The phonological acquisition of international teaching assistants receiving training in an ESL context

by

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ABSTRACT

The purpose of this study is to consider whether the pronunciation of English for Mandarin Chinese speaking International Teaching Assistants (ITAs) shows improvement after exposure to formal pronunciation training. In particular, this study will consider whether the pronunciation of the students improves over the course of a semester in an oral English class for ITAs by analyzing their production on the SPEAK test given at Iowa State University. One feature of this study is that it attempts to consider pronunciation improvement over time while also using unrehearsed speech samples as the data. Nine native speakers of Mandarin Chinese participated in this study. They took the SPEAK test before and after a 14 week course in oral English. Native speaker raters were used to rate the accuracy of specific examples from the tapes of the SPEAK tests to see whether the students' pronunciation improved over the course of the semester. The vowels /ai/ as in *time,* /ey/ as in *make,* the voiceless consonant /θ/ as in *think,* and the acquisition of focus (the syllable within a phrase that receives the most emphasis) were analyzed in order to attempt to determine a hierarchy of which of these features would show the most improvement. The role of practice outside of class was also considered as a factor that may affect the acquisition of phonology. The subjects were divided into high and low groups based on their self reported amount of pronunciation practice outside of class. These two groups were compared to determine whether outside

practice influences pronunciation improvement. Two case studies were also compared to consider more closely the role of outside practice.

The research questions being considered in this study are, 1) Do segmental features (vowels and consonants) and suprasegmental features (specifically sentence focus) show improvement over time?, and 2) Does the pronunciation of Chinese adult learners of English improve over the course of a semester when they are exposed to explicit instruction on pronunciation features and outside practice?

The findings of the study showed that there was no statistically significant improvement for the group as a whole. However, consideration of just those subjects who scored low at the beginning of the course showed that there may be improvement for /θ/ and focus accuracy, but no change occurred for /ey/. For the analysis of outside practice, there was little difference for the two groups for pronunciation accuracy, though the high group had a higher average score for the SPEAK test than did the low group. There was also some evidence from the case studies that pronunciation accuracy and language proficiency improve as a result of outside practice.

CHAPTER 1: INTRODUCTION

Since the early 1970s, there has been a steady increase in the number of international students coming to the United States to study at universities. Particularly graduate programs in the sciences have attracted students from around the world. As of the mid-1980s, foreign students earned nearly half of all graduate degrees in the sciences and engineering (Mashburn & Van de Water, 1984 cited in Kaplan, 1989).

A large number of these students have relied on teaching assistantships to provide financial support for their studies. These students, typically referred to as international teaching assistants (ITAs), have often come with high levels of motivation and intelligence but with a variety of levels of English ability as well as a range of cultural notions of the role of a teacher in a classroom. This has led to a number of problems that the universities had not anticipated prior to this influx (Kaplan, 1989).

One segment of the ITA population, those from People's Republic of China, makes up roughly 30% of all ITAs, making them a particularly important group. Many of these students are particularly weak in their oral abilities in English, including pronunciation (Kaplan, 1989).

One of the biggest problems surrounding the ITA issue is that the students in classes taught by ITAs often complain that they are not able to understand the

pronunciation of their ITA. Both the students in these classes and their parents have expressed frustration at this situation because they feel that the unintelligibility of the ITA is adversely affecting the achievement of the students. Lawsuits have been filed, including one in which a student blamed a failing grade in a course on the unintelligibility of his ITA (Greer, 1993 cited in Dick and Robinson, 1994).

As evidence of the extent of this problem, one study found that two groups of raters, one consisting of 10 undergraduate students and the other consisting of 6 trained ESL teachers, both ranked pronunciation as the primary problem for ITAs after watching video presentations. Both groups ranked pronunciation as more problematic than such issues as clarity of expression, development of explanation, and grammar (Hinofotis and Bailey, 1980). Another study found that when undergraduate students listened to presentations by non-native speaking TAs, the primary cause of lack of understanding by the students was pronunciation (Gallego, 1990).

The TAs themselves are also often aware of their lack of intelligible pronunciation. They also often rank pronunciation as their greatest hindrance to communication (Hahn and Belcher, 1989; Bauer, 1991 cited in Hahn, 1999).

The primary goal of pronunciation instruction for ITAs is not nativelike pronunciation but pronunciation that is intelligible to their students. Nativelike pronunciation is not a practical goal since few second language learners are able to achieve nativelike pronunciation of a second language in adulthood (Celce-Murcia, Brinton and Goodwin, 1996).

It has been suggested that there is a level at which pronunciation becomes unintelligible and therefore causes the speaker to no longer be understood. This level has been called the threshold level (Hinofotis and Bailey, 1980). Below the threshold level of pronunciation accuracy, non-native speakers cannot communicate orally, no matter how good their grammar, fluency, or vocabulary may be. Thus, if an ITA drops below this threshold level, many of the students will not be able to understand or will become confused or frustrated.

One approach to language teaching, known as the communicative approach, has taken this into account in the teaching of pronunciation. The communicative approach, which was developed in the 1970s, emphasizes the importance of language as communication. Thus, the focus of this approach is on teaching language within the context of its meaning, rather than analyzing language in a decontextualized manner. This approach to teaching emphasizes tailoring the instruction to the language needs of the students so that they are able to use the language in meaningful situations. Therefore, the goal of teaching pronunciation according to the communicative approach is not to make the learners speak with nativelike pronunciation, but to help them to pass the threshold level so that they become intelligible to those people with whom they will communicate (Celce-Murcia, Brinton and Goodwin, 1996).

One problem with learning and teaching pronunciation of a second language is that while students are often able to produce certain sounds and features easily in isolation, this often does not transfer to unrehearsed speech. A common frustration of pronunciation teachers is that immediately after their students successfully

demonstrate their ability to produce a feature in isolation, the students will resort to their old habits of producing the feature incorrectly as soon as they attempt to use it in a communicative setting. As one instructor has observed, "Most instructors have had the experience of hearing flawless productions of the 'th' sound in structured exercises, only to hear at the end of class, 'Sanks, see you on Sursday'" (Grant, 1999, p. 18). Therefore, this study will consider the improvement of the pronunciation of unrehearsed speech from an oral test as opposed to controlled drills, readings or mimicry.

An issue that will be discussed in this study is whether suprasegmentals (stress, intonation, rhythm) or segmentals (vowels and consonants) improve the most over time. It has often been suggested that suprasegmentals improve the most, though the evidence is far from conclusive, as will be discussed in the next chapter. It has also been suggested that suprasegmentals deserve more attention in the classroom because they help the listener to process the information they are hearing, thereby leading to greater intelligibility (Gilbert, 1990).

Definition of Terms

There are two categories that are considered in the teaching of pronunciation. The first is called segmentals. Segmentals can be defined as the individual sounds that make up a language. They are divided into vowels and consonants. The second category is called suprasegmentals because they are above the segmental level. These are features such as rhythm, stress, intonation, and focus.

The segmental features that were considered for this study were the vowel sounds /ai/ as in *time* and /ey/ as in *make*, and the voiceless consonant /θ/ as in *think*, as well as focus. The vowel sounds were chosen because they seemed to be difficult sounds for these learners to produce accurately based on their production during the course.

Focus, the only suprasegmental feature considered, has also been called primary stress, prominence, and emphasis. It refers to the syllable within a phrase that receives the most emphasis through a change in pitch, loudness, or lengthening of the syllable (Levis, 2000). In the dialogue below, taken from a textbook, the focus has been marked to illustrate the rules of focus placement.

X: I've got to study! Where've I put my book?

Y: Which book?

X: My calculus book. (Grant, 1993)

In the first line, the focus has been placed on the words *study* and *book*. In both of these cases, these words are the final content words of the phrase. Thus, the first rule for placing focus is that at the beginning of a new topic or new conversation, focus is typically placed on the final content word (a word that carries meaning as opposed to a function word which serves a grammatical purpose). However, in the next two lines, the focus shifts to *which* and *calculus*. This demonstrates the second rule of focus placement, which is that focus is placed on new information. The term *new information* refers to a content word that is being mentioned for the first time by a speaker, as opposed to *old information* which is any content word that has already been mentioned. Thus, the word *book* in the second line above becomes old

information because it has already been mentioned and therefore is no longer highlighted information. The word *book* is now *back-grounded*, meaning that it is spoken with a lower, flattened pitch, and thus it is no longer given focus (Celce-Murcia, Brinton, and Goodwin, 1996).

Purpose

This study will consider whether teaching pronunciation instruction has an effect on the acquisition of phonology in unrehearsed speech for Chinese ITAs. This issue has major implications for any ESL teachers who want to help their students to improve their pronunciation of English.

The purpose of this study is to consider the speech of 9 Chinese international teaching assistants and analyze transcripts of SPEAK tests taken before and after a 14 week course to consider the use of the sounds /ai/ as in *time*, /ey/ as in *make,* and /θ/ as in *think* and the use of sentence focus.

There are two research questions for this study:

- Do segmental features (vowels and consonants) and suprasegmentals (specifically sentence focus) show improvement over time?
- Does the pronunciation of Chinese adult learners of English improve over the course of a semester when they are exposed to explicit instruction on pronunciation features and outside practice?

Organization of the Study

Chapter 2 will review the literature that has been written on the subjects of Chinese learners of English, intelligibility, formal instruction and second language acquisition, and formal instruction and acquisition of phonology. Chapter 3 will provide an outline of the methodology for this study. This will include a description of the SPEAK test which the subjects were required to take, the course in which the participants were enrolled, the participants in the study, the questionnaire that was given, and the methodology for gathering and analyzing the data. Chapter 4 will provide the results of the study as well as a discussion of the results. This chapter will be divided into two sections based on the research questions for the study in order to determine whether pronunciation improvement occurs after instruction and whether outside practice influences pronunciation improvement. Finally, Chapter 5 will conclude the study with recommendations for future research.

CHAPTER 2: LITERATURE REVIEW

This chapter will include 4 parts that will review several studies that have looked at Chinese learners of English, intelligibility, the role of formal instruction on second language acquisition, and the role of pronunciation teaching on the acquisition of phonology. The subjects of this study are adult native speakers of Mandarin Chinese; therefore, the features seen by researchers to be the most difficult for Chinese learners of English will be outlined. It is also important to consider why native speakers (such as students in classes taught by ITAs) have difficulty understanding non-native speakers and what features tend to cause speakers to be perceived as more unintelligible by the listener so that the features that cause more unintelligibility can be given more attention by teachers. For this reason, the research into the features that limit intelligibility will be considered. Also, the literature on formal instruction on second language acquisition in general will be discussed to provide theoretical background for the role of formal instruction on pronunciation. And finally, since this study is interested in determining if subjects show improved accuracy after being exposed to instruction, the literature on the role of formal instruction on pronunciation acquisition will be considered.

Chinese Learners of English

This section will consider a contrastive analysis of Mandarin Chinese and English. The premise behind the Contrastive Analysis Hypothesis (CAH) is that second language errors are the result of differences between the L1 and the L2. The hypothesis is based on the principle of language transfer, or the influence, both positive and negative, caused by similarities and differences between the target language and any other previously acquired languages. The strong form of the Contrastive Analysis Hypothesis says that the differences between two languages can be used to predict the errors that will occur. The weak form, which is more widely accepted, says that these differences can be used to predict only some of the errors that will occur for learners (Ellis, 1994). Thus, if the weak form of the CAH is accepted, the following comparison can be taken as an indication of the problems of Chinese learners of English, though not a complete and definitive account of all problems.

Few studies have analyzed the pronunciation problems of Chinese learners of English. However, this group is becoming increasingly important, particularly for studies of ITAs, due to the increase in the number of Chinese students in American universities.

Chinese learners of English face a number of challenges in pronunciation. Juffs (1989) has considered the purpose of pitch in Chinese in comparison with English. Pitch is used as a lexical marker in Chinese. Thus, changes in pitch affect the meaning of a word. In English, however, pitch is used to highlight information in sentences, not to distinguish the lexical meaning of individual words. Juffs found

that the Chinese learners in his study were using similar pitch movement for both word stress and focus, likely due to the different function of pitch in their first language.

Another difference between the two languages is the consonant and vowel sounds. For this study, it is important to note that there are no sounds in Chinese that are formed using the tongue and the teeth as is the English /θ/ (Defense Language Institute 1974).

The vowels in Mandarin Chinese are also different from those of English. Most significantly for this study, the diphthongs /ai/ and /ey/ do not appear in Chinese. Instead of these sounds, speakers of Chinese often insert an approximate Chinese equivalent for the English vowels. In the case of /ai/ and /ey/, the sounds that Chinese learners of English often use are /æ/ (as in "cat") and /ɑi/ (similar to the Australian "g'day") respectively (Defense Language Institute, 1974).

Intelligibility of Nonnative Speakers of English

An important factor in the study of pronunciation is intelligibility of nonnative speakers. Ultimately, the most important reason to help students to improve their pronunciation is so that they will be intelligible to those with whom they will come in contact. Thus, it is important to consider what factors cause speakers to be perceived as unintelligible.

This section will first outline the definitions and issues of intelligibility, followed by a discussion of the studies that have attempted to correlate pronunciation factors with intelligibility. This subsection will be divided into suprasegmentals and

segmentals, concluding with a discussion of the factors influencing studies on intelligibility.

Definition of Intelligibility

Smith and Nelson (1985) distinguish the term *intelligibility* from the terms *comprehensibility* and *interpretability*. According to their definition, an utterance is said to be *intelligible* when the individual words of the utterance can be understood and thus can be repeated back by the listener. An utterance can be said to be *comprehensible* when the meaning of the words can be understood within the context. *Interpretability* is the highest level, and can be defined as the ability to understand the meaning behind the utterance, or the intended meaning of the speaker.

Smith and Nelson (1985) point out "it is unnecessary for every speaker of English to be intelligible to every other speaker of English. Our speech/writing in English needs to be intelligible only to those with whom we are likely to communicate in English." In the case of ITAs, those with whom they are likely to communicate are the students that they teach, and thus intelligibility is important for ITAs.

There is evidence that intelligibility is more important than both comprehensibility and interpretability for ITAs. For example, Gallego (1990) played videotaped presentations of three ITAs from South Korea, Italy, and India for undergraduate students. The students were asked to stop the tape when communication broke down (when they failed to understand the speaker) and

identify what word or utterance caused the communication breakdown. "ESL specialists" were then asked to analyze what the cause of the breakdown had been. Intelligibility was the result of 80% of breakdown in communication, and pronunciation was found to be the leading cause of unintelligibility over such things as grammar, flow of speech, and vocabulary.

Attempts to Correlate Pronunciation Factors with Intelligibility

Several attempts have been made to determine which features of pronunciation have the greatest influence on intelligibility. Many studies have indicated that suprasegmental features such as intonation and rhythm are a greater limitation to intelligibility. However, many studies have also suggested that segmental features cause more interference. Few definitive conclusions can be made from these studies. Studies dealing with suprasegmentals will be discussed first, followed by a discussion of studies dealing with segmentals. Table 1 gives a summary of studies that have dealt with the issue of intelligibility.

Suprasegmentals

Some studies have demonstrated that suprasegmental errors are a cause of unintelligibility for listeners. Munro (1995) used a computer program to filter the speech of 10 native speakers of Mandarin Chinese and 10 native speakers of Canadian English. The speech was filtered so that it was rendered unintelligible, and thus the listeners could make no judgments on the basis of segmental information (vowels and consonants). He found that the listeners consistently rated

Table 1: Studies of intelligibility

Study	Listeners	Speakers	Method	Findings
Galloway (1980)	8 nonnative high school Spanish teachers; 8 native high school Spanish teachers; 8 native non-teachers; 8 nonnative non teachers	Second semester learners of Spanish-- NSs of English	Speeches were rated by a number of factors such as pronunciation	NSs of English were more severe in their judgments than NSs of Spanish. Pronunciation accounted for the largest number of errors, yet it was not found to be greatly disturbing.
Fayer and Krasinski (1987)	NS of English and NS of Spanish from Puerto Rico	Puerto Rican ESL learners	Listeners made judgments of intelligibility, irritation and annoyance in reaction to several features of speech including pronunciation	Puerto Rican raters judged the samples more severely than NS of English. Both groups found that segmental errors were more distracting than intonation.
Gallego (1990)	Six trained raters and untrained undergraduate students	Three NNS teaching assistants from Korea, Italy and India.	Oral Proficiency Test tapes were presented to untrained undergrad students who were to determine when communication broke down— each instance was then analyzed by "ESL specialists"	Pronunciation was determined to be the leading cause of unintelligibility.
Anderson-Hsieh, Johnson, and Koehler (1992)	Three trained and experienced SPEAK Test raters	60 samples from SPEAK Test tapes from 11 different language groups	Raters' perception was compared with empirical analysis of the speakers' pronunciation.	Prosody had the strongest effect on intelligibility.
Schairer (1992)	NS of Spanish from Center for Bilingual Studies	NS of English learning Spanish as a second language	Listeners rated on issues such as comprehensibility, native accent, and agreeableness of voice	They found a hierarchy of errors with vowel mistakes as the most unintelligible followed by consonant linkage

Table 1: (cont.)

Study	Listeners	Speakers	Method	Findings
Suenobu, Kanzaki, and Yamane (1992)	48 NSs of English	80 NSs of Japanese in Japanese universities	Listeners were asked to transcribe isolated words and sentences from speeches	Words were more intelligible in context. Consonant deletion caused highest rate of unintelligibility.
Munro (1995)	Untrained NSs of English	NS of Mandarin and NS of English	Speech was filtered and made unintelligible.	Utterances by Mandarin speakers were given lower ratings despite the unintelligibility of all speakers.
Munro and Derwing (1995)	Eighteen NSs of English in ESL class or introductory linguistics class	10Mandarin NSs and 2 English NSs	Listeners were asked to transcribe and to rate the utterances for foreign accent and comprehensibility	Utterances were found to be highly intelligible, but accent was rated highly
Derwing and Munro (1997)	26 native English undergraduate students	48 Cantonese, Japanese, Polish, and Spanish ESL learners at a low level	Accent and comprehensibility were rated and transcriptions were made	Learner level did not seem to affect intelligibility when compared to Munro and Derwing (1995)
Hahn (1999)	Untrained NSs of English-- college freshmen	3 recorded lectures by NNSs	3 versions of the same lecture were recorded; one with native use of focus, one with non-native focus and one with no focus	Subjects listening to version A processed slightly more easily, recalled more, and rated the speaker as a more effective communicator.

the native speakers higher, even though all of the samples were unintelligible. This suggests that nonsegmental factors such as intonation and rhythm have an influence on the listener.

Another study that found suprasegmentals to impede intelligibility was done by Hahn (1999). She studied native speakers' reactions to the focus of non-native speech. She had non-native speakers of English record three different versions of a lecture. The first version placed focus in the same way a native speaker would. The second recording placed focus where a non-native speaker would place it. And the third had no focus at all. She had native speakers listen to these recordings. She found that those native speakers who listened to the version portraying nativelike focus were able to process the lecture slightly easier. They were able to remember main ideas better, and they rated the communicative effectiveness of the speaker higher than did those who heard the other two versions. This suggests that focus can be a limitation to intelligibility since the listeners were better able to process the speeches that were done with nativelike focus.

Another study, by Anderson-Hsieh, Johnson, and Koehler (1992), found a greater effect on intelligibility for suprasegmentals than for segmentals. They used three trained SPEAK test raters to rate 60 speech samples from 11 language groups. The general ratings by the trained raters were compared with empirical analyses of the speakers' pronunciation. They concluded that prosody (intonation and rhythm) was the greatest factor in determining the intelligibility of a NNS. However, the reactions of the trained, experienced raters used in this study may be

quite different from the reaction of an average native speaker who does not have linguistic training and wide exposure to the speech of nonnative speakers.

Segmentals

Although many studies have considered the intelligibility of suprasegmentals to be a problem for second language learners, other studies have found segmentals to be more limiting to intelligibility than suprasegmentals. For example, Fayer and Krasinski (1987), Suenobu, Kanzaki, and Yamane (1992) and Schairer (1992) have all found segmentals to have a greater effect on intelligibility than suprasegmentals. However, there is no agreement even between these studies. Suenobu, Kanzaki and Yamane (1992) found that consonant deletion was the biggest limitation for Japanese learners of English, while Schairer (1992) found that for native speakers of English learning Spanish, vowels were the most inhibiting to intelligibility. The native language of the subjects may be a factor in such studies because of the phonological differences between languages.

Factors Influencing Studies of Intelligibility

The results remain inconclusive as to which features of pronunciation affect intelligibility most. While many have tried to determine a hierarchy of pronunciation errors, there is little evidence to support any of the claims. There is no standard between studies in regard to how to measure intelligibility.

The problem with determining what causes language to be unintelligible is that there are many factors involved that complicate the task. First, trained raters

are likely to rate production with a different standard from untrained raters causing possible differences between studies using different types of raters.

Also, other linguistic factors may interfere with the listener's ability to understand the utterance. Learners with low level proficiency will have problems with such issues as vocabulary and syntax, which may be reflected in ratings of intelligibility by listeners. However, Derwing and Munro (1997) found that such linguistic factors did not influence the intelligibility of the subjects in their study.

The expectations of the listener may also play a role in determining what causes speech to be unintelligible. As Smith and Nelson (1985) point out, "If one expects to understand a speaker, he/she is much more likely to find the speaker intelligible than if he/she does not expect to understand him" (p 333). One study found that foreign accent leads to the perception by listeners that the speaker is less comprehensible and intelligible but that foreign accent does not actually reduce the intelligibility of the speaker (Munro and Derwing, 1995). Thus, the listeners are able to understand even if they rate the speaker low on perceived intelligibility. This suggests that at least some part of the perception that a speaker is unintelligible may be the result of the listener's bias.

Another issue is familiarity with the speaker and the first language of the speaker. Gass and Varonis (1984) considered the connection of familiarity and comprehensibility. They found that the familiarity of the listener with the native language of the speaker, with the topic, and with a specific nonnative speaker greatly increased the ability of the listener to understand the speech.

Another important factor in determining what causes speech to be unintelligible is the first language of the speaker. The phonological differences between different languages make it difficult to create a hierarchy of pronunciation errors. For example, Gimson (1970) and Suenobu, Kanzaki, and Yamane (1992) among others have found that consonants are more important than vowels in the intelligibility of speakers learning English. However, Schairer (1992) came to the exact opposite conclusion in a study of native English speakers learning Spanish (cited in Munro and Derwing, 1995). Another study has found that while pronunciation was perceived as a major problem for native English speaking learners of Spanish, pronunciation was not seen to be greatly disturbing or to hinder understanding, and thus pronunciation did not interfere with intelligibility for these learners as it has for other groups (Galloway 1980). The differences in the results of these studies may be largely attributed to phonological differences between the first languages of the subjects.

Formal Instruction and Second Language Acquisition

The role of formal instruction on second language acquisition is important for this study because it provides theoretical background to the role of formal instruction on pronunciation teaching. It is thought that the issues raised in the study of formal instruction on SLA will also apply to the role of formal instruction on pronunciation, which will be discussed in the next section. This review will focus primarily on the role of formal instruction on production accuracy, as opposed to proficiency, since accuracy is more relevant to the study of pronunciation. According to Ellis (1994),

evidence indicates that formal training (specifically grammar teaching) "results in increased accuracy and accelerates progress through the developmental sequence" (p. 659). One review of the research concluded, "there is considerable evidence to indicate that [second language] instruction does make a difference" (Long, 1983). However, there is some debate as to what that difference actually is. This section will consider a number of theories that have been presented to explain the role of formal instruction on second language acquisition.

There are a number of theories that have been suggested to explain the role of formal instruction on language acquisition. Some have questioned the importance of explicit instruction, favoring instead communication and comprehensible input. Krashen (1985) has been one outspoken proponent of this approach. Others have argued that formal instruction may have a negative effect on the accuracy of second language learners. For example, Lightbrown (1983) found that native French speaking learners of English in Canada overgeneralized the rules for placing the –*ing* morpheme after instruction, placing it in context where it should not be placed. The same students had used the form correctly prior to the instruction.

Another theory, suggested by Ellis (1989), says that training may have a delayed effect on the learner's acquisition. In other words, it may be that at a later time the effects of training begin to emerge within the learner. One theory that lends support to the delayed effect theory is that of consciousness raising. This theory, suggested by Rutherford and Smith (1985), says that by teaching explicit rules, learners will become consciously aware of the linguistic rules being taught, and thus at some point in the future will notice when the rules are applied by native speakers.

Thus they are not expected to be accurate immediately, but it is hoped that after a period of time they will improve through awareness of the feature (Ellis, 1994).

A study by Fotos (1993) provides some support for the theory of consciousness raising. She placed 160 Japanese learners of English into three groups. One group was given consciousness raising grammar tasks, the second group received grammar lessons, and the third group was given communicative tasks. The treatment was given for 90 minutes weekly for three months. She found that the groups exposed to grammar activities or grammar lessons showed far greater ability to notice the target features in communicative input one and two weeks after each 90 minute treatment session. However, she did not give post-tests at a later time in the future to determine long term effects of the instruction.

The input processing model, as outlined by VanPatten and Cadierno (1993), provides further support for the theory of consciousness raising. The theory of input processing says that instruction that is directed at how learners perceive and process input is more effective than instruction that focuses on the output. In their study, VanPatten and Cadierno placed 129 native English speakers learning Spanish as a foreign language in classes receiving no explicit grammar instruction, traditional grammar instruction, or input processing instruction. Those who received the input processing instruction did significantly better than those in the other groups when given a post-test following the instruction.

Schmidt (1990) also supports the theory of consciousness raising by concluding "subliminal language learning is impossible and intake is what learners

consciously notice" (p. 149). He goes on to say that the concept of "noticing" linguistic rules applies to all aspects of language, including phonology.

Another possible explanation is that instruction has an effect on planned speech but not unplanned speech. Some studies show improvement on decontextualized speech, such as tests, but far more limited effects on language produced in a more communicative context (Ellis, 1984, Ellis, 1992, and Schumann, 1978 cited in Ellis, 1994).

The distinction between planned and unplanned speech has relevance to this study because the current study is seeking to determine the effect of instruction on unplanned speech.

While many of the studies looking at the role of formal instruction have focused primarily on the effects of instruction on the acquisition of grammar, it seems logical that the same theories would also apply to the area of pronunciation.

Formal Instruction and Acquisition of Phonology

The role of pronunciation training has received very little attention in the research on formal instruction. Compared to acquisition of grammar, there are few studies on the role of formal instruction on pronunciation. The studies dealing with the role of formal instruction on pronunciation teaching are summarized in Table 2.

The studies in this section can be divided into two groups. The first group of is studies that analyze rehearsed language, or readings or mimicry of independent sentences or words. The second group is studies that attempt to analyze pronunciation in a unrehearsed setting.

Table 2: Effects of instruction on pronunciation

Study	Method	Results
Suter (1976), Purcell and Suter (1980)	The pronunciation of 61 undergraduate Arabic, Japanese, Persian and Thai learners of English were rated by NS judges. Correlations between pronunciation accuracy scores and factors such as formal training were considered.	Formal training in English, formal pronunciation training, and formal training by a native speaking teacher had no correlation with pronunciation accuracy.
de Bot and Mailfert (1982); de Bot (1983)	Adult Dutch and French learners of English were taught to perceive intonation differences to determine if teaching intonation helped to improve the production of intonation.	Teaching of intonation improved the learner's ability to imitate English intonation.
Strange and Dittman (1984)	Japanese learners were given minimal pair pre-tests and post-tests to determine if 14-18 week training sessions led to the acquisition of /r-l/.	Performance on minimal pair tasks improved gradually over 14-18 training sessions, but did not carry over to natural speech.
Schneiderman, Bourdages, and Champagne (1987)	Learners of French in a university setting were given either enhanced phonetic training or no phonetic training during the semester. They were tested for discrimination and production before and after the semester.	The treatment group improved in discrimination and production of segmental and suprasegmental features, whereas the control group did not.
del Castillo (1991)	Three groups of ITAs were given twelve weeks of pronunciation instruction, six weeks of pronunciation instruction or no instruction.	The group that received instruction showed no improvement or negative results. This was in part attributed to limited sample size.
Champagne-Muzar, Schneiderman, Bourdages (1993)	Two beginning level French as a Second language courses were placed in either a course with enhanced phonetic training or one with no phonetic training. They were tested before and after the semester.	Enhanced phonetic instruction resulted in improvement in discrimination and production ability.
Yule and Macdonald (1995)	Language samples were taken before, immediately after and two days after pronunciation training sessions given using various methods for Chinese learners of English.	Those who received lab style input showed the most improvement while those who received instruction tended to improved.
Derwing, Munro, Wiebe (1997)	Thirteen adult ESL learners read aloud a list of true and false sentences before and after a 12-week course.	They found that many of the "fossilized" learners showed improvement, though learner differences are a major factor.

Effects of Formal Training on Rehearsed Speech

First, the studies analyzing rehearsed language will be considered. de Bot (1982) and de Bot and Mailfert (1983) had beginning level learners of French imitate French sentences to look at the acquisition of intonation. They found that when they gave explicit instruction in intonation during a French course, the learners were able to do better on a post-test in which they were asked to imitate sentences in French than those that did not receive the treatment. These two studies show that the subjects' ability to imitate the feature improved, but they make no attempt to determine whether this improvement carries over into their natural production of the language.

Schneiderman, Bourdages, and Champagne (1987) found that learners of French were able to acquire much better pronunciation after a phonetic training program. Beginning and low-intermediate learners of French in a university French as a second language course from a wide range of linguistic backgrounds were given either explicit phonetic training or no phonetic training within a French course. They were given a pre-test at the beginning and a post-test at the end of the semester in which they were asked to discriminate between minimal pairs, sentence pairs based on intonation alone, and sentences based on rhythm, as well as imitate French words and sentences. The treated group in both studies improved in discrimination and production of segmental and suprasegmental features, whereas the control group did not. Champagne-Muzar, Schneiderman, Bourdages (1993) did a follow up study that yielded similar results.

Derwing, Munro and Wiebe (1997) studied thirteen adult ESL learners who had lived in the United States for an average of 10 years and were thus considered "fossilized" learners, meaning they are learners who have reached a plateau in their pronunciation improvement. They were given a list of true and false sentences to read aloud before and after a 12-week training course. The results showed that a number of the learners improved in their intelligibility, comprehensibility, and accent as a result of the training course.

These studies found some improvement in the pronunciation of the learners. This seems to demonstrate that when the learners are able to produce the sound or feature in rehearsed or controlled settings, training leads to some improvement. In these situations, the learners are able to consciously think about the sound and how to produce it accurately. Thus, the increased awareness provided by the instruction is able to assist them in producing the sound accurately. These studies seem to add support to the theory of consciousness raising discussed in the previous section, since there seems to be a change in the subjects' pronunciation as a result of becoming aware of the features that are taught.

Effects of Formal Training on Unrehearsed Speech

The question that is most relevant to the present study is whether the increase in awareness discussed above carries over into unrehearsed speech, which is what the following group of studies has considered.

One early study, by Suter (1976), found that no conclusive link could be made between the amount of formal pronunciation training and the level of pronunciation

ability. His study used native English speaking judges to rate the pronunciation accuracy of 61 non-native speakers from a variety of linguistic backgrounds. He looked at 20 variables including formal classroom training that may affect pronunciation. He found that formal training specifically dedicated to pronunciation did not have an effect on the pronunciation accuracy of speakers, nor did formal training with a native speaker of English have a significant effect. He also found that overall, formal classroom training in English actually had a negative effect on pronunciation accuracy as perceived by the judges in his study. He concluded that his findings give support to the belief "that informal exposure is more important than formal classroom training in the development of certain second language skills." Purcell and Suter (1980) reinforced Suter's original claim.

Pennington (1998) has taken issue with Suter's study, arguing that his study is flawed in three ways. First, the study looked at accuracy rather than fluency of the learner's speech. Second, she was doubtful whether human raters could give a precise assessment of the accuracy of the learners through a holistic rating without responding also to their fluency or communicative competence. She suggests that the only way to give a truly precise measure of accuracy is through mechanical means. A third criticism Pennington raised is that Suter did not assess the nature and quality of the pronunciation training.

Strange and Dittman (1984) looked at the acquisition of /r/ and /l/ among Japanese learners of English. They used minimal pairs to test the learners before and after a 14 to 18 week training course. They found that the performance on the

minimal pair tasks improved gradually over the 14-18 week period. However, they did not find any effect on the unrehearsed speech of the learners.

del Castillo (1991) looked at the role of instruction on three groups of language learners. The first received twelve weeks of pronunciation instruction, the second received six weeks of pronunciation instruction and the third was a control group which received no instruction. Her results showed no improvement or negative results for the groups which received instruction.

One study that found improvement after instruction was Yule and Macdonald (1995). They had 23 Chinese learners with relatively high proficiency in English give an oral presentation before (T1), immediately after (T2) and two days after (T3) receiving different forms of pronunciation training. The first group was called the TEACH group. They were given explicit pronunciation instruction by an instructor. The second group was the LAB group, which used audio recording in a language lab. The third group was referred to as the WHAT group because they practiced their presentation with a teacher who asked them to clarify and repeat (usually with "What?"). The last group was a control group, which received no input. They had the subjects give a short presentation about the metric system. Then the researchers isolated vocabulary words that appeared in each presentation such as *metric*, *Celsius*, and *temperature*. These were then rated by native speakers on the basis of how closely they approximated American English pronunciation. They found that those who received practice in a language lab tended to show the most improvement, while those who received teaching also showed improvement. The

control group and the "What" group tended to show little or no improvement or deterioration.

The Yule and MacDonald (1995) study looked at the subject's pronunciation in the context of unrehearsed speech while still being able to quantify their results by isolating key vocabulary words. The limitation of their study, however, is that the time involved was too short. The treatment group in the study was given only one training session, and the time between T1, T2, and T3 was only a couple of days. If they had done this same study over a period of weeks or months, their results might have been a better measure of acquisition. The most important issue is not whether learners can remember a rule temporarily, but whether they can internalize the rule and change their pronunciation to result in long lasting change. This study points to the possibility that instruction does lead to improvement in pronunciation. However, the short time period in which the study was carried out does not resolve whether the improvement will last or not.

Of the studies that looked at rehearsed and isolated language, all of the studies found some improvement after training, but for those looking at unrehearsed speech, only Yule and MacDonald (1995) found any improvement after instruction. The majority of the studies on pronunciation have looked primarily at isolated speech as a measure of pronunciation improvement, and this does not give a full picture of a learner's ability to accurately produce the target feature. It does, however, indicate that if the learners are becoming aware of their pronunciation problems, this awareness may then in time carry over into their unrehearsed speech.

The research into whether formal instruction affects phonological acquisition is limited, yet it seems to indicate that there is some advantage to explicit teaching of pronunciation. The studies reviewed give an indication that pronunciation practice and increasing students' awareness of pronunciation features leads to improvement of their ability to discriminate the features and improvement in their ability to produce the features in controlled settings. There have been few studies that have attempted to determine if teaching of pronunciation has an effect on the learner's ability to produce the features in unrehearsed speech. Those studies that have been done on unrehearsed speech, such as Yule and Macdonald (1995) have typically been limited by not looking at long term improvement.

Summary

The literature that has been discussed above on the issues of Chinese learners of English, intelligibility, the role of formal instruction on second language acquisition, and the role of pronunciation teaching on the acquisition of phonology provides important background for this study. The discussion of Chinese learners of English gives an outline of the difficulties faced by these learners, particularly the different role of pitch in Chinese and English, the lack of /θ/ in Chinese, and the differences in vowels between the two languages.

The section on intelligibility shows that there is no clear answer as to whether suprasegmentals or segmentals are the most limiting to intelligibility, though both are important and both may cause difficulties for listeners. This section also shows the complexities involved in determining which sounds and features are the most limiting

to intelligibility since there is variation between different studies, and different groups of subjects may have different pronunciation problems.

The section dealing with the role of instruction on second language acquisition outlines the theoretical issues that have been presented to explain the role of instruction on second language learning. The theory that linguistic features may be learned through consciousness raising with a delayed effect gives an important clue to the role of instruction on pronunciation acquisition, as does the theory that instruction may influence rehearsed but not unrehearsed speech.

Finally, the section dealing with the role of pronunciation teaching on the acquisition of phonology summarizes some of the studies that have looked at the role of formal instruction on pronunciation acquisition, concluding that there is evidence that instruction has an influence on rehearsed speech, but that there is little evidence of an influence on unrehearsed speech over time.

The next chapter will outline the methodology for this study, which involved 9 Chinese learners of English in an oral English skills class receiving explicit instruction on pronunciation over the course of one semester.

CHAPTER 3: METHOD

This study considers the pronunciation improvement of 9 Mandarin Chinese learners of English in a 14-week ESL class. In particular, it is hoped that this study will help to increase the understanding of the role of pronunciation instruction on the acquisition of phonology and increase the understanding of which phonological features show the most improvement over time.

Transcripts of the SPEAK test (Speaking Proficiency English Assessment Kit) taken before and after a 14 week course were analyzed to consider the use of the sounds /ai/ as in *time*, /ey/ as in *make,* and /θ/ as in *think* and the use of sentence focus. Although the data for this study is taken from a test, it is considered unrehearsed data in the sense that the subjects of the study were describing and presenting information in their own words rather than reading or mimicking the words of others.

This chapter includes 5 parts: the SPEAK test, the course, the participants, the questionnaire, and the method for analyzing the data. The first section will describe the SPEAK test used at Iowa State University, a required test for all prospective ITAs and compare this test with the SPEAK test created by the Educational Testing Service (ETS). The second section will outline the oral communication course in which the subjects for this study were enrolled. The third section will outline the nine participants of this study including their background and

SPEAK test scores. The fourth section will describe the questionnaire that was given to the nine participants. Finally, the section on the analysis of the data will be divided into two sections based on the two research questions. The first subsection will outline the selection of the language samples, describe the raters and the rating sessions, provide the percentages of agreement between the raters, and discuss the analysis of focus. The second subsection will outline the method for analyzing the role of outside practice by explaining the method for comparing the high and low practice groups and explaining the analysis of the case studies.

The SPEAK Test

The data for this study was taken from the SPEAK test, which was given both before and after the 14 week course. All international students from countries where English is not the native language who wish to become teaching assistants at Iowa State University are required to take the SPEAK test. The version of the SPEAK test is adapted from the version of the SPEAK test that was created by the Educational Testing Service (ETS) in 1996. Iowa State University uses a modified version of the ETS SPEAK test.

The version of the SPEAK test used at ISU is a live interview that takes about 20 minutes. The purpose of the test is to measure the student's proficiency in oral American English. Each test is rated by two trained raters who rate it live and holistically. A third rater will rate the taped copy if the first two raters disagree by over 30 points or if their scores are on two sides of a cut-off score. Each question on the test is rated on a scale of 0 to 3. Then all parts are averaged together,

multiplied by 100, and rounded to the nearest 10 to give a score on a 300 point scale. A score of 220 or higher allows the student to be fully certified to teach classes at the university if they also get a similar score on the TEACH[1]. The SPEAK test instruction booklet that is given to the test takers is shown in Appendix E.

The test is divided into five parts. The first part is a warm-up in which the rater engages the student in small talk to help the student to become familiar with the Questioner's voice. This section is not scored. In the second part, the student is given a map and is asked four questions about the map such as directions and information about various locations on the map. In the third part of the test, students are given a set of pictures and are asked to tell a story based on the pictures. They are instructed to begin with the words "One day last month" so that the story is told in the past tense. The fourth part of the test is three questions on various topics in which they are to give their opinions on certain topics or describe certain objects. The last part is an announcement in which they are to present information as though they are teachers speaking to a class of students in their department. They are given a sheet of paper with information about the class that they need to present.

The version of the SPEAK test created by the Educational Testing Service (ETS) on which the ISU version is based consists of a warm-up section, and 10 questions all scored equally, which are arranged into a map section, a picture story section, a free response section, and an announcement section. The instructions and interviewer questions are given through a tape recording and printed in the test

[1]The TEACH test requires test takers to give a teaching performance on a field specific topic. Trained raters are used to rate oral English proficiency.

booklet, and the raters are not present for the interview. The raters score an audio recording of the test. The scores for the ETS version of the SPEAK test are on a scale of 20 to 60 with 5 bands, where 20 represents ineffective communication and 60 represents communication that is almost always effective. The 2 raters' scores are averaged if they are not more than one band apart so that testees may receive one of nine possible scores at 5-point intervals between 20 and 60 (ETS, 1995).

There are a few differences between the original SPEAK version created by ETS and the modified version used at Iowa State. First, the scoring system is different for the two tests. The ISU version is scored on a 300 point scale in which 300 represents communication that is always effective, while the ETS version is scored on a 20-60 point scale. The ISU version also uses six scoring bands or levels rather than five. However, their scale does use the overall features of functional, sociolinguistic, discourse and linguistic competence as they are described by ETS for SPEAK and their guidelines for dealing with problem cases. Second, the version at Iowa State is a live communication situation rather than one where the candidate communicates with a tape recorder in a language lab as in the ETS version. One of the raters acts as the questioner rather than using a tape recorded voice to ask the questions. The raters do their rating with the candidate there in the test room and not from a tape after the event (though the tape will be used if there is disagreement). The test takers cannot see the questions that are asked but must rely on their listening and negotiating ability and not on written questions as in the ETS version. Also, the time allowed for responses is more flexible, with the

questioner posing the next question when the candidate has finished the current one, rather than a set amount of time allowed on the tape.

In terms of test content, the 2 tests are similar except the ISU test has 8 questions compared to 10 in the ETS SPEAK. ISU asks students to describe some object or experience, which is generally not required by ETS. On the other hand, ISU does not ask students questions connected to the picture story, nor to describe a graph. The announcement section in the ISU version is designed to be similar to an announcement that might be given by an actual TA in a classroom setting, while the ETS announcement may be any of a variety of situations (ETS, 1995).

The Course

English 180 is a required course for international teaching assistants who received low scores on the SPEAK and/or TEACH tests at ISU. There are 4 sections of English 180: A, B, C, and D. Section A, from which the subjects for this study were taken, emphasizes oral communication and pronunciation, while the other sections place more emphasis on teaching skills. Section A is for students with the lowest scores, while B is for students with middle scores, and C and D are for those with higher scores on the two tests. The participants in this study were all enrolled in English 180A but came from two separate sections. Both sections were taught by the researcher. The focus of 180A is primarily on oral communication skills with an emphasis on pronunciation with some presentation skills also emphasized. It is a 14 week course meeting three times a week for 50 minutes each session.

The text for the class was *Well Said* by Linda Grant (1993). This is an advanced pronunciation textbook designed to improve the intelligibility of non-native speakers of English. It uses a communicative approach to learning, focusing on the goal of using the features in a communicative setting. The book emphasizes suprasegmentals (word stress, rhythm, focus and intonation). The appendix of the book contains lessons and exercises for consonants and vowels. The consonant and vowel sounds considered in this study (/θ/, /ey/ and /ai/) are dealt with in the appendix. Focus is given one chapter of the ten in the book.

In the class, one class period was spent on the /θ/ sound, together with the voiced sound /ð/ as in *mother*. During this class period, the activities from the textbook were used, and other materials such as tongue twisters were added as supplemental material. The period consisted of a brief explanation by the instructor of the correct way to produce the sound, followed by a time of out loud practice as a class and a time for students to practice with partners. Review activities were done in following class periods. The tongue twisters were used in later classes to review the sound. The tongue twisters were demonstrated by the instructor then practiced out loud by the whole class and by students individually.

The vowel sounds /ai/ and /ey/ were taught in combination with other vowel sounds or were dealt with on an individual basis during one-on-one conferences. All of the vowel sounds were taught and practiced in a lesson early in the semester with explicit instruction on the correct way to pronounce each sound. The sounds /ey/ and /ai/ were included. A lesson was also given on vowel lengthening (extending the vowel sound in stressed syllables), which was taken from the textbook. In this

lesson, words with /ey/ and /ai/ were practiced along with words containing other vowel sounds. This lesson was reviewed in later class periods.

Focus received most of three class periods with instruction, practice, and review. It was taught from the unit in the book. However, this unit was taught toward the end of the semester. The activities used to practice focus included listening to and reading dialogues, correcting wrong information, and completing a chart with information provided by a partner. These activities were done in pairs or in small groups.

In addition, students met with the instructor for three 20-30 minute individual conferences throughout the semester in which ways to improve their oral communication skills were discussed, and the specific pronunciation problems of each student were practiced. Pronunciation and presentation skills were particularly emphasized in these conferences. The features chosen for this study did not receive special attention, but they were dealt with in the class and in the individual conferences when they were perceived as problems for individual students. Thus, the treatment was not consistent for all students.

The Participants

The participants in this study were nine international teaching assistants from mainland China between the ages of 22 and 35. Five were male and four were female. They were all in their first semester of graduate study in the United States, and at the start of the semester none of them had been in the United States for more than six months, most of them for no more than one month. All of them were

enrolled in a required one semester course in oral English communication. Five of the participants majored in Chemistry, two majored in Computer Science, one in Math, and one in Computer Engineering. All of the subjects took the SPEAK test both before and after the 14 week instruction of English 180 in August, 2000 (T1) and December, 2000 (T2).

Based on the scores of the SPEAK test and TEACH test, the participants in this study were all restricted either at level 3, which means they are only allowed to lead laboratory sections but not serve as teaching assistants in recitations or regular classes, or not certified meaning that their assistantship allows them to do only duties that do not require oral proficiency. Level 3 is assigned to students who receive between 170 and 220 on both the SPEAK test and the TEACH test (a test of English proficiency tested in a teaching context). Not Certified is given to students who receive below 170 on one or both of the tests. The scores of the participants ranged between 120 and 180 on the SPEAK test for August (T1) and between 150 and 230 for the December test (T2). Table 3 below shows the range of scores for both times and the number of points gained for each subject.

The Questionnaire

The nine participants in the study were given a questionnaire in order to learn more about their language learning background, their language learning study habits, and their feelings toward learning English (see Appendix A). The survey was divided into 3 parts. The first part consisted of 8 questions relating to the language learning background of the students. The second part of the survey was questions

Table 3: SPEAK scores

Subject	Aug. Speak	Dec. Speak	Gain
A	180	230	50 pts
B	150	200	50 pts
C	120	150	30 pts
D	170	210	40 pts
E	140	170	30 pts
F	160	180	20 pts
G	170	200	30 pts
H	170	200	30 pts
I	170	200	30 pts
Average	**159**	**193**	**34 pts**

about what things they did to improve their English during the semester they were in English 180. The third part was three questions about their feelings toward learning English and their thoughts regarding their own ability to use English. The data from the questionnaire was used for background information about the subjects and as a means of measuring the amount of outside practice of each subject.

Data Analysis

This section will be divided into two sections based on the two research questions in order to outline the methods for this study. The first section outlines the method for analyzing the improvement of suprasegmentals and segmentals over time by outlining the selection of the samples, describing the raters and the rating

sessions, providing the rater agreement results, and discussing the analysis of focus. The second section outlines the method for analyzing the role of outside practice by explaining the method for comparing the high and low practice groups, and explaining the analysis of the case studies.

Analysis of Comparison of Change from Time 1 to Time 2

The first research question for this study asks whether segmental features (vowels and consonants) and suprasegmental features (sentence focus) show improvement over time. To consider this question, the production of the subjects was rated for accuracy by native speakers and quantified for comparison.

The SPEAK tapes for all participants for both the August and December tests were transcribed. The warm-up section of the test was not transcribed. For the vowel section, only vowels in stressed syllables were considered since there is variation between vowels in stressed and unstressed placement.

Selection of Samples for Analysis

The map section of each test tape was used to analyze their production of the /ai/ sound at both T1 and T2. The picture story section was used to test the /ey/ sound. The free response section was used to test the /θ/ sound. This was decided based on which sections contained the most examples of each feature in general. For example, the map section had many examples of the /ai/ sound because words such as *right* and *side* were often used for giving directions. Also, in the free response section, such words as *think* and *thing* were used often in giving opinions

on various topics. Some tokens were taken from sections other than the one assigned to that feature if fewer than five examples were found in that section for a particular participant. These tokens were selected based on the number of samples of the feature in each section, and the tokens were selected from the section with the most samples.

The announcement section was used as a sample of the use of focus at T1 and T2. This was chosen because this section contains a great deal of new information and contrasts, which are important uses of focus. Since the test takers are asked to give a short presentation of a list of information about a class or a test, they must present a large amount of new information. When presenting this list of information, they demonstrate their ability to use focus on new information. Thus, in this section it is more clear where focus should be placed as compared to other sections.

Also, because in this section the students are given a sheet with information that they are to present, there is less breakdown in communication than tended to occur in the speech that did not have such an aid. In the other sections of the test, the communication often broke down, or the test takers were not able to convey the intended message clearly. Thus, when the message is not conveyed clearly, it is not possible to determine where focus should be placed. This sheet provided assistance in presenting the announcement, and thus reduced the problem of interference from the low fluency of some subjects. In the other sections, the lack of fluency tends to cause more difficulty in determining where focus is being placed.

Rating Sessions

Three native English speakers were used as raters to analyze the tapes. All three were graduate students in Teaching English as Second Language and had recently finished a course on teaching speaking and listening. Two of the raters were speakers of standard American English and the third was a native speaker of an international variety of English (Malaysian English).

Prior to the rating sessions, each sample that was to be considered in the three sections that looked at segmentals was highlighted within the transcripts. Above each selected sample, options were given the raters to choose from. For the /ai/ sound the options were [/ai/, /a/, other], for /ey/ the options were [/ey/, /ɛ/, other], and for the /θ/ sound the options were [/θ/, /s/, /t/ other]. The example below is from the map section of the test from one of the participants.

[/ai/, /a/, other], [/ai/, /a/, other],
Once you reach the Pine Street turn right.

The raters were asked to circle the sound closest to what they heard. All of the possible sounds that could be produced for a particular feature were not given as options because this study was concerned with whether the sound was accurate and not in what alternative was used.

For the analysis of focus from the announcement section, the texts were divided into separate lines with breaks placed at obvious pauses. The raters were then instructed to circle each syllable that had special emphasis. From the assessment of the raters, the placement of focus by the participants was determined

by counting any word in which two out of three of the raters perceived focus placement.

The analysis was done in two mornings. The first morning was used to do the segmental analyses (/ai/, /ey/, and /θ/). The second morning was used to do the analysis of focus from the announcement section. At the beginning of each session, a short training session was given in which the raters were given a short transcript of a SPEAK tape that was not used in the study. During these training sessions, these samples were rated and the ratings were discussed. The tapes were played on a tape recorder for all of the raters to listen to at the same time. For the focus section, the tape recorder was paused after each line to allow the raters to write. Sections were replayed as needed at the request of the raters.

Each section was analyzed separately. The transcripts were arranged in random order with both T1 and T2 transcripts placed together in random order. A different random order was used for each section of the analysis, so that the same participant was not always analyzed first, and so that the raters did not become familiar with the order and thus be influenced by a participant's activity on an earlier section.

When compiling the scores after the rating sessions, any agreement between two raters was counted. Thus, if two of the three raters found a feature accurate, it was considered as accurate, or if any two found it inaccurate it was counted as inaccurate.

Percentage of Agreement between the Raters

The agreement of the raters was calculated for the ratings of each of the features by the native speaker judges to determine if there was consistency between the scores of the three raters (referred to as R1, R2, and R3). Each feature was calculated separately, but the data from all of the subjects and the data from both T1 and T2 were combined together to give ratings for each of the features. The rater agreement results are shown in Table 4.

To calculate the rater agreement, the percentage of agreement between R1 and R2 was calculated by counting the number of times the two raters were in agreement for all of the speech samples for each of the features, /θ/, /ey/, /ai/, and focus. If both raters found a sample to be accurate or if both raters found a sample to be inaccurate, it was counted as an instance of agreement. The number of times the two raters agreed was divided by the total number of speech samples for a given feature in order to establish a percentage of agreement. The same procedure was

Table 4: Percentage of agreement for three raters

	R1 and R2	R2 and R3	R3 and R1	Three Raters
/ey/	69.9%	46.9%	53.1%	37.1%
/ai/	81.4%	82.2%	79.1%	71.3%
/θ/	80.6%	50.7%	35.8%	30.6%
Focus	55.1%	53.3%	78.1%	43.1%

done for R2 and R3 and for R3 and R1. This provided a percentage for each of the three pairs of raters for each of the four features.

The percentage of agreement for all three raters was also calculated. This was done by counting the number of times all three of the raters found a sample to be accurate or all three found a sample to be inaccurate. The number of instances of agreement for all three raters was divided by the total number of speech samples in order to establish a percentage of agreement.

Analysis of Focus

Two native speakers of American English were later asked to read the transcript of one of the subjects (Subject A) from both T1 and T2. These recordings were used to determine the correct placement of focus used by a native speaker. The focus results for the participants were then compared with the use of focus by the native speakers. The transcripts of these readings with the focus markings for each of these native speakers can be seen in Appendix D.

Several sentences from the transcript of each subject were selected, and focus was marked according to the pattern of the native speakers. Since the patterns of the announcements at T1 were all similar and the announcements at T2 were similar, sections that presented similar information at each time were selected for analysis.

The focus of the native speaker readings and the ratings of focus for the subjects were then placed onto the same transcript for comparison. A ratio was created based on the number of times the subjects placed focus in the same place

as the native speakers out of the total number of places in which the native speaker placed focus.

Finally, a Chi-square test was done for all features, /ai/, /ey/, /θ/, and focus to determine the statistical significance of the change from T1 to T2 (Hatch and Lazaraton, 1991).

Analysis of the Role of Outside Practice

The second research question asks whether the pronunciation of Chinese adult learners of English improves over the course of a semester when they are exposed to explicit instruction on pronunciation features and outside practice. First, the comparison of high and low practice groups will be outlined. This will be followed by a description of the two case studies.

Comparison of High and Low Practice Groups

To consider whether outside practice influences pronunciation accuracy, the subjects who admitted to spending less time practicing pronunciation outside of class (answers of 0-2 or 3-4 hours of pronunciation practice per week) were compared with those who said they spent more time practicing pronunciation outside of class (answers of 5-6, 7-10, or more than 10 hours of pronunciation practice per week). This was determined by question 6 on the questionnaire.

Case Studies

In order to consider the results of the study more closely and to consider whether overall language improvement is a factor in the improvement of pronunciation, two case studies were selected for further consideration. From the students who participated in this study, two students were selected, one student with high amounts of outside practice (subject A) and one with low amounts of outside practice (subject C). The level of outside practice was determined by the answers to question 6 on the questionnaire which asks how many hours per week the subjects practiced pronunciation (with possible choices of 0-2, 3-4, 5-6, 7-10, and more than 10 hours).

The next chapter will outline the results of the statistical analysis, discuss the results for vowels, consonants, and focus, consider the results of the questionnaire, compare high and low practice groups based on the amount of reported outside practice for each subject, and consider two case studies.

CHAPTER 4: RESULTS AND DISCUSSION

This chapter is divided into two sections based on the two research questions. The first section will present a comparison of the results at T1 and T2 for vowels, consonants, and focus for the 9 subjects and for those who scored below 80% accuracy at T1. The second section will present and discuss the role of outside practice (the amount of time spent practicing pronunciation outside of class by each subject) by examining the questionnaire, comparing high and low practice groups based on the amount of outside practice reported by each subject in the questionnaire, and comparing two case studies, one with high practice and one with low practice, in order to consider the results more closely.

Comparison of Change between Time 1 and Time 2

The first research question for this study asks whether segmental features (vowels and consonants) and suprasegmental features (sentence focus) show improvement over time. To consider this question, we will look at the results for vowels, consonants, and focus, comparing all of the subjects for each time first, then comparing only those who scored below 80% accuracy at T1.

The results of the Chi-square test show that there is no statistically significant change for the group as a whole between the two times (Table 5). This indicates that there was no improvement for any of the features for the subjects as a whole.

However, by considering only those subjects who scored below 80% at T1, we will see that there appears to be some improvement. Since a number of the subjects in this study scored fairly high on all or some of the sounds at T1, only those subjects who scored low deserve separate attention. Those subjects who had high scores can be said to have achieved mastery level since there is little room for them to improve. Thus, when all subjects are considered together, those subjects who have already achieved mastery level at T1 will likely skew the results since they cannot improve or can only improve slightly.

For the /ai/ sound, all but Subject I showed initial scores above the mastery level (80%). Therefore, this sound was excluded from further analysis. Since the scores were so high, little or no improvement can be made for this feature. The /ai/ sound was chosen because it was perceived as a problem for this group of students; however, it did not appear to be a problem for these students on the tests in the perception of the raters. The results for /ai/ can be seen in Appendix C.

Table 5: Chi square results for improvement of /θ/, /ai/, /ey/, and focus

	T1	T2	Chi Square
/θ/	31/56	53/78	.968
/ai/	58/64	56/66	.414
/ey/	43/60	39/53	1.215
Focus	17/199	158/194	.135

Vowels

Vowels showed no significant improvement over the course of the semester. Table 6 shows the results for the /ey/ sound. The /ey/ sound had a 72% accuracy rating at T1 and 74% accuracy at T2.

Even when considering only the low scores, as shown in Table 7, no noticeable change is observable for /ey/, with 60% at T1 and 62% at T2. Thus, there is no indication from this study that vowel production shows improvement after instruction.

Table 6: Results for the vowel sound /ey/

Subject	T1 #right/ total	% T1	T2 #right/ total	% T2
A	3/7	43%	5/6	83%
B	8/8	100%	3/4	75%
C	4/6	67%	2/4	50%
D	5/5	100%	5/5	100%
E	2/5	40%	5/9	56%
F	8/11	73%	7/15	47%
G	9/12	75%	3/4	75%
H	0/2	0%	4/4	100%
I	4/4	100%	2/2	100%
Total	**43/60**	**72%**	**39/53**	**74%**

Table 7: T1 scores below 80% for /ey/

Subject	T1 #right/ total	% T1	T2 #right/ total	% T2
A	3/7	43%	5/6	83%
C	4/6	67%	2/4	50%
E	2/5	40%	5/9	56%
F	8/11	73%	7/15	47%
G	9/12	75%	3/4	75%
H	0/2	0%	4/4	100%
Total	**26/43**	**60%**	**26/42**	**62%**

Consonants

The /θ/ sound showed no statistically significant improvement for the participants as a group. However, there was an apparent improvement based on the percentages and based on looking only at those who scored low at T1. Table 8 shows the results for /θ/ for all of the subjects. Taken together, the subjects were 55% accurate at T1 and 68% accurate at T2. Table 9 shows the scores for /θ/ for those subjects who were rated below 80% accurate at T1.

Based on the scores for only those who were below 80% accurate at T1 for /θ/, there is noticeable improvement for these subjects as a group with 38% accuracy at T1 and 66% accuracy at T2. Those beginning below 80% appeared to show improvement in the use of /θ/, but no improvement in the use of /ey/. These results suggest that perhaps the production of consonants tends to improve over time more than vowels.

Table 8: Results for the consonant sound /θ/

Subject	T1 #right/ total	% T1	T2 #right/ total	% T2
A	14/14	100%	5/5	100%
B	3/4	75%	3/8	38%
C	1/6	17%	1/4	25%
D	3/6	50%	14/16	88%
E	2/2	100%	2/3	67%
F	1/5	20%	10/14	71%
G	2/5	40%	1/7	14%
H	4/12	33%	9/10	90%
I	1/2	50%	8/11	73%
Total	**31/56**	**55%**	**53/78**	**68%**

Table 9: T1 scores below 80% for /θ/

Subject	T1 # right/total	%T1	T2 # right/total	%T2
B	3/4	75%	3/8	38%
C	1/6	17%	1/4	25%
D	3/6	50%	14/16	88%
F	1/5	20%	10/14	71%
G	2/5	40%	1/7	14%
H	4/12	33%	9/10	90%
I	1/2	50%	8/11	73%
Total	**15/40**	**38%**	**46/70**	**66%**

The apparent improvement in the production of consonants with no improvement for vowels seems logical for several reasons. First, consonants can be taught more clearly because they are produced by either completely or partially restricting the airflow in a specific place in the mouth, whereas with vowels the airflow is not restricted. The /θ/ sound is called a dental sound because it is produced by placing the tongue between the teeth. If students are taught to place their tongues between their teeth, they can consciously monitor their articulation. For vowels, however, it is not easy to feel the exact location of the jaw, tongue and lips during production except in general terms.

Second, there is variation in vowel production even between native speakers, thus making the targets less clear. British English, American English, and Australian English all have different vowel variants, and there are regional differences within these categories. Vowels also can change depending on whether they are stressed or not. There is not nearly so much variation with consonants.

Focus

The results for focus were divided into two categories. The first category will be called accurate placement. This refers to the placement of focus in the same places that a native speaker would place focus. The second category will be called overly frequent placement of focus. This refers to the placement of focus where a native speaker would not ordinarily place focus. In other words, they place focus on too many words. The results for focus indicate that there was no statistically significant change in the accurate placement of focus.

The results for focus accuracy were determined by taking a ratio of the number of times the subject placed focus where a native speaker would divided by the total number of places a native speaker would place focus as determined by readings done by native speakers. The results show no improvement from T1 to T2 as shown in Table 10. As a group, the subjects were 84% accurate at T1 and 81% accurate at T2.

Looking only at those subjects who scored below 80% at T1 for focus accuracy, there appears to be some improvement for these subjects as a group with 69% at T1 and 82% at T2. The results of focus accuracy for the subjects who scored below 80% are shown in Table 11.

Table 10: Focus accuracy results

Subject	# T1	%T1	#T2	%T2
A	19/28	68%	21/24	88%
B	23/27	85%	17/25	68%
C	22/30	73%	17/19	89%
D	26/28	93%	13/18	72%
E	16/21	76%	19/20	95%
F	16/21	76%	16/22	73%
G	25/26	96%	16/21	76%
H	20/23	87%	21/25	84%
I	23/23	100%	18/20	90%
Total	**190/227**	**84%**	**158/194**	**81%**

Table 11: T1 scores below 80% for focus accuracy

Subject	T1 #right/ total	% T1	T2 #right/ total	% T2
A	5/14	36%	14/19	73%
C	22/30	73%	21/24	88%
E	16/21	76%	19/20	95%
F	16/21	76%	16/22	73%
Total	**59/86**	**69%**	**70/85**	**82%**

Thus, there appeared to be at least some level of improvement in the focus accuracy of the subjects based on the results for those subjects whose focus scores were low at T1.

The results for overly frequent placement are shown in Table 12. Overly frequent placement represents the number of times the subjects placed focus where it should not be placed or where a native speaker would not place focus. The raw numbers show that the overly frequent placement appeared to increase from T1 to T2.

Thus, there is some evidence, based on the results for the low subjects, that the subjects improved in their ability to place focus accurately. However, there is no evidence of improvement in their ability to deaccent information that should not receive focus.

Table 12: Numbers of overly frequent placement of focus

Subject	Extra T1	Extra T2
A	9	30
B	17	14
C	15	19
D	9	12
E	6	6
F	9	9
G	9	15
H	5	12
I	5	11
Total	**75**	**98**

There are some possible explanations for this result. First, it may indicate that students have simply not acquired the full system for this feature yet. Second, the increase in fluency of the students over the semester may have increased the amount of language they were producing over the semester and thus provided more opportunities for them to misplace focus. The nature of the announcement is that there is a large amount of new information that is being presented by the students. It seems as if the less fluent students tended to give the announcement by reading the information on the sheet, while the more fluent students repeated the information, resulting in more examples of old information (information that has already been mentioned). Thus, when they use better teaching strategies, they have more opportunities to place focus on old information where it does not belong. In other words, the more fluent speakers do not necessarily use overly frequent placement of focus more often than the less fluent, they merely have more

opportunities to demonstrate their ability or lack of ability to de-emphasize old information that should not receive focus.

Consider the two following speech samples from the data:

> Class Mondays, Wednesdays, Friday; 9 to 11 o'clock. Lab—10 to 12 o-clock Thursdays. Tests. There are two tests—a midterm and a final.
>
> I have a few things about final exams information to announce. The grades of the final test will be posted on the bulletin board outside the department office, room four hundred Gaber Hall. The final test is open book exam.

Both samples are from a student who was less fluent based on the researchers perception (Subject C). The first is from T1 and the second is from T2. The first sample provides only the essential information. He does not repeat any of the information. Because old information that has been mentioned previously is no longer given focus since it no longer holds the same level of importance, there is little opportunity for this speaker to demonstrate his ability to show whether he de-emphasizes old information, because there is hardly any old information.

The second example, from the same student at T2, repeats important information and introduces the topic with appropriate cohesive strategies for conveying the message. For example, "I have a few things about final exams information to announce." This introduces the topic that he will say in the next sentence. These techniques provide more opportunities to demonstrate old information and thus provide more opportunities to fail to background or de-emphasize old information.

Another reason that the overly frequent placement of focus increased from T1 to T2 may be overgeneralization. In other words, the subjects may have become

aware of focus through instruction and are now placing focus in too many places because of the increased awareness of its importance. Perhaps through being made aware of the importance of focus through the course, they have begun to place it everywhere.

One explanation for the way these subjects are using overly frequent or inappropriate placement of focus is that they are placing focus on old information as well as new information, or they are placing focus on any stressed syllable. This suggests that they are not really distinguishing between word stress, rhythm, and focus. In other words, if the raters are hearing focus everywhere, the speaker is not actually using focus, and what the raters may be hearing is actually the rhythm that is placed on stressed syllables in all content words. Since no one syllable in a phrase is standing out as the focused syllable, the raters appear to be perceiving focus on all stressed syllables. This seems to support the findings of Juffs (1989) that Mandarin Chinese learners of English often do not distinguish between word stress and focus.

The following sample from Subject G at T2 illustrates this type of overly frequent placement of focus. The underlined syllables are places where the raters perceived focus being placed and the bold syllables are those which were determined to be appropriate places for a native speaker to place focus.

> So it's a **closed** book exam. Mm and this exam includes **two** parts. One part is **six**ty choice questions and the other part is **5** problems. If you want to have your grade **sent** to yourself you should provide a **self**-addressed **stamp**ed envelope after soon after this class

In this sample, focus is placed where it should be on all but one of the appropriate places, but it is also placed on 13 other words. These other words are all content

words (words that carry the meaning of the sentence) that should be stressed but not given focus. Thus, if the subject is perceived as placing focus on so many content words that should not be stressed, it suggests that the subject is not differentiating focus from rhythm or word stress.

Summary

We can see from the results discussed above that, while there is no evidence that any of the features showed statistically significant improvement, there are indications based on the apparent improvement of low subjects that the /θ/ sound and focus accuracy showed some improvement while /ey/ did not show improvement. They also did not improve in their ability to deaccent syllables that should not receive focus. Therefore, regarding the first research question, which asks whether segmentals and suprasegmentals improve over time, there is not conclusive evidence, but there is some indication of improvement for consonants and focus.

The Role of Outside Practice

The second research question for this study asks whether the pronunciation of Chinese adult learners of English improves over the course of a semester when they are exposed to explicit instruction on pronunciation features and outside practice. Outside practice is measured by the results of the questionnaire, which will be discussed first. Next, the question of whether outside practice of the learners plays a role in the pronunciation improvement of the learners will be considered by

dividing the subjects into low and high practice groups. Finally, two case studies, one with high amounts of practice and one with low amounts of practice, will be used to look more closely at the results.

The Questionnaire

In order to determine the appropriate measure of outside practice for the comparison of high and low practice groups below, the results of the questionnaire will be considered. The complete results of the questionnaire are shown in Appendix B. Table 13 shows the results of the questions that address the issue of improvement or lack of improvement of the subjects. The questions that measure the outside practice of the subjects are questions 6, 8, and 9-J. Question 6 asks the number of hours of pronunciation practice per week. Question 8 asks the number of times they had conversations with native speakers of American English. Question 9-J asks how often they practiced pronunciation on a scale of 1 to 5 where 1 represent rarely and 5 represents daily. The results show that Subjects C, E, F, G,

Table 13: Select results of the questionnaire

Subject	6-outside pronunciation practice (hours)	8-conversations with N/S (hours)	9-J-outside pronunciation practice*
A	10+	4-5	4
B	5-6	4-5	4
C	0-2	4-5	3
D	5-6	2-3	3
E	0-2	0-1	2
F	3-4	0-1	1
G	3-4	0-1	2
H	0-2	0-1	2
I	7-10	4-5	4

*rating from 1 to 5 where 1 represents rarely and 5 represents daily practice

and H spent the least amount of time practicing pronunciation (between 0 and 4), and the same subjects, with the exception of C, also reported spending little time speaking with Americans. Subjects E, F, G, and H also scored themselves relatively low for the question in which they were asked to rate how much they practiced pronunciation outside of class (with *5 to 6* or *over 10* hours of outside practice).

Of these three questions, question 6 seems to be the most appropriate measure of outside practice for three reasons. First, these categories seem to fit the level of outside practice observed by the instructor of the course as well. Second, the amount of explicit pronunciation practice is more important than the number of conversations with Americans for this study since pronunciation is the focus. Third, question 6 gives a more specific measure when compared to question 9-J (asking for a specific number of hours rather than a general rating).

Comparison of High and Low Practice Groups

The analysis of outside practice will be based on question 6 in Table 13. This question asks the amount of outside practice of each subject. Subjects C, E, F, G, and H constitute the low practice group (between 0 and 4 hours of outside practice), while subjects A, B, D, and I form the high practice group (between 5 and 10+ hours of practice).

The high group for the /θ/ sound, as shown in Table 14, was 81% accurate at T1 and 75% accurate at T2. The low group, as shown in Table 15, was 33% accurate at T1 and 60% accurate at T2. Thus, it appears that the low group showed

Table 14: /θ/ comparison for high practice group

Subject	T1 #right/ total	% T1	T2 #right/ total	% T2
A	14/14	100%	5/5	100%
B	3/4	75%	3/8	38%
D	3/6	50%	14/16	88%
I	1/2	50%	8/11	73%
Total	**21/26**	**81%**	**30/40**	**75%**

Table 15: /θ/ comparison for low practice group

Subject	T1 #right/ total	% T1	T2 #right/ total	% T2
C	1/6	17%	1/4	25%
E	2/2	100%	2/3	67%
F	1/5	20%	10/14	71%
G	2/5	40%	1/7	14%
H	4/12	33%	9/10	90%
Total	**10/30**	**33%**	**23/38**	**60%**

improvement while the high group did not for /θ/. However, the fact that the T1 scores for the high group were higher on average than those of the low group may influence the results, particularly for Subject A who had 100% accuracy at both times.

For the /ey/ sound, neither of the groups made any major change when taken together. The high group, as seen in Table 16 was 83% accurate at T1 and 88% accurate at T2. The low group, as seen in Table 17, was 64% accurate at T1 and 58% accurate at T2.

Table 16: /ey/ comparison for high practice group

Subject	T1 #right/ total	% T1	T2 #right/ total	% T2
A	3/7	43%	5/6	83%
B	8/8	100%	3/4	75%
D	5/5	100%	5/5	100%
I	4/4	100%	2/2	100%
Total	**20/24**	**83%**	**15/17**	**88%**

Table 17: /ey/ comparison for low practice group

Subject	T1 #right/ total	% T1	T2 #right/ total	% T2
C	4/6	67%	2/4	50%
E	2/5	40%	5/9	56%
F	8/11	73%	7/15	47%
G	9/12	75%	3/4	75%
H	0/2	0%	4/4	100%
Total	**23/36**	**64%**	**21/36**	**58%**

However, the high numbers for many of the subjects at T1 for the high group may influence the results here as well.

For focus, there was no noticeable improvement for either of the groups. The high group, as seen in Table 18, was 85% accurate at T1 and 79% accurate at T2. The low group, as seen in Table 19, was 81% accurate at T1 and 83% accurate at T2.

Table 18: Focus accuracy comparison for high practice group

Subject	T1 #right/ total	% T1	T2 #right/ total	% T2
A	19/28	68%	21/24	88%
B	23/27	85%	17/25	68%
D	26/28	93%	13/18	72%
I	23/23	100%	18/20	90%
Total	**91/106**	**85%**	**69/87**	**79%**

Table 19: Focus accuracy comparison for low practice group

Subject	T1 #right/ total	% T1	T2 #right/ total	% T2
C	22/30	73%	17/19	89%
E	16/21	76%	19/20	95%
F	16/21	76%	16/22	73%
G	25/26	96%	16/21	76%
H	20/23	87%	21/25	84%
Total	**99/121**	**81%**	**89/107**	**83%**

It can be seen from these comparisons that there can be no conclusion for any of the features considered in this study as to whether practice affects the accuracy of pronunciation. This may be largely due to the fact that those in the high group had already attained a higher level of accuracy at T1, many having attained mastery level at T1, while those in the low group had more room for improvement.

Although there was no clear difference between the pronunciation accuracy improvement between the high and low groups, there appears to be an improvement in language proficiency as measured by the scores on the SPEAK test. The

numbers of improvement on the SPEAK test do not necessarily correlate to the amount of improvement since it is generally more difficult to improve on a high score than to improve a low score. However, the numbers do give an indication of the improvement of the subjects.

Table 20 below shows the SPEAK scores for the high practice group. This group had an average score of 168 at T1 and 210 at T2 with an average improvement of 42 points. Table 21 shows that the low practice group had an average score of 152 at T1 and 180 at T2 with a 28 point improvement. Despite the general tendency to show less improvement with higher scores, the high group started from a higher average score at T1 and showed a higher average gain than the low group. Therefore, there is some suggestion that higher amounts of practice correlates with increased proficiency.

Table 20: SPEAK scores for high practice group

Subject	Aug. Speak	Dec. Speak	Gain
A	180	230	50 points
B	150	200	50 points
D	170	210	40 points
I	170	200	30 points
Average	**168**	**210**	**42 points**

Table 21: SPEAK scores for low practice group

Subject	Aug. Speak	Dec. Speak	Gain
C	120	150	30 points
E	140	170	30 points
F	160	180	20 points
G	170	200	30 points
H	170	200	30 points
Average	**152**	**180**	**28 points**

Case Studies

In order to consider more closely the role of outside practice and whether overall language improvement is a factor in the improvement of pronunciation, two students were selected, one with high amounts of outside practice and one with low amounts of outside practice to consider more closely. These two examples will be used to consider the role of language improvement and to look more closely at the results of this study.

Subject A was selected as the high subject, and Subject C as the low subject. These were selected because they appeared to be representative examples of the high and low practice groups respectively. Based on their response to the question about the number of hours of pronunciation practice in question 6 in Table 13 above, Subject A had the highest number of hours of practice per week of all the subjects with 10+ hours of practice. Subject C had the fewest possible number of hours of practice (0-2 hours) and was thus chosen as the low subject.

The scores of the two subjects for the SPEAK Test are shown in Table 22. It can be seen that Subject A, the subject with greater amounts of practice, passed the test at T2 (scores of 220 or higher are passing scores). This subject started with a higher score and made great improvement.

Table 22: SPEAK scores for two subjects

Subject	Aug. Speak	Dec. Speak	Gain
A (high)	180	230	50 points
C (low)	120	150	30 points

However, Subject C had very low scores at both times with slight improvement from T1 to T2. The gain for Subject C may mean little since it is easier to show improvement at such a low level. The fact that this subject stayed at a non-passing score at T2 is more important.

Thus, Subject A showed more improvement than Subject C despite starting from a higher score at T1. Subject A was successful in passing the test, while the scores of Subject C remained quite low. This adds support to the suggestion made in the previous section that outside practice appears to influence the language proficiency of learners.

Tables 23, and 24 show the results for /θ/ and /ey/ respectively for these two subjects. For focus accuracy, the two had similar scores at both times, both showing only slight improvement, so it will not be discussed in further detail. It can be seen that Subject A had high scores at T2 for both /ey/ and /θ/. Subject A was

Table 23: /θ/ results for two subjects

/θ/	Number	T1/θ/	Number	T2/θ/
A (high)	14/14	100%	5/5	100%
C (low)	1/6	17%	1/4	25%

Table 24: /ey/ results for two subjects

/ey/	Number	T1/ey/	Number	T2/ey/
A (high)	3/7	43%	5/6	83%
C (low)	4/6	67%	2/4	50%

the only subject to receive perfect scores at both T1 and T2 for the /θ/ sound. This subject also showed more improvement on the /ey/ sound with scores of 43% at T1 and 83% at T2. Subject C did poorly at both times for /θ/ with 17% at T1 and 25% at T2 and a decrease for /ey/ with 67% at T1 and 50% at T2.

Thus, Subject A had a perfect score for /θ/ while Subject C did poorly both times, and Subject A showed improvement with /ey/ while Subject C showed no improvement. Subject C had poor accuracy at both times.

From the two case studies, it can be seen that the high subject seemed to show the most language improvement as demonstrated by the SPEAK scores. She also showed more accurate use of /θ/ and more improvement for /ey/.

The following chapter will summarize the primary findings of this study, discuss the limitations of the study and offer suggestions for future research.

CHAPTER 5: CONCLUSION

The original questions that were considered for this study were, 1) Do segmental features (vowels and consonants) and suprasegmentals (sentence focus) show improvement over time?, and 2) Does pronunciation for Chinese adult learners of English improve over the course of a semester when they are exposed to explicit instruction on pronunciation features and outside practice? Only a tentative answer can be given to both questions.

In regard to the first question, whether segmental features (vowels and consonants) and suprasegmentals (sentence focus) show improvement over time, none of the features showed significant improvement for the subjects as a whole. However, there was apparent improvement in the /θ/ sound for those subjects with low scores at T1, while there was not improvement for the /ey/ sound. There also appeared to be some improvement for focus accuracy for those with low scores at T1. This suggests that there may be more improvement for consonants and focus, making consonants and focus more teachable than vowels. However, no solid conclusions can be drawn due to the lack of statistical significance.

For the second question, whether instruction and outside practice influence pronunciation improvement, there can be no conclusion drawn in regard to instruction and evidence of only limited improvement resulting from outside practice.

For the issue of whether outside practice is beneficial to the improvement of pronunciation features, there is little evidence of higher amounts of pronunciation accuracy improvement for those subjects who spent more time practicing pronunciation, though the case studies provide some evidence that the higher student showed improvement for /ey/ and higher accuracy at both times for /θ/ than the lower subject. There is some indication that those subjects who spent more time practicing showed more improvement on the SPEAK test, suggesting an improvement in language proficiency. The case studies also offer support for this since the high practice subject also showed more improvement on the SPEAK test than the low subject.

For the issue of whether instruction influences pronunciation improvement, no correlation can be made because there was not control group receiving no instructional treatment. It is unclear whether the subjects involved would have shown more or less improvement without the instruction. Because the subjects were all new to the United States at the beginning of the semester, it may be that they would have improved their oral English skills simply by being in an English speaking country and being exposed to English. Thus, the pronunciation of those who showed improvement might have improved even without having been given explicit pronunciation instruction.

Limitations of this Study

This study was limited to only 9 subjects, and with such a limited size, the results should be taken as indications and support rather than solid conclusions.

The limited sample size may partially explain why the statistical results did not show any significance for any of the features.

The lack of higher percentages of agreement between the raters reflects some problems with the rating of the features. There was some confusion by the raters as to where to draw the line between accurate and inaccurate production of the features. This was particularly a problem with the vowel sounds. It was often unclear whether to consider particular features as accurate or not, and the lack higher percentages of agreement suggests that different raters had different standards. More specific and extensive training of the raters may help this.

It may be significant that the instructional treatment was not consistent for all subjects. Although they all received the same training within class time, they received individualized pronunciation instruction during the three individual conferences. Thus, those students for whom problems were perceived on a particular feature received special attention for that feature during the individual conferences. These students were also encouraged to work on these problems during their own free time. The features considered in this study were discussed as an element of the course and in some of the conferences, but were not emphasized specially for the purpose of the study. Perhaps if the features considered in this study had received more emphasis in the course, the improvement of the subjects might have been greater.

The results of the questionnaire are somewhat uncertain because it is quite possible that some of the subjects exaggerated the frequency of time they spent

practicing English, especially since the researcher was also the instructor of the class.

Also, the result that /θ/ and focus appeared to improve for subjects who were low at T1 does not necessarily mean that all consonants would improve, nor is it clear whether /θ/ and /ey/ are representative of all consonants and vowels respectively or that focus can represent all suprasegmental features.

There were some limitations in the focus section of this study. The announcement sheet that was provided for this section at T1 and at T2 were different. All test takers at T1 had a test with an announcement with similar structure, and all those at T2 had an announcement with similar structure, but the structures were different between T1 and T2.

Recommendations for Future Research

There are a number of questions still needing to be considered in this area. First, there is still little known about the acquisition of pronunciation over long periods of time. Longitudinal studies which are carefully controlled should be done to see if there is improvement in pronunciation over a long period of time. Especially longitudinal studies looking at the acquisition of pronunciation features on unrehearsed speech are needed.

Future studies on the effects of teaching pronunciation should organize the study in such a way that high initial scores are excluded. In this study, it was felt that the subjects as a group had difficulty with these features, but not all of the subjects

individually evidenced the problems on the test. Thus, high scores at T1 skewed the results since these subjects cannot improve. One way to avoid this problem would be to give detailed diagnostics and only include subjects who have a problem with a given feature, or do case studies looking at different features for each subject based on the specific problems of each subject.

Another suggestion for future studies would be to use more exact methods of measuring the accuracy of the production of target features. A computer method for analyzing focus, such as Visipitch[1], would increase the accuracy of the measurement. This would eliminate the problem of low rater agreement for focus, though it may be more difficult to account for acceptable variations with such methods. In other words, computer methods cannot determine whether a variation from the target is an acceptable or unacceptable variation. Controlling the speech production by using rehearsed speech, such as reading, would make it easier to quantify such measures, though it would change the focus of the study.

Another possible follow-up study to this would be to do a similar study in which levels of fluency are measured and correlated with pronunciation accuracy. This could be done using experienced raters. It is possible that the level of fluency of the students will have an influence on the improvement of pronunciation for unrehearsed speech. It may be that students who have difficulty forming grammatically correct sentences when speaking in unrehearsed situations will not be ready to work on such features as pronunciation because they are focusing their

[1] Visipitch is a speech analysis instrument available from Kay Elemetrics (www.kayelemetrics.com).

attention on more important issues of communication, such as grammar and vocabulary.

Another alternative would be to use subjects who have been in an English speaking country for a longer period of time. Such students may have more difficulties in improving their pronunciation due to the theory that learners become fossilized when they reach a certain level of fluency, meaning that despite high levels of fluency, the learners remain inaccurate in their production and show little or no improvement over time (Acton, 1984).

Another issue that deserves further research is which types of pronunciation teaching methods are most effective to encourage acquisition of phonology. Comparisons of groups receiving different types of instruction with a control group receiving no instruction may reveal varying degrees of effectiveness of different types of instruction.

The biggest problem with doing studies of phonology is that it is difficult to control all the variables. There is not a simple way to quantify the accuracy of pronunciation without either using completely decontextualized speech such as minimal pairs, which does not test the learners ability to use correct pronunciation in unrehearsed speech, or using generalized ratings of speech by native speakers, which brings an element of subjectivity into the study. This is an issue that needs be dealt with in future research.

APPENDIX A
Questionnaire

Name:_____ **Age:** _____

1. Which province in China are you from originally? _____

2. When did you arrive in the United States? _____/_____
Month/Year

3. Which English speaking countries have you visited before coming to study at ISU? Please tell me when and where and for how long.

Put an X in the appropriate box:

4. For how many years have you studied English formally?
1-4 ____ 5-8 ____ 9-12 _____ 13+ _____

5. Have you had a pronunciation course in the past besides English 180?
Yes___ No____

6. During the Fall 2000 semester, how many hours per week did you speak English and practice pronunciation outside of English 180?
0-2 ____ 3-4 ____ 5-6 ____ 7-10 ____ more than 10 ____

7. Do you live with native speakers of English or with other speakers of your first language?
____ Native speakers of English ____ Both
____ Native speakers of your language ____ Other

8. Last semester, how many times per week did you have conversations with American students?
0-1 ____ 2-3 ____
4-5 ____ 6-7 ____
8 or more times per week ____

9. During Fall 2000, when you were in Engl. 180, how often did you do any of the following outside of class to help you practice English:
Circle the appropriate number (if sending by e-mail, put an X by the number):

	1 = rarely		**3 = sometimes**		**5= everyday**
Use tapes to practice English	1	2	3	4	5
Watch TV or movies in English	1	2	3	4	5
Listen to the radio in English	1	2	3	4	5
Read newspapers /magazines	1	2	3	4	5
Read textbooks	1	2	3	4	5
Practice keywords	1	2	3	4	5
Speak English casually with friends	1	2	3	4	5
Ask questions in class	1	2	3	4	5
Participate in class discussions	1	2	3	4	5
Consciously practice your pronunciation outside of class	1	2	3	4	5

10. Other Questions
Circle the appropriate response (if sending by e-mail put an X by the answer):

Do you like learning English?	yes	sometimes	no
Do you consider yourself to be a good language learner?	yes	sometimes	no
Do you feel confident in your ability to communicate in English?	yes	sometimes	no

APPENDIX B
Results of Questionnaire

Subject	Age	1- Province from	2- Arrival date	3- Other English spk countries	4-years studied English	5-past pronun-ciation.
A	26	Hubei	Feb-00	none	13+	N
B	26	Fujian	Jul-00	none	9-12	N
C	35	Sichuan	Aug-00	none	13+	Y
D	27	Henan	Aug-00	none	9-12	N
E	27	zhejiang	Aug-00	none	9-12	N
F	28	Shandong	Jul-00	none	9-12	Y
G	22	Jiang xi	Jul-00	none	5-8	N
H	25	zhejiang	Aug-00	none	9-12	X
I	27	Sichuan	Aug-00	none	9-12	N

Subject	6-prac-tice pron	7-live w NS	8-convs w Am	9-A tapes	B tv/ movies	C radio	D news/ mag	E text-book	F key-words
A	10+	NSC	4-5	3	4	2	2	3	5
B	5-6	NSC	4-5	2	4	2	2	3	4
C	0-2	NSC	4-5	3	5	1	3	5	3
D	5-6	OTH	2-3	3	3	4	5	5	3
E	0-2	OTH	0-1	1	1	2	3	4	2
F	3-4	NSC	0-1	1	3	3	4	3	1
G	3-4	NSC	0-1	1	4	1	2	3	1
H	0-2	NSC	0-1	1	2	X	3	5	2
I	7-10	NSC	4-5	1	4	1	2	3	3

Subject	G friends	H ask qs	I class disc.	J outside prac	10 like Eng.	11 good learner	12 con-fident
A	4	4	5	4	Y	S	S
B	5	3	3	4	Y	N	S
C	4	4	4	3	Y	S	S
D	3	3	3	3	Y	Y	Y
E	2	2	2	2	Y	N	N
F	2	1	3	1	Y	S	Y
G	2	2	2	2	Y	N	N
H	2	3	3	2	Y	S	N
I	1	2	3	4	Y	S	S

APPENDIX C
Results for the vowel /ai/

subject	T1 #right/ total	% T1	T2 #right/ total	% T2
A	5/5	100%	6/7	86%
B	4/5	80%	6/6	100%
C	7/7	100%	5/6	83%
D	9/9	100%	3/6	50%
E	6/6	100%	4/6	67%
F	4/5	80%	10/10	100%
G	3/3	100%	6/8	75%
H	16/16	100%	8/8	100%
I	3/7	43%	7/9	78%
Total	**58/64**	**91%**	**56/66**	**85%**

APPENDIX D

Focus of native speaker readings of transcript for Subject A

gray= sections counted in the study.

italics= focus of reader A

underline= focus of reader B

bold= determined placement of native speaker focus

Subject A T1

Good ***morn***ing everyone ah can I please make—pay at***tent***ion please. I have something im***port***ant about the class ***sche***dule for this se***mes***ter. The class will be given on ***Mon***day ***Wed***nesday ***Fri***day from ***8*** to ***9*** am o'*clock*. The lab section will be given *Tue*sday from *10* to ***12***. About the ***test*** we have ***two*** tests a ***mid***dle term test and a ***fin***al test. And we have also ***5*** *quiz*, approximately every ***2*** weeks we have a ***quiz***, but ***not*** in the *test* weeks. And all quiz will be given on ***Mon***days. We will use the ***plus*** and ***min***us grades to give you the test re***sult***. The *tests* will occupy ***fif***ty percent and the ***quizz***es will account ***thir***ty percent. The ***home***work will be account ***twe***nty percent. **Fin**ally I want to tell you my ***offi***ce *hours*. My office hours are ***Mon***days and ***Tues***days from ***2*** to ***3*** pm in physical- ***phy***sics twenty ***five*** or by appointment.

Subject A T2

May I have your at***tent***ion please. I have some important infor***mat***ion about the final ex***am*** for *chem*istry one seventy ***eight***, ***gen***eral chemistry. This test is a ***close***d

book test, so the exam will cover the chapters in the ***book*** on electro***chem***istry, tran***sit***ion *met*als, co***ord***inate compounds and ***poli***mers and bio***log***ical molecules. So ***first*** of all I want to *tell* you the ***time*** for this test. So you should be pay at***tent***ion to this. The **test** will be given on December four***teenth***, ***Mon***day and the time is from ***se***ven o'clock to ***nine*** o'clock in the ***eve***ning, so please pay at***tent***ion to that, in the ***eve***ning. OK So the exam lo***cat***ion is gilman ***hall*** eleven four***teen***—gilman ***hall*** eleven four***teen***. And uh the **test** will includes- include ***2*** parts. There are ***six***ty multiple choice *que*stions and ***5*** problems. So for this ***5*** problems you just need to choose ***three***. O***K***? Another thing I want to *tell* you is that the **grades** of the test will be **post**ed on the **bull**etin board outside the **gen**eral chemistry ***off***ice. The general chemistry office is in gilman ***hall*** the room number is six**teen** oh ***eight***. So finally I want to *tell* you that if you want to have your grade ***sent*** to you, you should provide a ***self*** addressed ***stamp***ed envelope. OK so ***that's*** all, if you have any ***ques***tions please ***ask*** me.

APPENDIX E
SPEAK Test Sample Question

This test guide was compiled by the English Proficiency Evaluation Committee (EPEC) to aid new graduate students preparing to take SPEAK, the English speaking proficiency test. SPEAK is produced by the TOEFL program of the Educational Testing Service. Iowa State University has modified SPEAK to screen prospective teaching assistants whose native language is not English.

This 20-minute test of spoken English is not intended to be the sole indicator of potential success in teaching. English proficiency is only one of many qualities necessary for successful performance in the classroom or laboratory. Others include command of the subject material, interpersonal skills, and interest in teaching.

It is hoped, however, that this test will provide a useful gauge of one important element—speaking ability. It will help departments make decisions about the duties assigned to teaching assistants and also indicate which students need to attend a class or receive additional help with speaking and pronunciation before they may be considered for a classroom assignment.

GENERAL INFORMATION

What is SPEAK?

The purpose of the SPEAK test is to determine the spoken English proficiency of people whose native language is not English. The test takes the form of a structured interview and is given in one 20 minute session. (See pages 3-7 for descriptions and practice questions for each part.) For some parts of the test, including the directions for each section, you will look at material that is printed in a test notebook; The interviewer, who will be seated across from you at a table, reads the directions and questions for the entire test (as well as rating your performance). A rater or raters will also be present but will not ask questions. All of your answers to the test questions will be recorded on audiotape. You will not be required to write anything.

Procedures on Testing Day

SPEAK is given on the date and at the time and place written on the front of this booklet. Arrive on time. If you do not report for the test promptly at the time assigned during registration, you may miss your turn and have to re-schedule SPEAK at a later time (sometimes as much as four months later), which might interfere with your plans for an assistantship.

You will be asked to present a form of photo identification such as your passport, an ISU student identification card, an Iowa driver's license, a resident alien card, etc.

You may not take paper, pens or pencils, dictionaries or personal recording or photographic devices into the interviewing room. In addition, chewing gum, food, and smoking materials are not allowed. No disturbing noises will be permitted while the test is being given; you should not wear any loose bracelets, necklaces, or other "noisy" jewelry.

Testing Violations

The interviewer or rater(s) will report any suspicious behavior to the SPEAK/TEACH Office. Scores will be invalid and will not be reported for anyone who commits any of the following violations:

1. Takes a test notebook or test tape from the interview room (all test materials are the property of ISU);
2. Attempts to take the test for someone else;
3. Gives or receives assistance during the test:
4. Takes dictionaries or other books, paper, pens or pencils, notes, or personal recording or photographic devices into the interview room;
5. Copies or records any test materials;
6. Fails to follow instructions given by the test interviewer or rater;
7. Cheats in any other way.

TAKING THE TEST

SPEAK is designed to measure a person's proficiency in spoken American English. Since spoken language proficiency can only be achieved after a relatively long period of study and much practice, an attempt to study English for the first time shortly before taking the test will not be very helpful. However, you might benefit from studying the directions and practicing the questions that follow. Also, getting into an American English speaking and thinking frame-of-mind before taking your test should be beneficial. Of course, the more you practice spoken English, the more proficient you will become.

First, your photo ID will be checked and then you will be asked to enter the test room. After you sit down you will be given a test notebook. Section one, the warm-up section which is not scored, will begin right away, and then the interviewer will read the general test directions. Each section of the test also has special instructions which are printed in the test notebook. These instructions are the same as those on the following pages. It is an advantage to become familiar with the instructions before you take the test. It will save time and you will be able to concentrate on your responses since you can anticipate what the instructions will be.

During the actual test, listen carefully to the interviewer, who will ask you various questions. When you answer the questions, you will speak to the interviewer and into a table microphone, so your answers will be recorded on audiotape. Try to relax and talk freely. You will not get any credit for keeping silent. The test directions are printed in the test notebook, but not the questions themselves. If you don't understand a question, you can ask the interviewer to repeat it or explain it, but since the rater(s) and interviewer are also attending to your listening ability, it is not a good idea to ask for repetition when you do not need it. If you have a tape recorder, it might help to practice answering the sample questions on tape and listening to how you sound.

Generally, the SPEAK test moves at your speed. Each section lasts as long as necessary for you to answer as well as you can. Speak in a clear and natural tone of voice, but speak loudly enough for the raters and the machine to capture what you say. Both the rater(s) and interviewer will rate your responses. If the raters do not agree or if they want to review your answers, the tape will be important.

SAMPLE QUESTIONS

The following instructions for each test section are the same as those you will find in the test, and the sample questions are similar to the test questions. To get the most benefit from these sample questions, try to answer them just as you would during the actual test.

Section One: WARM UP

As soon as the equipment is recording, the interviewer will engage in informal conversation with you. You may be asked some questions such as these:

How long have you been in the United States?
What are you majoring in?
What are you planning to do this weekend?

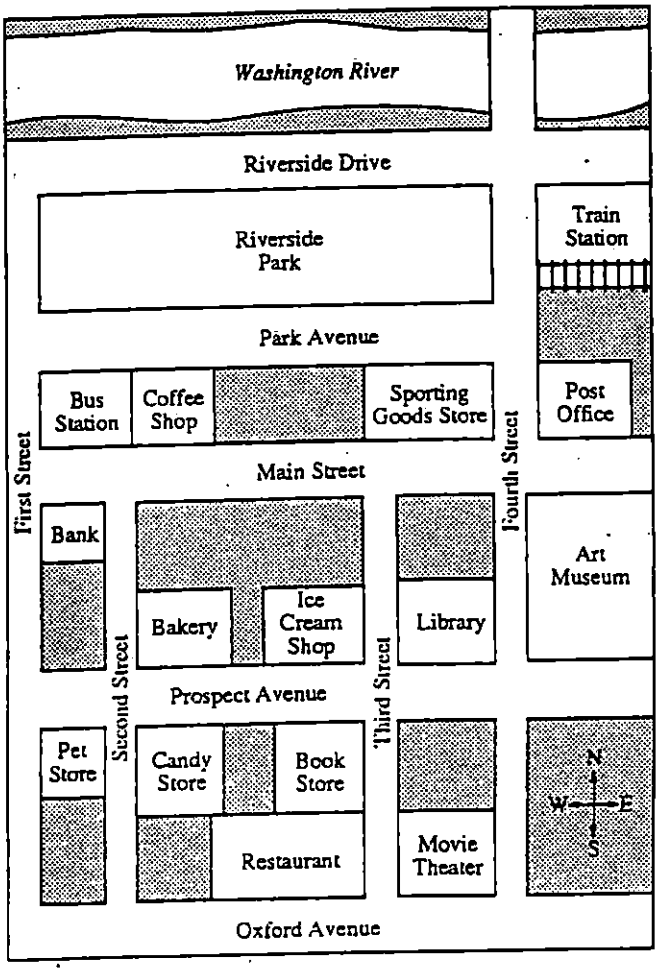
This section of the test is intended to put you at ease and let you get accustomed to the interviewer's voice. It will not be rated.

Section Two: MAP

In this section you are to look at a map and answer four questions related to it. Imagine that we are colleagues. This map is of a neighboring town that you know well and have suggested I visit. You will have about 30 seconds to study the map, and then I will ask you some questions about the town.

(In the actual test, the questions will not be printed in the test book. They will only be asked verbally by the interviewer. The questions will involve locations of places and directions to go from one place to another, as well as your opinions or suggestions on related topics. The following are examples of the kinds of questions that might be asked. Try to practice giving specific answers. The times in parentheses are the expected amounts of time for your answers. A very specific question such as #1 needs only a brief answer, whereas a 2-part and broader question such as #4 needs a longer and fuller answer. Of course, the exact length of your answer is not important compared to the effectiveness of your response and how easily the raters can understand it. If you don't understand the question, you can ask the interviewer to repeat it or to explain a specific word or expression.)

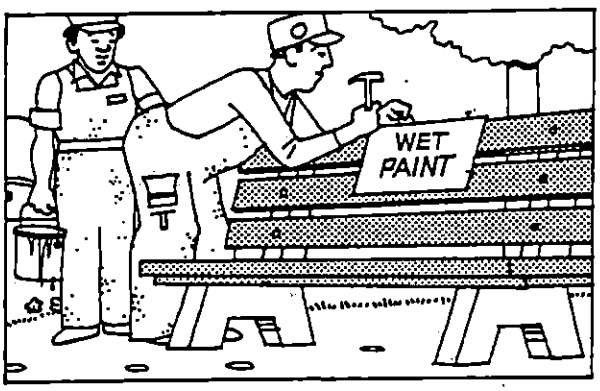
1. Where is the town in relation to the river? (10 secs)
2. Choose one place on the map that you think I should visit and give me some reasons why you recommend this place (30 secs)
3. I'd like to see a movie. Please give me directions from the bus station to the movie theater. (30 secs)
4. One of your favorite movies is playing at the theater. Please tell me about the movie and why you like it. (60 secs)



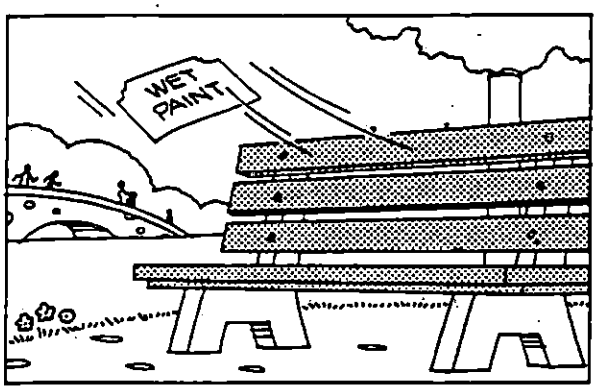
Section Three: PICTURE SEQUENCE

The series of pictures tell a continuous story about what happened one day last month. We want you to tell the story that the pictures show in about one minute. First, you will have one minute to study the pictures silently. Signal when you are ready to tell the story.

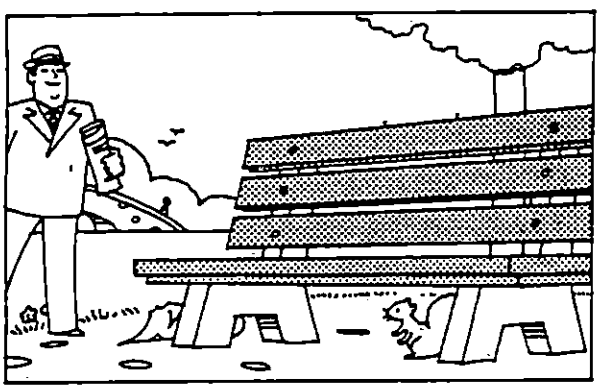
(During the actual test you will be told to begin your story with the words "One day last month..." in order to assess your ability to narrate in the past tense. Consider giving names to the characters in your story to avoid mixing up the third person pronouns, he/him and she/her.)



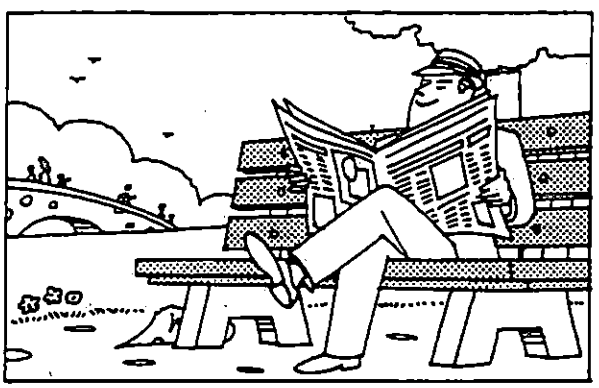
1



2



3



4

5

6

Section Four: FREE RESPONSE QUESTIONS

In this section you are asked three questions about your opinion on certain topics, and how you would describe certain experiences or objects. You will be given 20 seconds to think about your response before you speak. Try to say as much as you can in about 30-60 seconds for each answer.

(In the actual test, the questions will not be printed in the test book. They will only be asked verbally by the interviewer. Try to say as much as you can even if you are uncertain of the vocabulary or don't think you can express your opinions very well. For example, even if you don't know the names for the parts of a telephone, you can talk about how a telephone can be used, where telephones are located, etc. If you don't understand a question, you can ask the interviewer to repeat it or explain it. The following are examples of the kinds of questions which could be asked.)

1. Describe the things that make a perfect day.
2. Describe a telephone in as much detail as possible.
3. What is your opinion of the problem of air pollution caused by automobiles?

Section Five: CLASS ANNOUNCEMENT

In this section you are asked to imagine that you are a teacher in your department, and at the beginning of class, you need to announce the information on the sheet the interviewer will hand you. First, you will be given one minute to plan your announcement. In your presentation, do not just read the information, but present it as if you were talking to a class of students. (expected length 90 seconds)

(Decide in what order to present the information and which points to emphasize, and look over any vocabulary that may be difficult to pronounce. Try to take on the persona of a teacher making an announcement to his/her class of undergraduates)

A sample announcement similar to the class announcement on the test:

Class Schedule for Creative Writing 201

HOLIDAYS: Labor Day, September 7 (Monday); Columbus Day, October 12 (Monday); Veterans Day, November 11 (Wednesday); and Thanksgiving, November 26 (Thursday)

WRITERS' WORKSHOP: Thursday, August 24 and Friday, August 25
Little Hall, Room 102
2:30-4:30 p.m.

CLASS LECTURES: Tuesdays, Thursdays, and Fridays
Peabody Hall, Room 275
8-9 a.m.

TERM PAPER: Outline due Friday, September 21
Final form due Monday, December 5

TEXTBOOKS: *Creative Writing in a Modern Society*, J. Boyle
Writing and Logic, C. Kutch
Composition Techniques, P. Kraska

End of test.

How SPEAK is scored

Your answers will be independently scored by the rater(s) and interviewer; i.e., one person will not know the scores assigned by the other(s). On each question in sections 2-5, the raters give a score between 0 and 3 for the overall effectiveness and comprehensibility of the response taking into account factors such as pronunciation, fluency, grammar, vocabulary, appropriateness, listening ability, and manner of speaking. The individual scores are then averaged and multiplied by 100 to give final scores between 0 and 300. The raters will be persons well qualified in the field of teaching English as a second language, linguistics, communications, or education. If two raters do not agree within 30 points of each other or across cut-off scores, a third scorer will rate the answer tape.

Scores and results

The SPEAK test is designed for internal use at Iowa State University and will not be considered as proof of speaking proficiency at other institutions. SPEAK and TEACH test results will be reported to you, to your major department, and to any other department that is considering you for a teaching assistantship. SPEAK and TEACH scores are combined to give test results as one of 4 possible levels of oral proficiency in American English. Academic departments assign TA duties on the basis of these 4 levels of oral English. An explanation of the 4 levels will be enclosed with your test results, or may be seen on our web page or in our office. Addresses are at the foot of this page.

SPEAK and TEACH scores will not be used as the sole indicators in making decisions about teaching assistantships. Other important factors in making appointments and setting stipend levels are made by each hiring department and/or the university administration. If you have questions or comments about any aspects of the SPEAK/TEACH Program, please contact the English Proficiency Evaluation Committee (EPEC), Graduate College, 207 Beardshear Hall (294-4531).

The Graduate College SPEAK/TEACH Program
201 Lab of Mechanics
http://www.grad-college.iastate.edu/speakteach
(515)-294-1958; (515)-294-8627 (Fax)
itas@iastate.edu

(revised 7/99)

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