has at least 20 participants in it, which is of sufficient size to allow for protection against both type 1 and type 2 (beta) error. Type 1 error (alpha) is the probability of falsely rejecting a true null hypothesis, that is, the probability of incorrectly saying two groups of participants are different, when the difference in fact arises from statistical error. Type 2 error (beta) is the probability of falsely rejecting a true experimental hypothesis, that is, of incorrectly saying two groups are the same, when, in fact, they are different. With a sample size of 20 and four groups, an ANOVA has sufficient statistical power (1-beta) to detect a difference in the groups with

even a small to moderate effect size. (For a discussion, see Hays, 1994, pp. 282 –293; 331-334; 408-410, and p. 1032)

Table 4.8: Descriptive Statistics Dependent Variable: LCAV

Condition	Listening skill	Mean	Std. Deviation	N
Control (LPK)	Low	40.043860	14.6553149	19
	High	61.594828	14.2294952	29
	Total – Control	53.064236	17.7852677	48
Experimental (HPK)	Low	42.039931	14.2307824	24
	High	54.399425	12.7815151	29
	Total - Experimental	48.802673	14.7009591	53
Total	Low – Total	41.157946	14.2812811	43
	High – Total	57.997126	13.8882753	58
	Grand Total	50.827970	16.2979833	101

The following table reports the results of the ANOVA. In the table, the independent variable prior knowledge of topic is abbreviated as PK. The variable listening skill is abbreviated LS.

<i>Table 4.9: ANOVA Results: Tests of Between-Subjects Effects Dependent Variable: LCAV</i>								
Source	Type 3 SS	df	MS	F	Sig.	Partial Eta Sq.	Noncent. Parameter	Power(a)
Cor. Model	7794.890(b)	3	2598.297	13.429	.000	.293	40.288	1.000
Intercept	240316.102	1	240316.102	1242.074	.000	.928	1242.074	1.000
PK	165.579	1	165.579	.856	.357	.009	.856	.150
LS	7043.323	1	7043.323	36.403	.000	.273	36.403	1.000
PK x LS	517.464	1	517.464	2.675	.105	.027	2.675	.367
Error	18767.536	97	193.480					
Total	287494.165	101						
Cor. Total	26562.426	100						
a Computed using alpha = .05								
b R Squared = .293 (Adjusted R Squared = .272)								

Answers to Research Questions

Research Question 1

It was expected that prior knowledge would aid comprehension. In fact, as the descriptive statistics show, it apparently did not. As a whole, the experimental group demonstrated less comprehension than did the control group, and, moreover, fell below the overall average for the participants as a whole.

<i>Table 4.10: Prior Knowledge Scores in Percent</i>			
Group (PK)	Mean	Std. Deviation	N
Control (LPK)	53.064	17.79	48
Experimental (HPK)	48.80	14.70	53
Total	50.83	16.30	101

As the ANOVA table shows, the students in each condition did not differ in their comprehension in a statistically significant way (F for PK = .856; Sig: .357; alpha = .05). No argument can be made regarding the effect of prior knowledge of topic on listening comprehension based on these results.

Research Question 2

It was expected that listening skill would aid comprehension, with better listeners understanding more than poor listeners. As the following table shows, better listeners did indeed perform better than less proficient listeners.

<i>Table 4.11: Scores of High and Low Listeners in Percent</i>			
Listening skill	Mean	Std. Deviation	N
High LS	58	13.89	58
Low LS	41.16	14.28	43
Total	50.83	16.3	101

This difference was statistically significant; better listeners did outperform less skilled listeners (F for LS = 36.403; Sig. = .000; alpha = .05).

Research Question 3

It was expected that prior knowledge for topic and listening skill would interact, with the interaction aiding comprehension. There was, in fact, no evidence of an interaction between prior knowledge and listening skill, as the following table shows.

Table 4.12: Scores: Prior Knowledge by Listening Skill, in Percent

Condition x Listening	Mean	Std. Deviation	N
Control, High listening	61.59	14.23	29
Experimental, High listening	54.4	12.78	29
Experimental, Low listening	42.04	14.23	24
Control, Low listening	40.04	14.66	19
Total	50.83	16.3	101

It appears that for low listeners, being in the experimental condition resulted in slightly better performance on the comprehension tasks (+2 percent). For the high listeners, however, being in the experimental condition may have represented a hindrance, because high listeners in the control group performed better than did high listeners in the experimental group. On the other hand, high listeners in the experimental group had the lowest overall variance in their scores. The result likely represents error variance, in that the differences were not significant. The null hypothesis was not rejected; no evidence was found to argue for a significant interaction between prior knowledge of topic

and listening skill on this listening test ($F_{PK \times LS} = 2.675$; Sig. = .105; alpha = .05).

Research Question 4

The fourth research question deals with students' familiarity with the discussion genre. Researchers in comprehension who have interests in prior knowledge identify familiarity with text type, or perhaps, genre, as one possible kind of prior knowledge that may aid in second language comprehension (Carrell & Eisterhold, 1983 / 1987; Chu, 1999, 2004). It seemed reasonable, therefore, to survey participants in the present study on their familiarity with and attitude towards discussion. Participants in the study answered 11 survey questions about their experience with conversation, discussions in professional and classroom settings, and their beliefs about the efficacy of discussion in helping them learn English, as mentioned earlier.

Some questions directly address students' experience with the discussion format (2, 3, 4, 5); others address students' perceptions about what they understand when participating in discussion (6, 7, 8). Other questions address students' beliefs and attitudes about discussions (9, 10, 11). One question addresses students' willingness to engage in talk in English in a casual setting, the underlying assumption being that comfort

with conversation in a second language will be related to their attitudes toward or experience with discussion.

Analysis of the survey data

Of the 101 participants whose data is analyzed here, 100 completed at least some of the survey questions; one student answered none of the questions and so was dropped from this part of the analysis. Given the relatively small sample size for the present study, and given that the overall purpose of this research question was to make inferences about students' overall experience with and attitudes towards discussion, participants' responses on all of the survey questions were aggregated to provide an overall measure of student attitude and experience. That is, participants were grouped based on whether they reported high or low experience with discussion, understanding in discussion, positive attitudes towards discussion, and willingness to engage in conversation.

Averaging

The various questions on the survey were intended to probe students' experience with discussion, and their beliefs about the format, as noted above. It was hypothesized that students with more experience in discussion would have better comprehension of the videotaped discussion. In addition, an assumption here is that students' experience with conversation, and their perceptions about their understanding in

discussions, the usefulness of discussion as a format for learning, and their expectations about participating in discussion in the future would be related. That is, students with more experience in discussion would generally report understanding and positive attitudes about the experience. Because this was the assumption underlying the questions, one approach to analyzing students' responses was simply to get an overall score for their experience with and attitudes about discussion, with the hypothesis being that students who generally rated discussion as something they were positive about and had experience with would understand more on the listening tasks.

To that end, students' scores across all the questions were averaged together. Participants were not required to answer all questions in the study, so where participants did not answer a question on the survey, the responses they did give were simply averaged together. The question most frequently left unanswered was Question 3: "I often lead class discussions," with seven students not answering this question. This may reflect teaching methods in the students' classes, where teachers may use small group work that is student lead, but may lead whole-class discussions themselves. As for the other survey items, Questions 1, 2, 5, 6, 7, 9 and 10 were left unanswered by one student each, and Questions 4, 8 and 11 were left blank by two students each. This leaves 20 gaps in a data

set of a total of 5500 data points (11 questions x 5 possible responses x 100 students). While gaps in the data do reduce the number of observations, it was felt that averaging all of what the students did provide, rather than omitting all of an individual student's responses, would give a fuller picture of this population. With the exception of the one student who did not complete any of the survey, no student left more than one question blank.

The average of all students' responses across all questions was 3.38. Students who scored above this average were grouped together as having had more experience with discussion, and more positive attitudes about it. Students scoring below this average were placed in the less experienced group. Participants were then compared on their listening comprehension for the video using an ANOVA. The following tables report the descriptive statistics and the results of the ANOVA.

<i>Table 4.13: Low and High Discussion Experience Group Scores, Listening Comprehension Average, in Percent</i>			
Experience	Mean	Std. Deviation	N
Low	47.45	16.43	52
High	54.26	15.64	48
Total	50.72	16.34	100

As can be seen, 52 students were grouped as low experience, and 48 were grouped as high experience. The high experience students had a higher mean comprehension score, and a lower standard deviation than did the low experience students. The following table reports the results of the ANOVA. In the table, the abbreviation “EXP” refers to the independent variable discussion experience.

Table 4.14: ANOVA Results: High and Low Discussion Experience: Tests of Between-Subjects Effects: Dependent Variable: LCAV

Source	Type 3 SS	df	MS	F	Sig.	Partial Eta Sq.	Noncent. Parameter	Power(a)
Cor. Model	1158.034(b)	1	1158.034	4.490	.037	.044	4.490	.555
Intercept	258171.010	1	258171.010	1001.000	.000	.911	1001.000	1.000
EXP	1158.034	1	1158.034	4.490	.037	.044	4.490	.555
Error	25275.493	98	257.913					
Total	283634.649	100						
Cor. Total	26433.527	99						

a Computed using alpha = .05

b R Squared = .044 (Adjusted R Squared = .034)

As can be seen by the ANOVA table, the difference between the two groups was significant (F EXP= 4.49; sig: .037; alpha = .05). The null hypothesis was rejected. It appeared that students who reported more experience with discussion and a more positive experience with it understood more on the listening tasks.

Interpreting Results for Research Question 4

Students who scored high on the survey understood more of the video discussion. This would provide evidence to support an argument

that students who are more familiar with discussion understand more of what they hear in discussion. The results should be interpreted with caution, however, given the low level of significance. The listening comprehension data were subjected to two ANOVAs, one to test Hypotheses 1-3, and one to test Hypothesis 4. In situations of repeated ANOVAs, it is possible for error variance to accumulate in the overall model (Stephens, 1996). A common way to adjust for accumulated error variance in repeated ANOVAs is a Bonferroni correction, in which the overall alpha level is divided by the number of tests performed (University of Texas at Austin Information Technology Services, 2004; Bland & Altman, 1995; Perneger, 1998). In this case, the correction equation would be:

$$.05 / 2 \text{ tests} = .025 \text{ corrected alpha.}$$

In this situation, while the first ANOVA showing that listening skill has an effect on listening comprehension would still be significant, the second ANOVA showing that discussion experience has an effect on listening comprehension would no longer be significant. The Bonferroni correction is not free of discussion, however, and has been seen as too conservative (Perneger, 1998). Taking this stand would mean the second ANOVA would still be significant. Given, therefore, how close the finding is to the bound of significance, it should be interpreted cautiously. A

practical approach would be to infer that it may be significant, and that, from a teaching perspective, discussion should be encouraged in the classroom, while from a research perspective, the findings should be tested. More will be said in the discussion section.

Chapter 5: Discussion

This section will summarize the answers to the research questions, discuss them in the context of the relevant literature, present implications for teaching, state the limitations of the present study, and offer suggestions for further research.

Summary of Procedures and Findings

Students of English as a Second Language in a university-based intensive English program (IEP) were recruited as participants in this study. Participants were assigned to experimental and control conditions. The experimental group listened to an audiotaped portion of a lecture comparing male-female communication styles. The control group did not hear this audiotaped lecture. The portion of the lecture used in the study was drawn from an ESL text (Dunkel et. al., 1996) and was assumed to be accessible to the participants. The experimental group then watched a videotape of three native-English speakers discussing male-female communication as a form of cross-cultural communication. The control group also watched this videotaped discussion. The three native-English speaker discussants on the videotape based their conversation on the portion of the audiotape heard by the research participants in the experimental condition. All the research participants in the experimental and control conditions then completed three tasks to measure their

comprehension of the videotaped discussion. They attempted to identify four statements made during the video discussion, from a list of eight; they wrote free written recalls, in their L1s or in English; and they completed three statements that prompted them to predict what direction the discussion would take next. Finally, participants in both the experimental and control conditions answered survey questions about their English learning and discussion experience and took a practice TOEFL listening section to assess their listening skill. To maintain experimental controls, participants were screened for familiarity with the discussion topic they may have acquired outside the context of the study. Participants' answers on the listening comprehension questions about the video were aggregated for analysis. Data for 101 participants, of 174 recruited, were analyzed using a 2 x 2 ANOVA for research questions 1 – 3, and a one-way ANOVA for research question 4.

The first research question investigated whether having prior knowledge of topic was any aid in understanding a discussion in one's second language. The priming condition (experimental or control grouping – hearing the audiotape or not) was the operationalization of prior knowledge of topic. No main effect for prior knowledge of topic was found; the experimental group failed to show any statistically

significantly better performance on the comprehension questions related to the videotaped discussion than did the control group.

The second research question investigated the effect of listening proficiency on comprehension of second language discussions. Participants' practice TOEFL listening scores were the operationalization of listening skill. By this measure, on the listening tasks related to the videotaped discussion, more-proficient listeners did perform significantly better than did less-skilled listeners.

The third research question sought the presence of any interaction between prior knowledge of topic and listening skill. No significant interaction was found. While there was some variation in the pattern of participants' answers to the comprehension questions related to the videotaped discussion, the pattern of variation in the answers likely showed the influence of error variance or simply the effect of the listening skill.

The fourth research question investigated the effect of discussion familiarity on students' listening. Participants who reported having experience with discussion performed better on the listening comprehension questions related to the videotaped discussion than did participants reporting little discussion experience, though the significance of the difference was small.

Discussion of the Findings

This study found evidence that prior knowledge of the genre of discussion helps second language listeners understand discussions. Evidence was also found that listening proficiency helps second language learners understand discussions. No evidence was found that prior knowledge of the topic of a discussion helps second language learners understand a discussion. Finally, no evidence was found to support an argument that prior knowledge of the topic of a discussion and listening skill in the second language interact to support understanding the discussion.

When we as scholars, teachers of language, and learners of language have thought about second language listening comprehension, it has been within a framework of two assumptions: that prior knowledge of the topic of an oral text is important for comprehension and that second language listening is very generalizable among text types. That is, listening to one kind of text is pretty much like listening to another. Frequently, second language listening research has made its arguments about listening in general by basing them on studies conducted using particular text types, usually short, constructed monologues based on reading passages (Markham & Latham, 1987; Long, 1990; Lund, 1991; Chiang & Dunkel, 1992; Schmidt-Rinehart, 1994; Chung, 1999). This study

tried to extend that work to a problem previously overlooked by earlier research, the problem of what happens when a second language learner is confronted by an unscripted discussion among three native speakers of the target language. Addressing that problem provides a more stable foundation for making arguments about listening in general because we no longer need assume that listening to a discussion is the same as listening to a short lecture. It is not. Experience in discussion helps the listener understand a discussion. In addressing this problem, this study helps answer the call that Rubin (1994) made for research on the various kinds of texts students might be asked to listen to and the kinds of prior knowledge they might need in order to understand those texts.

In fact, this study can be said to have investigated three forms of prior knowledge implicated in listening comprehension: prior knowledge of the topic of a discussion, prior knowledge viewed as listening skill, and prior knowledge viewed as familiarity with a particular type of text, a discussion. Two of these forms of prior knowledge – listening skill and familiarity with discussion – were shown to be significant predictors of success in understanding discussions. One form of prior knowledge, prior knowledge of topic, was not shown to significantly predict success in understanding discussions. Each of these forms of prior knowledge will be placed into its research context below.

Prior knowledge of topic was the subject of the investigation entailed by the first research question and was not found to be helpful to the participants when they tried to understand the videotaped discussion. This finding stands in contrast to much of the previous work done on prior knowledge and second language listening comprehension. Jensen and Hansen (1995) failed to find any significant effect for prior knowledge of topic. Other researchers, have, however, found effects for prior knowledge of topic (Long, 1990; Chiang & Dunkel, 1992; Schmidt-Rinehart, 1994; Chung, 1999). Still other researchers have found that providing the topic of a listening passage significantly improves comprehension, or makes comprehension a less demanding task (Bransford & Johnson, 1972; Tyler, 2001). Previous work concerning topic prior knowledge in second language listening comprehension may not have applied to the situation under consideration in the present study for a number of reasons. It may be that listening to a discussion is more complicated than listening to a monologue, the text type presented to the research participants in all of the above situations. Indeed, while Shohamy and Inbar (1991) argued that listening to a constructed dialogue was the easiest text presented to their research participants, Read (2002) observed that his participants found a discussion to be more difficult to understand than a lecture on the same topic. Resnick et. al. (1993) argued that ideas

are developed differently in a discussion than they are in a lecture. Schallert et. al. (1996) observed that comprehension is socially constructed in a discussion situation. Hohzawa (1998) held discussions with her participants to ensure they had established prior knowledge before asking them to listen to radio news stories. It may be that the act of practicing with discussion did more than just help the participants activate their prior knowledge. It may have helped them prepare for listening by giving them a more challenging task prior to a less challenging one.

What might be more challenging about listening to a discussion than listening to a lecture? First, listeners have to contend with more than one point of view; comprehension and ideas are developed in a social context in a discussion (Schallert et. al., 1996) and it may be more challenging to make sense of ideas presented by three speakers than ideas presented by a single speaker (see also Brown, 1995). There is ambiguity in a discussion where ideas are developed among multiple speakers. We should remember Jackson's (2004) business professors who reported that their students wanted to be told the "right" solution to the case studies. In just the same way, Resnick et. al.'s (1993) observation that in a discussion ideas are developed among speakers and across time, rather than following more traditional rhetorical development, may serve to create

this ambiguity and increase the challenge for the listener, particularly second language listeners who may be unfamiliar with discussions.

As an example, consider the priming text drawn from Dunkel et. al. (1996). It begins: "Many cultures actually encourage men and women to talk differently and in different amounts, and these patterns for communicating are learned when men and women are young boys and girls" (pp. 174-175). The text goes on to summarize what researchers in the field of male-female communications purportedly agree upon. In contrast to a typical literature review in a scientific paper, a dissertation, or a conference presentation, no disagreement troubles the waters. Rather, listeners are presented with what appears to be a consensus view, a "right answer."

On the other hand, the videotaped discussion based upon the priming text proceeds rather differently. Speaker B, the moderator of the discussion begins by asking Speaker C, the only male, a question based on Dunkel et. al. (1996):

Speaker B: Do you think that communication between men and women really should be considered within the context of cross-cultural communication? I mean, even if you and I who are from the... the same
Speaker C: ... from the same
B: ... the same culture I mean, do you think that there's a difference?

We should notice that Speaker B hedges and clarifies her question: “I mean, even if you and I...,” while Speaker C checks his understanding and helps draw the question into the discussion: “... from the same.” This stands in marked contrast to the confident, declarative beginning of the lecture text. The discussion develops differently from the lecture. In place of a summarized consensus (“Researchers found...”), we have rather open disagreement. Speaker C responds to the question as follows:

[C:] I don't know. But I will say that I think that ... among me[...] I don't even think it's male female thing I think it's every single freaking individual out there....

Speaker C begins by stating his uncertainty, or perhaps by hedging to soften his opinion. He starts by stating what he does not believe and ends by stating his opinion. Speaker B, far from sharing his opinion, disagrees with him, though she does it by acknowledging his point of view before attacking it, similar to the findings of Resnick et. al. (1993) concerning the use of concessions in discussions as a means of beginning an attack on a colleague's opinion. Speaker B states:

[B:] No I think, but I think there's still, I understand what you're saying on an individual case that's not necessarily but I think that you can look at larger generalities.

The third participant in the discussion, Speaker A, makes few comments, but she does state her agreement with Speaker B:

B: Girls tend to play talk games; house is a talk game Barbies is a talk game
C: Wow
B: So... / A: dress up...
B: Dress up is a talk game
A: They're all interaction instead of competition.

In place of a received consensus, the listener must contend with open disagreement among three speakers expressed through language peppered with hesitations, overlaps, and other features of oral speech. It may be that in this situation, prior knowledge of the topic of the discussion is not all that helpful in understanding the discussion when the ideas develop in fits and starts among three different speakers. Topic knowledge may be of less assistance to listeners in a discussion situation than in a lecture situation.

This brings us to consideration of the role of the listening skill, the interaction between topic prior knowledge and the listening skill, and the importance of being familiar with discussion as a prerequisite to understanding discussions. We begin with the listening skill. Above, we considered that it might be difficult to understand a discussion because of how the ideas develop. A second reason that for second language listeners understanding a discussion might be more challenging than understanding a short lecture might be the speed at which a discussion might take place and the oral features that move a discussion forward.

Coping with the speed and the oral features of a discussion might require greater listening proficiency than the skill needed to listen to a short lecture. At least in the case of the current study, this might be the case. The priming audiotope is drawn from a longer selection that is part of a textbook meant to help students learn English (Dunkel et. al., 1996). As can be seen from the quotations above, and from the excerpt in the appendix, the transcript reads like a textbook; the passage is written in complete sentences and is free of such common oral features as repetitions or false starts. As noted previously, the passage was delivered at a rate of 143 words per minute, which Pimsleur et. al. (1977) labeled as “moderately slow.” In contrast, the discussion is characterized by common features of natural speech: clausal delivery (along with sentences), reduced forms, hesitations, pauses, false starts, and corrections (Richards, 1983 / 1987). In addition, the speaking rate, as noted, was 198 words per minute, a “moderately fast” rate (Pimsleur et. al., 1977). It is perhaps unsurprising that the three discussants would speak rapidly; they all knew each other and were all native speakers of English, so they had no reason to speak slowly. This did, however, present a challenge for the participants in the study. Speaking rate has been documented as a source of listening difficulty for second language learners (Conrad, 1985, 1989). While Shohamy and Inbar (1991) argued that those of their texts that

displayed more oral features were more comprehensible, Read (2002) reported that his participants found a discussion to be more difficult to understand than a lecture on the same topic, at least partly because of the greater speaking rate in the discussion. It is therefore to be expected that participants in the experimental group might have found the short lecture to be easier to understand than the discussion. The short lecture was slower, was designed to be understood by language learners, and had many features common to textbooks, such as complete sentences. Given that more than half of the participants reported reading as their best skill, we would expect the lecture to be more accessible to all the participants. In contrast, when only 14 of the participants in the study reported listening as their best skill, it is not surprising that a much faster text, generated spontaneously by three native speakers, would present a challenge. As such, what the main effect for listening found by this study tells us is that listening to and participating in discussions can be challenging for second language learners because of the listening skills needed to handle rapid, informal speech. Others have documented the importance of the listening skill in understanding short monologues (Long, 1990; Chiang & Dunkel, 1992; Schmidt-Rinehart, 1994; Jensen & Hansen, 1995; Hohzawa, 1998; Chung, 1999; Tyler, 2001). This study confirms those findings and extends them. Listening to a discussion is challenging because of the listening skill

demanded by the task. In this study, the better listeners understood more of the discussion.

The importance of the listening skill in the study, and the lack of a main effect for topic prior knowledge may also serve to explain the lack of an interaction effect between topic prior knowledge and the listening skill. As noted above, given the way in which ideas develop in a discussion and given the significant listening challenges faced by the participants in this study, it is probably to be expected that the listening skill would dominate and that no interaction between topic prior knowledge and the listening skill would be found. Interaction between the listening skill and prior knowledge of topic, as distinct from any forms of prior knowledge that we define as “the listening skill,” has been difficult to document in other contexts. Schmidt-Rinehart (1994), Jensen and Hansen (1995), and Chung (1999) all sought but failed to document similar interactions. In fact, in this study, as in that of Jensen and Hansen (1995), the listening skill tended to dominate any topic prior knowledge effects. Finally, Tsui and Fullilove (1998) found that what they called “bottom-up” skills related to decoding were far more important than “top-down” skills for separating good from poor listeners, again, clearly pointing to the importance of the listening skill in helping participants understand the discussion used in this study.

We turn finally to the importance of prior knowledge understood as familiarity with discussion. As noted previously, what may make listening to a discussion a challenge distinct from listening to a lecture is the way ideas develop in a discussion and, especially in the case of the present study, the speed at which discussants may develop their ideas. Taking this a step further, being familiar with how discussions work would, arguably, aid comprehension, where being unfamiliar with the discussion form would hinder comprehension. This study found that to be the case. Participants who reported being familiar with discussion understood more of the videotaped discussions than participants who did not. Why would familiarity with discussion make any difference in trying to understand a videotape of a discussion? First, Carrell and Eisterhold (1983 / 1987, in Madden, 1997) proposed that there might be both prior knowledge for content and prior knowledge for form when considering the reading skill. Second, Chu (1999, 2004) documented that prior knowledge for rhetorical form did have an effect on second language reading comprehension. Given the similarities between reading and listening (Lund, 1991; Nuwash, 1997), it would therefore be expected that having prior knowledge of the form in which ideas are developed would have an effect on second language listening. Prior knowledge for the form of discussion would have helped those students familiar with discussion

follow the development of the ideas among the three discussants and so might have helped them understand and retain more of what they heard. Shohamy and Inbar (1991) maintained that their more discussion-like text may have been easier to understand because it contained oral features that were closer to what their participants would have been familiar with from conversations. Read's (2002) participants found discussion to be harder to understand than a short lecture. This study would seem to argue that understanding a discussion may be a distinct task, neither harder or easier than understanding a lecture, only different. Having prior knowledge of how discussion works, then, would make the task easier.

Practical Implications

The findings of this study have implications for practice and for further research. Practical implications are discussed here. Theoretical implications along with limitations to this study are discussed in the next section.

Prior knowledge in this study was broadly conceived as knowledge of the topic of a discussion, listening skill, and familiarity with the discussion form. The study found that listening skill and familiarity with the discussion form were significant aids to listening comprehension. Logically, practitioners may conclude that they and their students should pay particular attention to the development of the listening skill and to

development of familiarity with discussions. With regards to prior knowledge of topic, while its importance is well established for other types of listening texts (Markham & Latham, 1987; Long, 1990; Lund, 1991; Chiang & Dunkel, 1992; Schmidt-Rinehart, 1994; Hohzawa, 1998; Chung, 1999; Tyler, 2001), it was not found to be helpful to listeners trying to understand the videotaped discussion used in this study. Still, instructors should not ignore previous work in this area. Rather, they should take advantage of it and should attempt provide scaffolding for their students by choosing texts with familiar topics. Hohzawa (1998) had her participants activate their prior knowledge through discussion before they listened to her study texts, a technique encouraged in the field (see, for example, Kozyrev & Stein, 2001). Rost (2002) advocated listening instruction that accounts for the learner's interests and that "accretes" knowledge or develops it in a "spiral" pattern. Listening instruction should build upon what the student knows and is interested in (pp. 105-106). Tsui and Fullilove (1998), while advocating that students need to develop better basic listening skills so as not to have to rely on topic prior knowledge in order to understand what they hear, did point out that content prior knowledge can provide support for students' decoding skills. Teachers, therefore, should continue to pick content that will be of interest and relevance to their students and should give them

opportunities to clarify what they already know about a topic before attempting to listen to additional content in the L2. Ur (1984) remarked that we listen for a specific purpose in our L1s. Rost (2002) argued that listening should center on what the listener needs to do, not what the instructor needs to convey. Working with students to clarify why they are listening to something and helping them to organize what they know about it will help them understand a variety of L2 texts. It may be that understanding a discussion is more challenging than understanding a short lecture (Read, 2002) and so topic prior knowledge was less useful in this study than was familiarity with the discussion form. It may also be that limitations in the study were the cause of a nonsignificant finding for prior knowledge of topic. In that case, the study has implications for further research, but instructors should continue to apply what is known about topic prior knowledge and second language listening comprehension.

Listening proficiency, clearly, should be a focus of practitioners' efforts, based on the conclusions of this study. Given the features of the videotaped discussion – rapid, authentic speech among multiple speakers – two areas of focus present themselves. Learning to understand multiple speakers will be considered under the heading of learning to listen to discussions. Learning to understand rapid, authentic speech will be

considered here. Listening proficiency is clearly more than the ability to process rapid, authentic speech in the second language, but, an unambiguous conclusion of this study is that this kind of processing needs the attention of teachers. As noted previously, learners may face difficulties dealing with the coarticulation that characterizes rapid, authentic speech in any language (Rost, 1990, p. 38). Among learners' first challenges are perceiving a message in the "noise" of a second language (Rivers & Temperley, 1978, p. 75). Rodriguez (1982, p. 22) at first heard only the sounds of English, his second language, not the message. Speech, Buck noted, is often a "quick, first draft," developed in short, possibly ambiguous units that has to be understood automatically as fast as it is uttered (2001, p. 60). Buck (1995) also compared listening to riding a bicycle; teachers can provide students with training, but the students actually have to ride the bicycle and the process has to be automatic (p. 122). What can teachers do, then, to help students learn to automatically process rapid, authentic speech? Buck (1995) observed that if the goal is learning to understand rapid speech, other factors should be controlled for. Teachers can choose familiar topics, or rapid texts with simplified language, or with longer pauses between content units (p. 124). Rivers and Temperley (1978) recommended beginning listening instruction with games as simple as "Simon says..." or using Total Physical Response

(TPR) to help students begin to perceive a message in the sound (p. 76). When beginning to work towards segmenting the speech sound into pause units, among other techniques they recommended were using dictations, or using a “backward buildup technique,” in which students practice with sentences by learning the ends of the sentences first and building backwards towards the beginning, so they move to the known language from the new language (pp. 78-79). As a means of acquainting students with rapid, authentic speech, Fowler (1995) suggested dictating sentences to low intermediate students at a normal rate of speech. The instructor should repeat the sentences as needed, tell the students how many words are in each sentence, have them work in pairs, but not say the sentences slowly. Students then put their answers on the board for discussion and correction. Moving beyond the sentence level, instructors need to seek out rapid, authentic content and help their students process it. There are times when students benefit from hearing speech at a reduced rate specifically designed to provide scaffolding (see Dunkel et al., 1996; Lim & Smalzer, 1996; see Mendelsohn, 1998, for scaffolding in listening textbooks). Yet, because students need to learn to process speech more rapidly, instructors should also choose textbooks that provide rapid, authentic speech (see, for example, Ferree & Sanabria, 2004). Authentic speech should be sought out beyond the confines of a textbook, of course.

Rost (2002, pp. 255-260) provided an inventory of listening materials that includes broadcasters and internet sources for authentic content in addition to textbook publishers. Some strategies that teachers might use to help students deal with rapid authentic speech at the discourse level include the time-tested approaches of doing pre-listening activities, such as setting a purpose for listening, listening to the text more than once, and, where possible, perhaps providing transcripts (for all these, see Lund, 1991). Some textbooks provide transcripts (Ferree & Sanabria, 2004). Some broadcasters and internet sources provide transcripts of their broadcasts. For example, National Public Radio (National Public Radio, 2004) and the Public Broadcasting Service (Palfreman, 2004) both provide free transcripts to accompany audio or video content they place on their respective websites. The instructor, however, has the role of mediating the authentic text to provide the scaffolding the listener needs when developing the ability to process rapid input (see, of course, Vygotsky, 1962, p. 103). To that end, instructors might follow the advice of Lund (1991) and use transcripts to aid listening, but not while listening. Lund (1991) suggested listening, clarifying details if needed with a transcript, and then listening again with the goal of comprehending at a higher level (p. 202).

Teachers could, when appropriate, modify authentic material in order to make it more accessible to their students. Second language learners could benefit from hearing authentic speech at a variety of speeds, in much the same way that musicians practice scales or songs first at slow speeds and later at the correct tempo. With the increasing availability of computers and digital audio editing programs, teachers and materials developers could provide students with opportunities to hear authentic speech not only presented at the actual rate, but at a slower or more rapid rate with pitch distortion controlled for, so the speech still sounds realistic. For example, the free audio editing program Audacity (Brubeck et. al., 2004) is available for a variety of operating systems and allows sound clips to be slowed down or speeded up with no change in pitch. Teachers could record short discussions or conversations and present them to their students at artificially slow speeds and then at increasingly rapid speeds to allow their students to develop their skill.

Strategy training can also help students deal with rapid, authentic speech (Buck, 1995). Mendelsohn provided guidance for instructors on how to teach their students strategies for determining the setting, interpersonal relationships, mood, and topic of a listening text (1995, pp. 141-143). Extralinguistic clues might be used; students, could, for example, preview a video clip with the sound turned off so that they could focus on

the setting, the speakers, and their body language. Students should be explicitly taught strategies for predicting what they might hear, such as listening to a newscast in their L1s in order to predict what they might hear in a newscast in their second languages (Mendelsohn, 1995, p. 145).

To summarize, the results of the study clearly imply that students must be able to process rapid, authentic speech. Instructors can approach this at the sentence, or at the discourse level. Seeking authentic texts from a variety of sources and employing them in the classroom through the use of repetition, modification, transcripts, and strategy training would all help students.

Finally, the results of this study imply that teachers need to spend more time training their students in discussion. Prior knowledge for the discussion form appeared to aid comprehension of a videotaped discussion in the current study. This finding distinguishes this study from previous second language listening work that relied on monologues as source texts (Markham & Latham, 1987; Long, 1990; Lund, 1991; Chiang & Dunkel, 1992; Schmidt-Rinehart, 1994; Jensen and Hansen, 1995; Hohzawa, 1998; Chung, 1999; Tyler, 2001). The focus of this study on comprehension of a videotaped discussion among three native English speakers also serves to expand the definition of academic listening. Academic listening often has been a shorthand term for listening to

lectures (Flowerdew, 1994; Chaudron, 1995; Rost, 2002). Lecture listening is clearly important in academic settings, but lectures, first, are variable, and second, are often accompanied by activities that may well involve discussion. Lectures vary in that they may follow a more “conversational” style involving interaction between the speaker and his or her audience (Chaudron, 1995; Mendelsohn, 1998). Shohamy and Inbar (1991) exploited this feature of lecturing in their work. Benson (1989) documented the case of an L2 English speaker who, having moved from ESL instruction to his degree program at a university, found himself in a course where the instructor used a conversational lecturing style. Lectures may be followed by discussion. Lynch (1995) noted that discussion may occur in a seminar setting, in which one participant makes a short talk followed by discussion by the entire group. To this end, Ferris (1998) recommended that English learners receive additional training in academic listening comprehension that includes more than lecture listening. Ferris specifically recommended that English learners receive more training in participating in whole-class discussions. Benson (1989) also recommended additional training in discussion for English learners. Hammer (1995) documented the importance of discussion in the development of knowledge in his high school physics students. Alvermann et. al. (1996) documented the importance of discussion in the learning of middle and high school

students. Schallert et. al. (1996) noted that discussion is a common feature of upper-level and graduate-level university work. It seems likely, then, that students will encounter some form of discussion in an academic setting.

The importance of discussion has not been overlooked by materials writers (see Ur, 1981, and Madden & Rohlck, 1997). The argument of the present study is that discussion practice can improve students' listening, that listening is vital in discussions, and that listening in discussions differs from listening to lectures. Resnick et. al. (1993) noted that ideas develop differently in discussions and in lectures, and that discussants listen to each other carefully. Knowing this, what can teachers do to familiarize their students with listening in discussions? First, they could begin by having their students practice with discussions in small groups as a prelude to whole-class discussions. Students and teachers may be more comfortable using small groups (Ferris, 1998). In addition, students may be anxious about their listening skills (Ferris, 1998). Anxiety over listening in the second language should not be overlooked (Kim, 2000). Starting discussions out in smaller groups before moving to the whole class would provide students a more comfortable transition to speaking and listening in a whole-class discussion. Bligh (2000) also suggested a variety of ways of structuring discussions from small groups to whole class. As an

extension of this, students might be teamed to lead whole-class discussions. In this way, leaders could prepare as a small group before leading the entire class. Note taking, a common feature of lecture listening in the L1 and L2 (Chaudron, 1995), should be encouraged in class discussions. Discussions are a forum for testing ideas (Hammer, 1995), and, as such, are often a feature of upper-level undergraduate education or graduate education (Ferris, 1998; Schallert et. al., 1996; Jackson, 2004). Despite this, students who are concerned about finding out the “correct” answer to a problem being discussed (Jackson, 2004) may pay less attention to and make fewer notes about what their peers say (Benson, 1989), even though listening in discussion is crucial for the understanding of and development of the ideas of the participants (Alvermann et. al., 1996). Teachers could appoint a student to take notes during each discussion. The notes could be photocopied and distributed to the class at the next class meeting for further discussion and a comprehension check. Note taking could follow procedures similar to taking notes for a debate or panel discussion: the topic, the speakers’ opinions, and their support could all be recorded (see Porter & Grant, 1992, pp. 214-219). Students could write before talking as a means of lowering their anxiety and as a means of preparing to listen. Classes with access to networked computers could post comments to chat areas or on-line bulletin boards before class.

Comments could be printed out and used to prime the oral discussion in class. Schallert et. al. (1996) reported on discussions conducted orally in class and via networked computers. They transcribed the oral discussions and printed out the computer-mediated portions of the class in order to show how class participants worked to fit their comments into the general discussion. Teachers could do the same with their language learners to demonstrate how ideas develop among participants over time (see both Schallert et. al., 1996, and Resnick et. al., 1993). Sensitizing learners to how ideas develop among discussion participants would help learners focus their listening skills on idea development, not merely on the “right” answer. Schallert et. al. (1996) reported that in the written discussion students showed greater participation relative to the instructor, where the instructor tended to be relatively dominant in the oral discussion. Native-speaker status also tended to contribute to greater participation in the oral discussions, where skills in writing and posting comments in English, the language of the classes investigated by Schallert and colleagues (1996), tended to affect participation in the computer-mediated forum. For second language teachers and students, the written medium could serve to balance participation among fluent and less fluent members of the class. Since many of the students in this investigation listed reading as their best L2 skill, preparing for an oral discussion by posting and reading

comments before attempting to listen to classmates would likely be helpful. In place of computer-mediated chat or bulletin boards, teachers and students could share comments by e-mail. Classes without networked computers could use actual bulletin boards or chalkboards to post written comments before attempting an oral discussion. Schallert et. al. (1996) recorded and transcribed the oral discussions. Teachers and students could record and play back second language discussions to give students additional listening practice. Where Pica. et. al. (1987) studied the affect of interaction on comprehension, Lynch (1995) noted the crucial role of “delayed negotiation” in a discussion setting. Students could be given the role of delayed negotiators, where they mostly listen to other students discussing the topic in class. The listeners could take notes and could summarize what the speakers said. Rotating the role of listener would give every student in a class practice simply listening to the discussion and would reduce the effort involved in participating. Finally, listeners, and participants, could be taught to apply listening strategies to discussion, particularly strategies involved in determining the main ideas expressed in a discussion and in predicting the direction a discussion might take (Mendelsohn, 1995). Teachers could encourage students to match opinions with participants and then make predictions about what might be said next. This study implies that being familiar with listening in discussion will

help students understand what they hear in a discussion. Teachers, then, should prepare students for this kind of listening.

Limitations and Research Implications

As with any study, this one has limitations, and the results, discussion, and implications should be interpreted in light of the limitations. Limitations arise intrinsically from the kind of study conducted, as well as from how the study was conducted.

This is an experimental study and has inherent design limitations. First, participants in the study performed the listening tasks in only a 90-minute time span. An examination of listening in discussions over a longer period of time might provide different results (See, for example Benson, 1989, who examined the listening of a single student taking an academic course). Second, because this was an experimental study, among the factors controlled for were the text and the manner of involvement of the participants. Participants listened to a videotape of native English speakers having a discussion rather than actually participating in the discussion. This was done to exercise greater experimental control and so focus the study on listening, with the result, however, of creating an inauthentic setting for listening in discussions. Studying listening by having students participate in the discussion would yield different results (See Lynch, 1995, and Pica. et. al., 1987, for examinations of listening in discussions using

participation, and Rubin, 1994, for other approaches to the study of listening comprehension). Third, prior knowledge here was defined as prior knowledge of topic because this afforded experimental controls and because there is research documenting the importance of this kind of prior knowledge. Despite this, there are other types of prior knowledge that may be as important or more important in listening comprehension (Rubin, 1994). In the case of discussion and its organization, defining prior knowledge as familiarity with participation and turn taking might provide different results for a listening study (see Tsui, 1994; Basturkmen, 2002). Defining prior knowledge as semantic or syntactic knowledge (see Conrad, 1985, 1989) might also give different results in a study of second language listening in discussions. Fourth, the current study is a quantitative study, yet quantifying processes that are mental, and are therefore not directly observable, has inherent limitations. Taking a qualitative or mixed-methods approach would provide a different view of listening in discussions (again, see Benson, 1989). Finally, as Urquhart and Weir (1998) noted, investigations into comprehension either try to identify the components of comprehension or the processes of comprehension. This study argued that prior knowledge of topic, listening skill, and prior knowledge of genre (discussion experience) are components of second language listening comprehension in discussions; the study did not make

arguments for exactly how these components affect comprehension, only that they do. In contrast, O'Malley et. al. (1989 / 1995) examined the processes of second language listening comprehension. Had this study done so, our picture of listening comprehension would be different.

Limitations arising from how this study defined knowledge in general, and from how the study operationalized that definition of knowledge, should also be considered. Though in an epistemological sense, knowledge can be defined as "justified true beliefs," this study would be better placed in the domain of investigations into learning, where knowledge might be defined as one's "personal stock of information, skills, experiences, beliefs, and memories" whether verifiably true or not, the definition proposed by Alexander, Schallert and Hare in their discussion of how researchers label knowledge (see their 1991 paper for both definitions, p. 317). In this paper, implicitly, knowledge is what one is able to remember, a definition closer to learning theory than to epistemology. If one no longer remembers something, it is no longer part of one's stock of information.

This definition of knowledge places the study close to the conception of knowledge used in other areas of second language acquisition research. Markham and Latham (1987) defined the background knowledge of their participants in terms of their religious

background, implying an entire context of memories. Other studies have taken similar approaches, defining knowledge as some form of memories making up their participants' stock of information or life experience (Long, 1990; Chiang & Dunkel, 1992; Schmidt-Rinehart, 1994; Jensen & Hansen, 1995; Chung, 1999). Getting at participants' knowledge is often problematic, however. Researchers have chosen topics for their studies that are presumed to be familiar or unfamiliar to their participants and then have attempted to control for who their participants are (Long, 1990; Chiang & Dunkel, 1992; Schmidt-Rinehart, 1994; Chung, 1999). Researchers have grouped participants by academic major, using that as a proxy for general knowledge, and as a starting point for making assumptions about students' prior knowledge of a particular topic (Chung, 1999). Researchers have also simply asked their students whether they have knowledge of a topic (Jensen & Hansen 1995), or have assessed their knowledge of a particular topic before trying to gather data and make inferences about whether the participants understood a listening text about that topic (Chiang & Dunkel, 1992). These approaches, while valid, have not been without problems. Chiang and Dunkel (1992) found that their research participants did have knowledge of the presumed familiar topic, but could not demonstrate increased listening comprehension founded on this prior knowledge relative to a control

group. Jensen and Hansen (1995) concluded that simply asking students to report whether or not they had studied the subject matter of a particular lecture was not a sensitive enough measure of prior knowledge to allow them to draw inferences about prior knowledge's effect on second language listening comprehension.

To avoid those difficulties, and because of the challenges presented by sampling from the diverse population of an intensive English program, this study took a different approach. Chung (1999) was able to use academic major as a proxy for personal stock of life experience. Here, given the variety of undergraduate majors reported by students in the present investigation, and given the lack of an undergraduate major reported by some participants, that was not feasible. It would have taken unacceptably long to recruit sufficient numbers of students to meet the statistical demands of the study, raising questions as to whether the last students recruited were truly similar to the first students recruited. Alternatively, using academic major would have required placing students into broad groups, such as an arts and humanities grouping and a sciences grouping. This would have raised the troublesome issues of deciding where particular fields of study "fit," for the purposes of the study. Linguists consider themselves scientists, though they are often housed with modern language faculties, and their interests may overlap with

students of computer science, anthropology, sociology, or even poetry. An alternative would have been to choose a general topic known to students of varying life experience but still allowing for grouping into categories of experienced and novice participants. Sports would have fit this distinction, but would also have raised questions about whether gender would have influenced participants' stock of experience, or whether the choice of sport would have been more familiar to students from a particular background (soccer/ football in comparison to baseball, for example). Instead, this study attempted to control for students' stock of life experience by choosing a discussion topic that would have been accessible to any participants recruited, while not necessarily being familiar to them. Implicit in this approach was a definition of knowledge similar to that discussed by Alexander et. al. (1991) and similar to that used by researchers in second language listening comprehension (Markham & Latham, 1987; Long, 1990; Chiang & Dunkel, 1992; Chung, 1999). The accessibility criterion carried the assumption that the discussion topic of male-female communication fell within the store of participants' life experience; the familiarity criterion carried the assumption that the participants were not experts in this field but would be able to acquire enough information from the priming tape to develop expertise sufficient to distinguish experimental and control groups. Implicit in this approach

was that participants who had developed expertise outside the confines of the study should be screened out, or at least considered separately, in order to have a truly primed experimental group. This avoided the problem Jensen and Hansen (1995) faced, where they had no way of measuring the depth of knowledge their participants reported.

Still, this approach raised other difficulties. Similar to the Jensen and Hansen (1995) study, participants reported on whether they had used the text upon which the discussion was based (Dunkel et. al., 1996), whether they had studied male-female communication, or whether they had read the work of Linguist Deborah Tannen, upon whose work the priming script and the discussion were based. Unless participants positively stated they had no expertise that could have come from beyond the experimental controls of the study, they were eliminated from this analysis. This had the effect of maintaining experimental controls in the study, but it also may have had the effect of eliminating from the study the participants with actual expertise. This would explain the lack of main effect for prior knowledge. A definition of knowledge more explicitly stated during the design phase of the study may have provided more clear guidance when trying to resolve the opposing difficulties of trying to maintain experimental controls while trying to group students so as to investigate the effect of prior knowledge when listening to a discussion.

An additional prior knowledge limitation arose from the design of the study. Efforts were made to keep the time commitment of the participants reasonable. However, this meant that the participants in the experimental condition did not take an assessment to determine whether they had in fact understood the priming audiotape. Understanding this tape obviously was crucial in the participants' being able to establish the prior knowledge needed to understand the subsequent discussion. Other researchers (Chiang & Dunkel, 1992) did assess their participants' prior knowledge of the content of their study independent of listening comprehension. Had such an assessment been conducted in this study, a determination concerning whether the students in the experimental and control conditions actually differed with respect to topic prior knowledge would have been possible. As it is, this limitation may explain the main effect for listening skill. Better listeners may have more effectively understood both the priming tape and the discussion, and this understanding would have been reflected in their performance on the comprehension tasks related to the discussion.

A limitation entailed by the operationalization of discussion experience in this study should be considered. Students participating in this study self-reported on their experience in conversation and discussion. However, students who performed better on the

comprehension measures related to the videotaped discussion may not have in fact been more familiar with discussion as a genre. Rather, they may have been more familiar with informal speech registers; they may simply may have had greater skill at inferring meaning when listening; they may have had more time living with native English speaking roommates or working with English speaking colleagues, without necessarily spending much time engaging in discussions similar to the discussion used as the listening text for this study. In addition, it should be noted that participants were not asked to specify the language or cultural context of their prior discussion experience. It may be that students understood the discussion survey to relate mainly to discussions in English. Students may not have reported on discussion experience in other languages or other contexts, so the survey may have undersampled the “familiar with discussion” population.

Limitations arising from how the study was conducted should also be considered. First, as an experimental study, one would expect to have a controlled, fairly static population, and, in fact, participants were limited to intermediate and advanced new students in a particular intensive English program. This did have the effect of reducing the probability that students would participate who either could not understand the video discussion because of low language proficiency, or who were returning students and

so might either participate more than once or hear about the study from their friends and so enter the study with higher than acceptable prior knowledge of topic for the discussion. While efforts were made to control the participant population, is it possible that either some very low-listening students, or some students who heard about the study or participated more than once are in the sample population. In addition, efforts to control the participant population had the effect of reducing the pool of potential subjects that could be recruited in any given term. Students were recruited from the Spring of 2002, through the Fall of 2003, with an average of 12.63 participants being added to the sample each term. In contrast, Chung (1999) was able to recruit all 137 of her participants in one sitting. Given the increasingly global nature of English study and use (Mendelsohn, 1998), it is reasonable to conclude that there may have been some improvement in overall global English proficiency between the times when the first and last students were recruited for this study. Second, there are limitations with regard to time on task. Efforts were made to ensure that the control group was truly controlled. Students in this group not only did not hear the audio priming tape, they heard nothing at that time in the study, to ensure that they only heard the video discussion. The result, however, is that the experimental group heard the audio priming tape twice where the control group heard nothing. Because

the audio priming tape was approximately three minutes in length, the experimental group heard English for approximately six minutes longer than did the control group. This is a minor difference. Out of the approximately 90-minute study time, the experimental group actually spent about 7 percent more time listening to English than did the control group [approximately 360 seconds / the total study time of 5400 seconds = .067]. There may well have been an effect, but then one would have expected to see a main effect for group (prior knowledge), and this was not the case. Finally, while the control group did not receive an additional six minutes of English listening, because both groups had about 90 minutes for the all of the study tasks, the control group did have six minutes of additional time to complete the comprehension tasks. In fact, overall, control students had higher comprehension scores on the study tasks. Again, however, there was no main effect for group, arguing against a time on task effect.

Third, there may be a limitation with regards to proctoring. The principal investigator (PI) proctored all of the data collections for the experimental group; two colleagues ran the data collection for the control group (colleague A, 7 sessions; colleague B, 1 session). The reason for this was that the principal investigator wanted to reduce the burden on his colleagues of administering the study. Administering the study involved

managing audio and video through a projection and sound system. In the case of the experimental group, it involved switching back and forth between audio and video – a manipulation not required in the control group. To make the task easier for his colleagues, to better control for technical failures, and to control for variance across proctors and administrations, the PI wrote detailed instructions for himself and colleagues. Still, the PI in one instance failed to rewind tapes, started them in the middle, and so had to omit data collected from one experimental group session to avoid tainting the sample. Complexity in administering this listening study, then, was not trivial. Had there been an effect for proctor, one would have expected to see a main effect for group. Again, this was not the case, arguing against a proctor effect.

Fourth, error variance may have affected the results because of the facilities. The investigation was conducted at a large research university in a variety of rooms, though efforts were made to minimize the effect room choice would have on the results. Students were recruited and participated in eight data collection sessions during the period from the Spring of 2002 through the Fall of 2003. The initial data collection session was conducted in small classrooms available through the intensive English program. Students heard the audio through “boom box” tape recorders and watched the video through TVs with VCRs attached, or combination

TV / VCRs. In an effort to improve the sound quality, the next seven data collection sessions were held in university classrooms equipped with sound and projection systems. Students heard the audio through “boom box” tape recorders plugged into the sound system. Students watched the video via a VCR with the audio presented through the sound system and the video projected on a screen. The result was an improvement in sound quality, but an occasional deterioration in video quality. Data were gathered in five different technology-equipped university classrooms in two different university buildings. Students and data collectors were randomly assigned to rooms; in some rooms, however, leaving the room lights on tended to make the video look washed out. Dimming or turning off the room lights made it difficult or impossible for students to take notes on what they heard. Finally, during the time of data collection, the university where the study was conducted was experiencing a period of robust enrollment; rooms, therefore, were in short supply, particularly the multi-media rooms used in the study. As a result, often rooms were only available in the late afternoon or the early evening, and usually on Friday. Participants, therefore, were asked to listen late in the day after all of their classes at the end of the week. As a result, approximately half of the students who initially expressed interest in helping with the study did not actually participate, doubtless at least in part because of when the

rooms were available. Second, those that did participate were doing so when they may have been fatigued, again, because of room availability. Their performance, therefore, may not have been their best. In summary, the results of the study should be interpreted with the room limitations, and the other above mentioned limitations, in mind.

Directions for Future Research

This study could have examined listening via a more authentic task over a longer period of time, or it could have defined and analyzed the data qualitatively. Different choices could have been made regarding the type of population to sample, how the sample was drawn, the priming, proctoring, and the choice of facilities. Had different conditions applied, the picture we have of second language listening comprehension in class discussions would have been different. This study does illustrate, however, that listening skill and experience with discussion do have roles to play in second language listening comprehension in a discussion situation.

A starting point for follow up work to the present study is the data of the 63 participants eliminated from this analysis. As noted above, because of experimental controls, the students who actually had sufficient life experience to be primed by the audiotape may have been eliminated from the study, resulting in no distinction between the experimental and

control groups along prior knowledge for the topic of the discussion. Because of how they were screened, this group of eliminated students may include those who are truly expert in male-female communication along with those who may have used Dunkel et. al. (1996) as a text at an indefinite time in the past without necessarily listening to the male-female communication topic. Those eliminated would also include experimental and control group members. Therefore, there would be high variability in this population. Still, a preliminary examination of their responses would be of interest to determine whether prior knowledge of topic did in fact influence listening in this study.

There may have been a threshold effect for listening proficiency in this study. A threshold effect refers to the minimum L2 proficiency needed to perform a task in the L2. Lee and Schallert (1997) found that a minimum level of L2 reading skill was needed before learners could use their L1 reading skills to help their L2 reading comprehension. The present study examined intermediate- and higher-level listeners in a particular IEP, and found a strong effect for listening proficiency. There may be a threshold effect at work. Follow up studies with lower-level students would provide a more accurate picture of the role of the listening skill in understanding discussions.

The notes the participants took in this study were not examined, though note taking in the L2 is of interest to the field (Chaudron, Loschky, and Cook, 1994; Chaudron, 1995). As a follow up investigation, participants' notes could be examined. For example, it would be of interest to trace which ideas appeared in the priming tape, the discussion, and in students' responses, and where in the discourse these ideas occurred. Knowing which ideas listeners take note of would be of interest to researchers and teachers. In addition, some comparison could be made between notes made listening to the priming tape, a monologue, and notes made listening to the discussion. This comparison might offer insights into what ideas listeners perceive when listening to these two different genres.

The field needs additional work concerning the influence of prior knowledge for the discussion form on listening in discussions. As noted, this study found an effect for familiarity with the discussion form, but the significance was marginal. Research conducted with different populations and using different kinds of discussion texts would be helpful in clarifying the findings of this study. Better survey instruments would provide better information about participants in future research and so would likely return more useful results.

An additional departure point for future research would entail arriving at a better, and more testable, definition of listening proficiency. Here, students were asked to take a TOEFL listening section (Educational Testing Service, 1998), and, on that basis, they were judged more or less skilled for the purposes of this study. Chung (1999) used a similar measure, where other researchers have used different measures of listening (Jensen & Hansen, 1995; Long, 1990). A more widely agreed upon measure of listening would be helpful. Building on the work of Conrad (1985, 1989) by further examining the role of vocabulary and semantic meaning in listening comprehension would be a good beginning. Scholars have noted the importance of linguistic processing in listening comprehension and the difficulties students face in making sense of what they hear in their second language (Tsui & Fullilove, 1998; Lynch, 1995; Buck, 1995). The importance of the relationship between skills in pronunciation and listening comprehension has also been noted (Gilbert, 1995). Further research into the processing of rapid, connected speech from multiple speakers in discussion and conversation settings is needed.

Tsui (1994) proposed a detailed taxonomy of English conversation and provides some explanation of how this taxonomy might be applied to a brief conversation, with a focus on how speakers' choices in a conversation constrain the direction of the discourse (pp. 217-248). She

proposed a three-part schema for discourse moves in conversation (initiate – respond – follow-up, [p. 43]). Her framework could be adapted for discussion settings, because there is some overlap between some types of initiations in conversation and discussion. For example, her initiation which elicits information from someone (“What time will you be finished?” [p. 81]) is similar to the opening of the video discussion in the current study: “Do you think that communication between men and women really should be considered within the context of cross-cultural communication?” Note that the opening question from the video does not ask only for information but for the respondent's opinion. Still, the question does meet Tsui’s definition of an elicitation, which is a request for a linguistic response, as opposed to action (p. 80). Basturkmen (2002) has investigated discourse in discussions, and has cited Tsui (1994). Work on comprehension as it is tied to the discourse structure of discussions is needed. This is being studied for lectures (Flowerdew, 1994). Work in discourse comprehension for discussions is needed.

Along those lines, a comparative discourse analysis of a lecture and a related discussion, such as the priming tape and the discussion used in this study, would be fruitful. Basturkmen (2002, 2003) has explored the discourse structure of discussions in the business context, where Flowerdew (1994) has provided work on the structure of lectures. Resnick

et. al. (1993) argued that ideas develop differently in lectures and in discussions. A direct comparison of how they develop in a lecture and in a discussion, with content controlled for, would provide insights into the comprehension challenges second language speakers face in terms of understanding and participating in both lecture and discussion situations.

Lynch (1995) noted that one area still needing work is that of non-participation in discussions. Do students fail to comment because they do not understand or because they see no need to ask questions? Further work on the taxonomy of discussions is needed. In addition, further work on the listening comprehension of second language learners in terms of the discourse structure of discussion is needed. Are students sensitive to moves and turns in second language discussions? Do they understand enough to be able to find opportunities to ask questions?

Because this study examines comprehension in a discussion situation, as opposed to a lecture situation, additional avenues for further research are opened in the areas of prior knowledge defined as native language, cultural background or educational background. Participants in this study reported their native language. However, their responses to the comprehension task were not analyzed along linguistic lines, primarily because the principal investigator was concerned that the linguistic diversity in the IEP would make it difficult to find sufficient numbers of

speakers of any one language within a reasonable time to meet the statistical demands of the study. However, Chung (1999) conducted her listening study with only Korean learners of English, as did Kim (2000). Chu (1999) studied the reading comprehension of Chinese speakers, and then compared their comprehension for familiar and unfamiliar rhetorical form with the comprehension of native English speakers (Chu, 2004). Given the importance of processing the phonological form of language for comprehension (Rost, 1990), it may be that students from different linguistic backgrounds may face different challenges in understanding discussions. Would Korean and Spanish speakers perform differently, for example? Moreover, knowledge of one's native language implies knowledge of one's native culture. Kim (2000) specifically investigated the listening anxiety of Korean learners of English because of her native culture intuition that something existed which merited investigation. Would students of different cultures comprehend discussions in English differently, or in different amounts? Would students from one culture thrive in the ambiguity of idea development in discussion (see Resnick et al., 1993), while students from another culture seek the reassurance of the instructor providing the "right" answer (see Jackson, 2004)? Finally, Chung (1999) operationalized prior knowledge as academic major, an area of prior knowledge that was not investigated in the present study.

Since prior knowledge is defined as the sum of one's experience (Alexander et. al., 1991), further investigation along the lines of academic major or occupation would be warranted. Would students in different majors process a discussion on a common topic differently? Would they be accustomed to different discussion styles, after the work of Basturkmen on business discussion (2002, 2003)? Further work would be merited.

Conclusion

This study, examined second language listening comprehension in a discussion setting in terms of prior knowledge of topic, listening skill, and prior experience with discussion – prior knowledge of discussion form. Listening skill was found to be a significant predictor of successful listening comprehension on the tasks in this study. Experience with discussion was also found to be a predictor of success in listening comprehension in discussion settings, though the results were only marginally significant. While not ignoring other scholarship stressing the importance of prior knowledge in second language listening, teachers and students should work to develop the listening skill, particularly in the area of understanding rapid speech. Further, teachers should ensure students participate in whole-class discussions and develop techniques for listening in this context. Among other themes, scholars should continue to examine

the role of prior knowledge of topic in various listening situations, the role of prior knowledge of form, the definition of listening proficiency, and the structure of discussions and how this may affect comprehension.

Appendices

Appendix 1: The Test and the Survey the Participants Took

Listening Comprehension in Class Discussions

Thank you for participating in this investigation of listening comprehension.

Write your code number here:	
------------------------------	--

Also, as you go on to each page of this packet, please write your code number on the top of every page. Thank you!

This is what we will be doing.

1. You will listen to a warm-up tape, to check the equipment.
2. You will hear a tape about a certain topic. (**Experimental group only**)
3. You will watch a short video.
4. You will answer some questions about the short video.
5. You will answer some questions about your English learning experience.
6. You will take a practice TOEFL listening section.

Participating in this study should take about 85 minutes or less.

Please wait to turn the page until you are asked to do so. Thank you.

Instructions.

1. Please listen to the warm-up video and audiotapes. Let the proctor know if the volume is okay.

2. Please listen to the second audiotape. You may take notes in the space provided. The topic of the second audiotape has been provided for you.

**Topic: Male-female conversation as cross-cultural communication.
(Experimental group only)**

You may take notes on this page.

3. Please watch the following short video. You will see it twice. You may make notes if you wish.

You may make notes on this page.

4. Questions.

Some of the statements below are things people in the video said. Some are not. Please put an "X" next to the statements that someone on the video made. You may refer back to your notes. Thank you!

- _____ 1. According to Speaker B, the topic of the discussion is intercultural communication styles.
- _____ 2. Speaker C thinks that individual differences in communication style are as important as male-female differences in communication style.
- _____ 3. Speaker B says that one can look at larger generalities, and not just at individual differences, when considering communication style.
- _____ 4. According to speaker B, when boys and girls are very young, their play patterns are different.
- _____ 5. According to speaker B, boy play is a game and there's a lot of talking because there are the rules of the game that mediate any conflict.
- _____ 6. According to speakers A and B, the most common little girl play is talk games like house or Barbies.
- _____ 7. According to speaker A, girl play involves interaction as a form of competition.
- _____ 8. According to B, women are more attuned to subtleties of language than men are because language is very much a part of women's play from the time that they're girls.

Please write down as much as you can recall from the discussion on the video. You may write in English or in your native language. You may refer back to your notes. Please write only on this page. Thank you!

What do you think the three students will discuss next? Please write brief completions to the following statements:

I think that Speaker A will use these words or ideas next in the conversation:

I think that Speaker B will use these words or ideas next in the conversation:

I think that Speaker C will use these words or ideas next in the conversation:

Thanks for your help so far!

5. Please take a moment to complete this information about yourself:

Today's date: Day ____ Month ____ Year ____

Your age:	Sex: M / F	Your code number:
-----------	------------	-------------------

Your country:	Your native language:
---------------	-----------------------

Undergraduate Major:
Graduate degree & field (if applicable):
Work or professional field (if applicable):

English study: Circle your program and write your program level:

Academic: ____	General: ____
----------------	---------------

How many years and months total have you studied English, including here at this program?

years: ____ months: ____

If you have taken the TOEFL before now, what is your highest score?

Circle: Computer / Paper & Pencil

When did you get this score? Month and year: _____.

Circle your best English skill:	Listening, Speaking, Reading, Writing
---------------------------------	---------------------------------------

What can you do in English? (Pick and circle one box; pick the hardest tasks that you think you can do)

Take university courses or hold a professional job	Talk with friends; read for fun; write e-mail to friends	Use basic English words and sentences only
--	--	--

Have you ever used the book Advanced listening comprehension (2nd ed), by Patricia Dunkel, et. al., (published by Heinle and Heinle, Boston, MA, USA, 1996), either in class or out of class? Yes / No.

Have you studied in the areas of male-female or cross-gender communication? Circle: Yes / No

Have you studied in the area of cross-cultural communication? Circle: Yes / No

Have you studied in the area of gender studies? Circle: Yes / No

Have you studied or read the work of linguist Deborah Tannen? Circle: Yes / No

Appendix 2: Transcript of Priming Audiotape

From *Advanced Listening Comprehension*, by Dunkel, et. al. 1996.

From Lecture 10

Gender & Communication: Male-Female Conversation as Cross Cultural Communication

pp: 174-175

Many cultures actually encourage men and women to talk differently and in different amounts, and these patterns for communicating are learned when men and women are young boys and girls. Children learn how to talk to other children or adults, and how to have conversations, not only from their parents but also from their peers — from other boys and girls their age. In her best-selling book *You Just Don't Understand*, Deborah Tannen points out that, although American boys and girls often play together, they spend most of their time playing in same sex groups. She also points out that boys and girls do play some games together, but their favorite games are very often quite different. Tannen and other researchers on this topic have found that young boys, say ages 8 through 12, tend to play outside the house rather than in the house, and they play in large groups that are hierarchically structured. The group of boys generally has a leader who tells the other boys what to do and how to do it. It is by giving orders and making the other boys play by the rules that boys achieve higher or more dominant status in their play group. Boys also achieve status by taking "center stage." They take center stage by talking a lot; they give orders and commands; they tell a lot of stories and jokes. They command attention by dominating conversations and by interrupting other boys who are speaking. The researchers also found that boys' games often have clear winners and losers and elaborate systems of rules.

Researchers found that girls play different kinds of games and abide by different rules when playing their games. In addition, girls in groups use different patterns of communication and different styles of communication when playing together. Tannen and her colleagues have found that young girls often play in small groups or in pairs. They play less often in large groups or teams outside the home. Girls' play is not so hierarchically ordered as boys' play is. In their most frequent games, like hopscotch and jump rope, every girl gets a chance to play hopscotch or to jump rope. In many of their play activities, such as playing house, there

are no “winners” or “losers.” Researchers also found that girls usually don’t give many direct orders or commands to their playmates; they express their preferences as suggestions, according to Tannen. Girls often say to their playmates, “let’s do this... or that.” Boys, on the other hand, are more direct in ordering their playmates to do this or that.

Appendix 3: Transcript of Discussion Video

In response to:

Explain why communication between men and women can be considered cross-cultural communication. What sorts of misunderstandings might men and women encounter because of their different styles of communication? (Dunkel et. al., 1996, p. 106)

Notes and Conventions:

1. The principle investigator transcribed the discussion using digital video copied from the raw tape. The transcript was not intended for discourse analysis purposes, so the conventions followed are fairly intuitive based on what the discussants said. The goal was to capture their ideas more than to capture every detail of how they conveyed them.
2. The first portion of the discussion is the video that was shown to the research participants. It was transcribed with the intent of capturing clauses and pause units so that a rubric could be made for scoring the written recalls.
3. The second portion of the transcript was used for judging research participants' predictions. Thus, the content of the discussion was of greatest interest, so pause boundaries were not noted in the transcription.

Conventions.

. (period) = short pause at the end of a sentence

, (comma) = short pause at the end of a phrase or clause

= longer pause in speaking; boundary of a pause unit

... = short pause in speaking, or hesitation or false start. At the end of a turn, this symbol means a near overlap in turns; the second speaker starts when he or she perceives a hesitation or short pause by the first speaker

[...] = indistinct utterance; content possibly inferred by the transcriber

/ = overlap in speakers. Two speakers talk at the same time.

NAME = Name excerpted by principal investigator

(laughs) = non-speech sounds

----- = expletive edited by investigator

Transcript of what the participants heard:

Speaker B: Do you think that communication # between men and women really should be considered within the context of cross-cultural communication? # I mean even if # you and I who are from the... the same

Speaker C: [...] like the same

B: ... the same culture # I mean do you think that there's a difference? #

C: I don't know. # But I will say that I think that # among me[...] # I don't even think its male female thing I think it's every single freaking individual out there # because like my male # like my male friends have totally different ideas of masculinity and femininity than I have # and so I'm starting to learn # in my # re[...], # you know all the stuff I've been # experiencing the last five years that # it's not a male female thing its just an individual individual thing # and a lar...on a large scale you could say that it is sort of a [...] male female thing but # it all sort of disappears when you # when you look at individual interactions. # Like if I were to go out and talk to some # I mean like I met some frat guys recently and they're not all as sexist as I thought they were, # at least the guys I met. #

B: Uh huh #

C: [...] I had this stereotype of them being super sexists # but # so uh #

B: No I think, but I think there's still, # I understand what you're saying...

C: Yeah #

B: ...on an individual case # that's not necessarily but I think that you can look at larger generalities. I mean I'm thinking about even when # boys and girls are very young ...

C: Yeah... #

B: ...even the play patterns are different I mean # boy play is # a game and there's a winner and a loser you know I mean it's like...

Speaker A: [...] /

B: ...football or baseball or # or whatever and there's not a whole lot # of talking because you have the rules of the game # and that mediates # any sort of # conflict there is. No # I'm sorry that's an out; # that's the rule of the game. # Girls, # on the other hand, # I mean # what are, # what's one of the most common # little girl play?#

B: Barbies # / A: House #

B: First of all... / A: Yeah #

B: ...nobody # nobody wins at Barbies #

A: Yeah it's not competitive #

B: It's all talk play #

C: [...] did you read this somewhere? #

B: ... from house #, no! #

A: It's true #

B: It's # growing up around little kids #

C: Ahhh #

A: I have a niece and a nephew and I see it all the time #

B: Girls # tend # to play # talk games; # house # is a talk game. # Barbies # is a talk game#

A: Um hmm #

C: Wow #

B: So # / A: Dress up #

B: Dress up # is a talk game. #

A: They're all interaction instead of # competition. #

B: Which I think is one of the reasons why # women # one of the cultural differences that I think are the # in terms of cross ... # is I think that women are more attuned # to # subtleties of language # than men are #

C: Yeah #

B: because we use it so much more at least # and I'm just speaking about just # within this culture, # um, # but it is # very much a part of our play from # the time that we're very little girls.#

===== end of what participants heard =====

time: approx. 2:33; 504 words; approx: 198 wpm. Indistinct words or utterances, marked [...], are not included in the word count.

===== continued =====

A: Um hmm. I agree

C: Wow

A: Huh...And another thing, I was at a conference...

C: That's interesting

A: [...] a month ago [...] The Stinky Cheese Man?

B: [...]

C: Stinky Cheese?

A: Yeah John Schezka? is his name. He did "The... The True Story of The Big Bad Wolf"

B: Oh that's right

A: That guy, he's a really good children's illustrator. And his whole schtick right now he's trying to get boys to read in school, you know this big campaign that Boys read, and he said that with his son that the only time that they can really talk he's noticed it with other boys and their dads... is that they're in the car facing foward or if they're doing something where they're not looking at each other. Like if they're busy doing something,

then they'll talk. And he said that he's talked to his friends and they have the same experience, that if they're doing something where it's not like sitting down on the couch looking in the eye.... where as he said his daughter would come home and they'd say you know how was your day and she goes into detail about why she likes this teacher and what she did with that friend where as the son could have like a huge bruise on his head and they would say what happened today oh nothing what's that big bruise oh yeah I got hit whereas the daughter will go into detail on things and everybody at our table the people that had kids they all started agreeing and nodding and saying yeah that's the only way my son will talk

C: I wonder if they'd watch TV...

A: Maybe

C: ... 'cause we don't watch TV

A: That makes a big difference. We don't watch.. we watch maybe a half an hour of TV a week. NAME and I we talk a lot... so my husband I think he's.... I see I was looking at this "men... men and women" I would change this to masculine and feminine um communication styles. My husband I think is fairly feminine and I'm I have a little more masculine um communication style like...

C: Yeah, right

A:so between the two of us we we pretty much have a very similar communication style

B: Yeah I think... I think it could be learned and I think,

A: Um hmmm

B: You know, because I know, when we were talking before I think that sometimes that I have to make, just like you do, a conscious decision not to manipulate with words? Because I... I'm very good at it, you know? I mean you know when to...no... I was going to say... when guys just need to be stroked. I mean you know that I mean you know what to say to get them to do what you want them to do. Sounds really horrible doesn't it?

A: Edit that part... no

B: No but you know sometimes they just want... oh god I've got to tell him that he's wonderful or this that or the other you know, so I know that...

A: So he'll take the trash out (laughs)

B: Exactly!

C: Wow

B: I'm just so happy you know you just make me so happy honey and da da da da... it's true

C: Wow

B: It's like 20 minutes of words to get him to do one thing but you...you know what I mean?

C: This is a trip

B: What? You didn't realize that?

C: I did but I've just been living in this totally different reality...cause my wife's from.... / B: I'm mean I'm not speaking of

B: Yeah, I'm not speaking of

A: Your marriage is a cross cultural marriage

C: Yeah

B: To begin with

C: So it's wild to hear people, I can't even imagine trying to do the marriage thing in the same culture. It'd just... we can't cuss right? Okay

A: (laughs)

C: It'd be really weird to try to do the marriage in the same culture

A: I'd think it'd be the opposite

C: No

A: Cross-cultural

C: It's so much... It's so much... It's so much easier, I think

A: Really?

C: Yeah

A: It might depend on whom you marry too, because when I went to Spain I remember telling my husband, er... my boyfriend at the time that he had nothing to worry about there's no way I would ever fall for a Spaniard because I just... didn't ... there was just too much of a cultural breach there that I couldn't surpass I don't think ever maybe. It's just that one interaction

C: I think marriage is ... yeah

A: I think you have to communicate...

B: Mexican American culture, I mean if you go to a.. a function ... which they're always mixed generational, I mean it's all of a bunch of different generations there but inevitably the guys are over... like they're usually hanging outside drinking beer ...

C: Right

B: and the women are all inside and it would never dawn on... I don't even want to be part of their conversation the guys conversation because I'm having a good time inside

A: Um hmm

B: with the women and it's not just about work because it doesn't seem like work when there's a whole bunch of women

A: You're washing dishes

B: Usually you're washing dishes....

[...] (A and B talking at once)

A: The guys are in the living room and they're watching football in the recliners

B: And you're not talking very much

C: Right

A: You know pass the beer uhhhh (laughs)

C: Wow

B: Hey can you come over and take a look at my transmission here?

A: No but we're being ... we're being mean

B: I mean that's stereotypical

A: We're...Yeah

C: No, that's very interesting

B: But

A: But we're talking about America... American, North American...

B: And... I mean there is set roles... because when I was looking at the.. the ... what would people say about a woman who used a masculine communication style.. You do have to be careful about using a masculine communication style because what do they think? We talked about this earlier what do they say if a woman is too assertive, or aggressive, when she speaks? She is a ...

A: Can't say it (laughs)

B: She's a b----

C: Look, at the same time, like I.... what if a male uses a really feminine communication style?

B: Oh he's gay

A: He's gay

C: Right

A: That's what people say

B: No... yeah...

C: Right...

B: There's no question about it

C: So what're some of the differences between men and women's talk in our culture... well we sort of... [...]

B: Well I think men are more direct

A: Um hmm definitely

B: Men are more direct and more concise. Women play word games a lot.

C: Hmm

A: And women like to talk for the sake of talking

B: Yeah

A: Whereas men use it for a function, don't you think?

B: Yeah that's true

C: Anyway, yeah, I think it's all individuals...

B: I mean I've never heard anyone say...

C: 'cause like I talk for the sake of talking ... but my wife, from a different culture, she talks she knows exactly what she's going to talk about when she does it... I'll just sit there and like talk to myself but I haven't...[...]

B: All right we're [...].

===== end =====

Time: Second Portion: Approximately 5:46;
Total time: Approximately 8:19

Appendix 4: Scoring Rubric for Recalls

Listening comprehension in ESL class discussions:
Evaluating recall protocols

Dear colleague:

Thanks very much for agreeing to help out in evaluating student responses to the listening in my dissertation study.

Here's what do to.

You have some responses written by students who participated in my study. They watched a video of three native English speakers having a discussion; then the students in the study wrote recalls of what they understood. What we want to know is if what the students wrote matches what was said, both in terms of main ideas and details.

To make your evaluation,

First read over the transcript of the discussion.

Write the student's code number on the evaluation form.

Read each student response.

Read down the evaluation form.

Compare the student response to what was said.

If, in your judgment, the content of what the student wrote matches what was said, mark the answer sheet accordingly.

Remember that memory is not a tape recorder; comprehension and recall involve some interpretation. For this reason, other studies that use recalls have advised raters to use "lenient" criteria in judging. So, in this case, do try to be accurate, but feel free to give students the benefit of the doubt. Try to be as consistent as you can.

In the discussion, some speakers repeat themselves. If a student recall captures the meaning, even if the words are repeated on the left, go ahead and check any instance where you think the student has captured the meaning shown in the transcript.

The discussants spoke in response to a question from Dunkel et. al. (1996, p. 106):

Explain why communication between men and women can be considered cross-cultural communication. What sorts of misunderstandings might men and women encounter because of their different styles of communication? (

Main point ratings:

Rating instructions: Compare the student response to the main idea summaries below. Try to answer the question: "How completely does the student's response capture the ideas of the discussion?" Give a high rating to a response that fully captures the main ideas and a low rating to a response that does not capture the main ideas. Mark your answers on the score sheet using a No. 2 pencil.

0 – No answer / answer incomprehensible	1 – Comprehensible answer but misses the point	2	3 – About half the main idea	4	5 – Fully captures the main idea
---	--	---	------------------------------	---	----------------------------------

Number of student response and rater:

Main ideas:

Question	Summary from video
1	<p>Question being discussed:</p> <p>Is male-female communication a form of cross-cultural communication?:</p> <p>“B: Do you think that communication between men and women really should be considered within the context of cross-cultural communication? I mean even if you and I who are from the... the same culture I mean do you think that there’s a difference?”</p>
2	<p>Responses: Speaker C’s response:</p> <p>Not sure, but then states No – Individual differences have a greater effect on communication than do cross-gender differences.</p> <p>C: I don’t know. But I will say that I think that among me[...] I don’t even think its male female thing I think it’s every single freaking individual out there ... it’s not a male female thing its just an individual individual thing and a lar...on a large scale you could say that it is sort of a [fe] male female thing but it all sort of disappears when you when you look at individual interactions.</p>

3	<p>Speaker B's Response: Disagrees with Speaker C; that is, Answers YES – male-female communication can be seen as cross cultural communication, and, gender differences have a greater effect on communication than do individual differences:</p> <p>B: No I think, but I think there's still, I understand what you're saying ...on an individual case that's not necessarily but I think that you can look at larger generalities. ... one of the cultural differences that I think are the in terms of cross ... is I think that women are more attuned to subtleties of language than men are because we use it so much more at least and I'm just speaking about just within this culture, um, but it is very much a part of our play from the time that we're very little girls.</p> <p>Speaker A's Response: Yes, cross-gender communications can be seen as cross cultural communication;</p>
4	<p>Speaker A's Response: Yes, cross-gender communications can be seen as cross cultural communication;</p> <p>Disagrees with Speaker C; agrees with Speaker B: cross-gender communication has a greater effect on communication than do individual differences:</p> <p>"A: Yeah it's (Barbies or house are)not competitive A: I have a niece and a nephew and I see it all the time A: They're (Barbies, house and dress up are) all interaction instead of competition.</p>

Detail rating:

Compare the student response with the transcript below. Generally, the transcript uses clauses as the major units, but does follow natural pauses or stress patterns in speech. Rating: If a student response contains the content from the transcript below, underline that part of the student response and write the number of that content above where you underlined. After rating the response, count up the number of content units and write that at the bottom of the response.

1	B: Do you think
2	that communication between men and women really should be considered within the context of cross-cultural communication?
3	I mean,
4	even if you and I who are from the ... the same
5	C: [...] like the same
6	B: ... the same culture
7	I mean,
8	do you think
9	that there's a difference?
10	C: I don't know.
11	But I will say
12	that I think
13	that ... among me[...] I don't even think
14	its male female thing
15	I think
16	it's every single freaking individual out there
17	because like my male like my male friends have totally different ideas of masculinity and femininity
18	than I have
19	and so I'm starting to learn in my re[...],
20	you know all the stuff
21	I've been experiencing the last five years
22	that it's not a male female thing
23	its just an individual individual thing
24	and a lar ... on a large scale you could say
25	that it is sort of a [...] male female thing

26	but it all sort of disappears
27	when you ... when you look at individual interactions.
28	Like if I were to go out and talk to some ...
29	I mean
30	like I met some frat guys recently
31	and they're not all as sexist
32	as I thought
33	they were,
34	at least the guys I met.
35	B: Uh huh
36	C: [...] I had this stereotype of them being super sexists but so ... uh
37	B: No I think,
38	but I think
39	there's still,
40	I understand
41	what you're saying...
42	C: Yeah
43	B: ...on an individual case
44	that's not necessarily
45	but I think
46	that you can look at larger generalities.
47	I mean
48	I'm thinking
49	about even when boys and girls are very young ...
50	C: Yeah...
51	B: ...even the play patterns are different
52	I mean
53	boy play is a game
54	and there's a winner and a loser
55	you know
56	I mean
57	it's like...

58	A: [...]
59	B: ...football or baseball or or whatever
60	and there's not a whole lot of talking
61	because you have the rules of the game
62	and that mediates any sort of conflict
63	there is.
64	No
65	I'm sorry
66	that's an out;
67	that's the rule of the game.
68	Girls on the other hand,
69	I mean
70	what are... what's one of the most common little girl play?
71	B: Barbies
72	A: House
73	B: First of all...
74	A: Yeah
75	B: ...nobody... nobody wins at Barbies
76	A: Yeah it's not competitive
77	B: It's all talk play
78	C: [...] did you read this somewhere?
79	B: ... from house,
80	no!
81	A: It's true
82	B: It's growing up around little kids
83	C: Ahhh

84	A: I have a niece and a nephew
85	and I see it all the time
86	B: Girls tend to play talk games;
87	house is a talk game.
88	Barbies is a talk game
89	A: Umm hmm
90	C: Wow
91	B: So...
92	A: Dress up...
93	B: Dress up is a talk game.
94	A: They're all interaction instead of competition.
95	B: Which I think
96	is one of the reasons
97	why women one of the cultural differences
98	that I think
99	are the ... in terms of cross ...
100	is I think
101	that women are more attuned to subtleties of language
102	than men are;
103	C: Yeah
104	B: because we use it so much more at least
105	and I'm just speaking about just within this culture, um,
106	but it is very much a part of our play
107	from the time that we're very little girls.

References

- Aitchison, J. (1994). Understanding words. In G. Brown, K. Malmkjær, A. Pollitt, & J. Williams (Eds.), *Language and understanding* (pp. 82-95). New York: Oxford University Press.
- Alexander, P., Schallert, D. L., & Hare, V. C. (1991). Coming to terms: How researchers in learning and literacy talk about knowledge. *Review of Educational Research*, 61, 315-343.
- Alvermann, D. E., Young, J. P., Weaver, D., Hinchman, K. A., Moore, D. W., Phelps, S. F., Thrash, E. C., Zalewski, P. (1996). Middle and high school students' perceptions of how they experience text-based discussions: A multi-case study. *Reading Research Quarterly*, 31, 244-267.
- Anderson, A., & Lynch, T. (1988). *Listening*. New York: Oxford University Press.
- Bachman, L. F. (1990). *Fundamental considerations in language testing*. New York: Oxford University Press.
- Bartlett, F. C. (1967). *Remembering: A study in experimental and social psychology*. New York: Cambridge University Press.
- Basturkmen, H. (2002). Negotiating meaning in seminar-type discussions and EAP. *English for Specific Purposes*, 21, 233-242.
- Basturkmen, H. (2003). So what happens when the tutor walks in? Some observations on interaction in a university discussion group with and without the tutor. *Journal of English for Academic Purposes*, 2, 21-33.
- Benson, M. (1989). The academic listening task: A case study. *TESOL Quarterly*, 23, 421-445.
- Bland, J. M., & Altman, D. G. (1995, January 21). Multiple significance tests: The Bonferroni method. *BMJ (British Medical Journal)*, 310, 6973, 170. Retrieved June 15, 2004 from <http://bmj.com/cgi/content/full/310/6973/170>
- Bligh, D. (2000). *What's the point in discussion?* Portland, OR: Intellect.

- Brandsford, J. D., & Johnson, M. K. (1972). Contextual prerequisites for understanding: Some investigations of comprehension and recall. *Journal of Verbal Learning and Behavior*, 11, 717-726).
- Brown, G., & Yule, G. (1983a). *Discourse analysis*. Cambridge: Cambridge University Press.
- Brown, G., & Yule, G. (1983b). *Teaching the spoken language: An approach based on the analysis of conversational English*. New York: Cambridge University Press.
- Brown, G. (1994). Modes of understanding. In G. Brown, K. Malmkjær, A. Pollitt, & J. Williams (Eds.), *Language and understanding* (pp. 10-20). New York: Oxford University Press.
- Brown, G. (1995). Dimensions of difficulty in listening comprehension. in D. J. Mendelsohn and J. Rubin (Eds.), *A guide to the teaching of second language listening* (pp. 59-73). San Diego, CA: Dominie.
- Brubeck, M., Haberman, J., Mazzoni, D., et. al. (2004, May 8). Audacity (Version 1.2.1) [Computer software]. Retrieved May 11, 2004, from <http://audacity.sourceforge.net/>
- Buck, G. (1995). How to become a good listening teacher. In D. J. Mendelsohn and J. Rubin (Eds.), *A guide to the teaching of second language listening* (pp. 113-131). San Diego, CA: Dominie.
- Buck, G. (2001). *Assessing listening*. New York: Cambridge University Press.
- Call, M. E., & Sotillo, S. M. (1995). Is talk cheap? The role of conversation in the acquisition of language. *Hispania*, 78, 114-121.
- Carrell, P., & Eisterhold, J. C. (1987). Schema theory and ESL reading pedagogy. In M. H. Long & J. C. Richards (Eds.), *Methodology in TESOL: A book of readings* (pp. 218-232). Boston: Heinle & Heinle. (Reprinted from *TESOL Quarterly*, 17, 553-573, 1983)
- Chaudron, C. (1995). Academic listening. In D. J. Mendelsohn and J. Rubin (Eds.), *A guide to the teaching of second language listening* (pp. 74-96). San Diego, CA: Dominie.

- Chaudron, C., Loschky, L., & Cook, J. (1994). Second language listening comprehension and lecture note-taking. In J. Flowerdew (Ed.), *Academic listening: Research perspectives* (pp. 75-92). New York: Cambridge University Press.
- Chiang, C. S. & Dunkel, P. (1992). The effect of speech modification, prior knowledge, and listening proficiency on EFL lecture learning. *TESOL Quarterly*, 26, 345-374.
- Chu, H. (1999). *The effects of culture-specific rhetorical conventions on the L2 reading recall of Chinese students*. Unpublished doctoral dissertation, University of Texas, Austin.
- Chu, H. (2004, March). *Cross referencing the effects of culture-specific rhetorical conventions*. Paper presented at the 38th annual meeting of Teachers of English to Speakers of Other Languages (TESOL), Long Beach, CA.
- Chung, H. (1999). *Interrelationships among prior knowledge, prior beliefs, and language proficiency in second language listening comprehension*. Unpublished doctoral dissertation, University of Texas, Austin.
- Coniam, D. (2001). The use of audio or video comprehension as an assessment instrument in the certification of English language teachers: A case study. *System*, 29, 1-14.
- Conrad, L. (1985). Semantic versus syntactic cues in listening comprehension. *Studies in Second Language Acquisition*, 7, 59-72.
- Conrad, L. (1989). The effects of time-compressed speech on native and EFL listening comprehension. *Studies in Second Language Acquisition*, 11, 1-16.
- Damasio, A. R. (1994). *Descartes' error: Emotion, reason, and the human brain*. New York: Avon
- Damasio, A. R., & Damasio, H. (1992, September). Brain and language. *Scientific American*, 267, 88-95.
- Davis, R. S. (2003). *Breaking the silent barrier on the web*. Retrieved August 12, 2004 from, <http://www.esl-lab.com/tutorials/lesson1.htm>

- Dunkel, P. A., Pialorsi, F., & Kozyrev, J. (1996). *Advanced listening comprehension* (2nd ed). Boston: Heinle & Heinle.
- Educational Testing Service (1998). *TOEFL test preparation kit workbook*. Princeton, NJ: Author.
- Educational Testing Service (2002). *TOEFL test score and data summary*. Princeton, NJ: Author. Available: <http://www.ets.org/ell/research/download.html#researchpubs>
- Ferree, T., & Sanabria, K. (2004). *North Star high intermediate listening and speaking* (2nd ed.). White Plains, NY: Longman.
- Ferris, D. (1998). Students' views of academic aural / oral skills: A comparative needs analysis. *TESOL Quarterly*, 32, 289-318.
- Feyten, C. M. (1991). The power of listening ability: An overlooked dimension in language acquisition. *The Modern Language Journal*, 75, 173-180.
- Flowerdew, J. (Ed.) (1994). *Academic listening: Research perspectives*. New York: Cambridge University Press.
- Fowler, K. (1995). Fast speech dictation. In D. Nunan & L. Miller (Eds.), *New ways in teaching listening* (pp. 178-179). Alexandria, VA: Teachers of English to Speakers of Other Languages, Inc.
- Geigerich, H. J. (1992). *English phonology: An introduction*. New York: Cambridge University Press.
- Gilbert, J. (1995). Pronunciation practice as an aid to listening comprehension. In D. J. Mendelsohn and J. Rubin (Eds.), *A guide to the teaching of second language listening* (pp. 97-112). San Diego, CA: Dominic.
- Glenn, A. (2000). SndSampler (Version 4.4.2) [Computer software].
- Hagen, S. (1997). *Buddhism plain and simple*. New York: Broadway Books.
- Hammer, D. (1995). Student inquiry in a physics class discussion. *Cognition and Instruction*, 13, 401-430.

- Handel, S. (1989). *Listening: An introduction to the perception of auditory events*. Cambridge, MA: MIT Press.
- Hartnack, J. (1967). *Kant's theory of knowledge: An introduction to the Critique of pure reason* (M. H. Hartshorne, Trans.). Indianapolis, IN: Hackett. (Original title: *Kants Erkendelsesteori*)
- Hays, W. L. (1994). *Statistics* (5th ed.). New York: Harcourt Brace.
- Hohzawa, A. (1998). *Listening comprehension processes of Japanese students of English as a second language (ESL): Does background knowledge really matter?* Unpublished doctoral dissertation, State University of New York, Buffalo.
- iMovie (Version 2.0.3) [Computer software]. (2000). Cupertino, CA: Apple Computer.
- Jackson, J. (2002). The China strategy: A tale of two case leaders. *English for Specific Purposes*, 21, 243-259.
- Jackson, J. (2004, in press). Case-based teaching in a bilingual context: Perceptions of business faculty in Hong Kong. *English for Specific Purposes*, 23.
- Jensen, C., & Hansen, C. (1995). The effect of prior knowledge on EAP listening-test performance. *Language Testing*, 12, 99-119.
- Johnson, R. E. (1973). Meaningfulness and the recall of textual prose. *American Educational Research Journal*, 10, 49-58.
- Kachru, B. B. (1995). World Englishes: Approaches, issues, and resources. In H. D. Brown & S. T. Gonso (Eds.), *Readings on second language acquisition* (pp. 229-261). Englewood Cliffs, NJ: Prentice Hall. (Reprinted from *Language Teaching*, 25: 1-14, 1992)
- Kant, I. (1990). *Critique of pure reason* (J. M. D. Meiklejohn, Trans.). New York: Prometheus. (Original work published 1781)
- Kim, J. (2000). *Foreign language listening anxiety: A study of Korean students learning English*. Unpublished doctoral dissertation, University of Texas, Austin.

- Kintsch, W. (1988). The role of knowledge in discourse comprehension: A construction-integration model. *Psychological Review*, 95, 2, 162-182.
- Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. New York: Cambridge University Press.
- Kozyrev, J. R., & Stein, M. B. (2001). *Talk It Through! Listening, Speaking, and Pronunciation 2*. Boston: Houghton Mifflin.
- Krashen, S. D. (1996). The case for narrow listening. *System*, 24, 97-100.
- Ladefoged, P. (1993). *A course in phonetics* (3rd ed.). New York: Harcourt Brace Javonovich.
- Lee, J., & Schallert, D. L. (1997). The relative contribution of L2 language proficiency and L1 reading ability to L2 reading performance: A test of the threshold hypothesis in an EFL context. *TESOL Quarterly*, 31, 713-739.
- Lim, P., & Smalzer, W. (1996). *Noteworthy: Listening & notetaking skills* (2nd ed.). New York: Heinle & Heinle.
- Long, D. R. (1990). What you don't know can't help you: An exploratory study of background knowledge and second language listening comprehension. *Studies in Second Language Acquisition*, 12, 65-80.
- Lund, R. J. (1991). A comparison of second language listening and reading comprehension. *The Modern Language Journal*, 75, 196-204.
- Lynch, T. (1995). The development of interactive listening strategies in second language academic settings. In D. J. Mendelsohn and J. Rubin (Eds.), *A guide to the teaching of second language listening* (pp. 166-185). San Diego, CA: Dominic.
- Madden, C. G., & Rohlck, T. H. (1997). *Discussion and interaction in the academic community*. Ann Arbor, MI: The University of Michigan Press.
- Madden, J. P. (1997). *Listening comprehension and cognition*. Unpublished master's report, The University of Texas at Austin.

- Markham, P. & Latham, M. (1987). The influence of religion-specific background knowledge on the listening comprehension of adult second-language students. *Language Learning*, 37, 157-170.
- McKeachie, W. J. (1994). *Teaching tips: Strategies, research and theory for college and university teachers* (9th ed). Lexington, MA: Heath.
- Mehan, H. (1985). The structure of classroom discourse. In Van Dijk, T. A. (Ed.), *Handbook of discourse analysis: Vol. 3: Discourse and dialogue*, pp. 119-131. New York: Academic Press.
- Mendelsohn, D. J. (1995). Applying learning strategies in the second / foreign language listening comprehension lesson. In D. J. Mendelsohn and J. Rubin (Eds.), *A guide to the teaching of second language listening* (pp. 132-150). San Diego, CA: Dominic.
- Mendelsohn, D. J. (1998). Teaching listening. *Annual Review of Applied Linguistics* 18, 81-101.
- Mendelsohn, D. J., & Rubin, J. (Eds.) (1995), *A guide to the teaching of second language listening*. San Diego, CA: Dominic
- Morley, J. (1990). Trends and developments in listening comprehension: Theory and practice. In J. E. Alatis (Ed.), *Georgetown Round Table on Languages and Linguistics 1990: Linguistics, language teaching and language acquisition: The interdependence of theory, practice and research*, (pp. 317-337). Washington, DC: Georgetown University Press.
- Nassaji, H. (2002). Schema theory and knowledge-based processes in second language reading comprehension: A need for alternative perspectives. *Language Learning*, 52, 439-481.
- National Public Radio. (2004). *NPR's Mideast coverage*. Retrieved August 14, 2004 from <http://www.npr.org/news/specials/mideast/>
- Numrich, C. (1997). *Face the issues: Intermediate listening and critical thinking skills* (2nd ed.). White Plains, NY: Longman.
- Nuwash, C. F. (1997). *Reading and auding (listening comprehension) in secondary English as a second language students*. Unpublished doctoral dissertation, University of Texas, Austin.

- O'Malley, J. M., Chamot, A. U., & Küpper, L. (1995). Listening comprehension strategies in second language acquisition. In H. D. Brown & S. T. Gonzos (Eds.), *Readings on second language acquisition* (pp. 138-160). Englewood Cliffs, NJ: Prentice Hall. (Reprinted from *Applied Linguistics*, 10, 418-437, 1989)
- Omaggio Hadley, A. (1993). *Teaching language in context* (2nd ed.). Boston: Heinle & Heinle.
- Palfreman, J. (Writer, Producer, Director) (2004, April 8). Diet wars [Television series episode]. In D. Fanning (Executive Producer), *Frontline*. Boston: WGBH. Retrieved August 14, 2004 from <http://www.pbs.org/wgbh/pages/frontline/shows/diet/>
- Perneger, T. V. (1998, April 18). What's wrong with Bonferroni adjustments. *BMJ (British Medical Journal)*, 316, 1236-1238. Retrieved June 15, 2004 from <http://bmj.com/cgi/content/full/316/7139/1236?view=full&pmid=9553006>
- Pica, T, Young, R., & Doughty, C. (1987). The impact of interaction on comprehension. *TESOL Quarterly*, 21, 737-758
- Pimsleur, P., Hancock, C., & Furey, P. (1977). Speech rate and listening comprehension. In M. Burt, H. Dulay, & M. Finocchiaro (Eds.), *Viewpoints on English as a second language in honor of James E. Alatis* (pp. 27-34). New York: Regents.
- Pinker, S. (1999). *Words and rules: The ingredients of language*. New York: Basic Books.
- Porter, P. A., & Grant, M. (1992). *Communicating effectively in English: Oral communication skills for non-native speakers*. Boston: Heinle and Heinle.
- Read, J. (2002). The use of interactive input in EAP listening assessment. *Journal of English for Academic Purposes*, 1, 105-119
- Resnick, L. B., Salmon, M., Zeitz, C. M., Wathen, S. H., & Holowchak, M. (1993). Reasoning in conversation. *Cognition and Instruction*, 11, 3 & 4, 347-364.

- Richards, J. (1990). *The language teaching matrix*. New York: Cambridge University Press.
- Richards, J. C. (1987) Listening comprehension: Approach, design, procedure. In M. H. Long & J. C. Richards (Eds.), *Methodology in TESOL: A book of readings* (pp. 161-176). Boston: Heinle & Heinle. (Reprinted from *TESOL Quarterly*, 17, 153-168, 1983)
- Rivers, W. M., & Temperley, M. S. (1978). *A practical guide to the teaching of English as a second or foreign language*. New York: Oxford University Press.
- Rodriguez, R. (1982). *Hunger for memory: The education of Richard Rodriguez*. New York: Bantam.
- Romo, H. D., & Falbo, T. (1996). *Latino high school graduation: Defying the odds*. Austin, TX: University of Texas Press.
- Rost, M. (1990). *Listening in language learning*. New York: Longman.
- Rost, M. (2002). *Teaching and researching listening*. New York: Pearson.
- Rubin, J. (1994). A review of second language listening comprehension research. *The Modern Language Journal*, 78, 199-221.
- Schallert, D. L., Lissi, M. R., Reed, J. H., Dodson, M. M., Benton, R. E., & Hopkins, L. F. (1996). How coherence is socially constructed in oral and written classroom discussions of reading assignments. In D. J. Leu, C. K. Kinzer, K. A. Hinchmann (Eds.), *Literacies for the 21st century: Research and practice; Forty-fifth yearbook of the National Reading Conference*, (pp. 471-483). Chicago: National Reading Conference.
- Schmidt-Rinehart, B. C. (1994). The effects of topic familiarity on second language listening comprehension. *The Modern Language Journal*, 78, 179-189.
- Shohamy, E. & Inbar, O. (1991). Validation of listening comprehension tests: The effect of text and question type. *Language Testing*, 8, 23-40.

- Steinberg, D. D., Nagata, H., & Aline, D. P. (2001). *Psycholinguistics: Language, mind and world* (2nd ed.). Harlow, England: Pearson Education.
- Stephens, J. (1996). *Applied multivariate statistics for the social sciences* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum.
- Tsui, A. B. M. (1994). *English conversation*. New York: Oxford University Press.
- Tsui, A. B. M., & Fullilove, J. (1998). Bottom-up or top-down processing as a discriminator of L2 listening performance. *Applied Linguistics*, 19, 4, 432-451.
- Tyler, M. D. (2001). Resource consumption as a function of topic knowledge in nonnative and native comprehension. *Language Learning*, 51, 257-280.
- University of Texas at Austin Information Technology Services (2004, March 17). *General FAQ #29: Adjusted Bonferroni Comparisons*. Retrieved June 17, 2004, from <http://www.utexas.edu/its/rc/answers/general/gen29.html>
- Ur, P. (1981). *Discussions that work: Task-centred fluency practice*. New York: Cambridge University Press.
- Ur, P. (1984). *Teaching listening comprehension*. New York: Cambridge University Press.
- Urquhart, A. H. "Sandy", & Weir, C. J. (1998). *Reading in a second language: Process, product and practice*. New York: Addison Wesley Longman.
- Vygotsky, L. S. (1962). *Thought and language*. (E. Hanfmann & G. Vakar, Trans.). Cambridge, MA: MIT Press. (Original work published 1934)
- Wainer, H., & Lukhele, R. (1997). How reliable are TOEFL scores? *Educational and Psychological Measurement*, 57, 741-759. Retrieved August 16, 2004 from Expanded Academic ASAP database.
- White, G. (1998). *Listening*. New York: Oxford University Press.
- Widdowson, H. (1998). The conditions of contextual meaning. In K. Malmkjær & J. Williams (Eds.), *Context in Language Learning &*

Language Understanding (pp. 6-23). New York: Cambridge University Press.

VITA

John Patrick Madden was born in Litchfield, Illinois on May 30, 1963, the son of John Patrick Madden and Barbara Ann Madden. After graduating from Gillespie Community High School, Gillespie, Illinois, in 1981, he entered the University of Illinois at Urbana-Champaign. He received the degree of Bachelor of Arts from the University of Illinois at Urbana-Champaign in May 1985. He received the degree of Master of Science from the University of Illinois at Urbana-Champaign in August 1986. Subsequently, he worked as a reporter and then taught English in the United States Peace Corps at Kitandi Secondary School, Kitandi, Kenya, in 1989-1990. On returning to the United States, he received his teaching credential from Blackburn College, Carlinville, Illinois, in 1992. He then taught Spanish and English at San Jacinto Intermediate School, Pasadena, Texas. In 1995, he began teaching English as a Second Language at the International Office at the University of Texas and entered the Graduate School at The University of Texas. He received the degree of Master of Arts from the University of Texas in May 1997. He then taught English as a Second Language, and English, at Del Valle High School, Del Valle, Texas. In 1998, he returned to teaching English as a Second Language at the International Office at the University of Texas and re-entered the Graduate School at the University of Texas. In 2000, he

became the coordinator of the computer lab at ESL Services, at the International Office at the University of Texas. In 2001, 2002, 2003, and 2004, he gave presentations at the Annual Convention of Teachers of English to Speakers of Other Languages (TESOL, Inc.) on his research and teaching interests in the areas of second language listening comprehension and computer assisted language learning.

Permanent Address: 2504 Huntwick Drive, #1412

 Austin, Texas 78741

This dissertation was typed by John Patrick Madden.