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**AN EXPLORATION OF L2 LISTENING
PROBLEMS AND THEIR CAUSES**

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**Thesis submitted to the University of
Nottingham for the degree of Doctor of
Philosophy**

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ABSTRACT

Listening has long been recognised as the most challenging skill for teachers, students and researchers working in the context of L2 English. However, it has also been the least researched of the four language skills, and one that has received the least attention in second language acquisition.

This study identified the listening problems, and their causes, experienced by Chinese university students at intermediate level through multiple perspectives. Included in the investigation were learners' perceptions, their performance in phonological vocabulary tests and their recognition of words from dictation transcription in terms of lexical processing and spoken word recognition, in addition to learners' self-reflection and the teacher's reflection after one-semester of instruction and learning. The ultimate aims of the study were to contribute to our understanding of the nature of listening comprehension and the causes of the difficulties it poses for these learners in order to advance a research-based pedagogy to help them improve their listening comprehension skills. A mixed methods approach was employed, integrating questionnaire surveys, participants' self-reflections, the Aural-Lex tests, and dictation transcriptions conducted both at the very beginning and at the end of the semester.

Findings suggest that the main difficulties and the causes of these difficulties in listening comprehension for Chinese university students at intermediate level include the following: limited knowledge of phonology, inadequate vocabulary by sound, and poor awareness of the features of connected speech. The study suggests that Chinese university students at this level need to improve their spoken word recognition and develop an awareness of the organisation of sounds in English connected speech, as these cognitive processes play a vital role in proficient listening comprehension. Similarly, it proposes that researchers and teachers working in higher education in the L2 context should work closely together to address intermediate learners' needs and difficulties, both theoretically and practically, in order to help them enhance their listening comprehension skills.

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LIST OF ABBREVIATIONS

AuralLex	The Aural Lexical Test
BNC	British National Corpus
CET 4	College English Test Band 4
K1	1000 frequency band
K2	2000 frequency band
LC	Listening comprehension
LP	Listening problems
L2	English as a second language
SLA	Second Language Acquisition
SWR	Spoken word recognition
TE	Teaching English
TL	Teaching Listening

KEY TERMS

Linguistic features

Assimilation: Adjusting a speech sound to make it easier to move from one articulatory position to another. In English, the final sound of a word might be changed to anticipate the sound at the beginning of the next word.

Base word: This is a complete word to which you can add parts to make other words, for example, the word pay is the base word in repayment.

Bound morphemes: Include un, s, ed, able, anti and ism.

Bottom-up: describes a process that builds smaller units into larger ones (syllables into words and words into phrases).

Citation form: The way we say a word on its own.

Catenation: Also called liaison; the last consonant of the first word is joined to the vowel starting the second word, e.g. 'get out' >'ge-tout'.

Chunks: Small groups of words that commonly occur together.

Construct validity (or construct-referenced validity): The extent to which a test actually measures what it claims to be assessing.

Content words: Words which contribute to the lexical meaning of an utterance; usually stressed (nouns, verbs, adjectives, and adverbs of time, manner, and place).

Co-text: The words that a speaker has used so far, which help to create a discourse representation in the mind of the listener.

Decoding: Analysing the sounds in the speech stream with a view to matching them to words, phrases, and sentences.

Discourse representation: The listener's interpretation of what has been said so far.

Elision – Process in CS by which a consonant sound is left out in order to make articulation easier.

Fluent listening: Sustained and understanding connected speech in a natural way.

Formulaic chunks: Small groups of words that commonly occur together and are likely to be stored in the mind as a unit.

Frequency: How often a word occurs in speech.

Function words: Words which contribute to the grammatical meaning of an utterance but have little meaning in themselves, e.g. pronouns, articles, prepositions; usually unstressed.

Homophones: Words that sound the same but are spelled differently (e.g. right –write, scene – seen).

Information processing: a model which shows a listener taking a piece of speech through several stages and reshaping it at each one.

IPA: International Phonetics Association; also stands for the International Phonetic Alphabet standardised by that association.

Inflections: In grammar, inflection or inflexion is the modification of a word to express different grammatical categories such as tense, grammatical

mood, grammatical voice, aspect, person, number, gender and case.

<http://en.wikipedia.org/wiki/Inflection>

Lemmas: Includes a headword and its most frequent inflections, and this process must not involve changing the part of speech from that of the headword.

Lexical segmentation: Processes of recognising words in the stream of speech.

Lexical stress: consistent stress on one syllable of a word, which helps the listener to identify it.

Liaison: The linking of words in speech when the second word begins with a vowel, e.g., an orange.

Linking: Process of joining one word to the next in CS, either by catenation or by inserting an extra consonant between two vowels, e.g. ‘you and me’

Linking ‘r’: A type of linking where a silent ‘r’ from the spelling is pronounced to facilitate the transition between two vowels at word-boundaries, e.g. ‘there is; applies only to accents of English where postvocalic ‘r’s are not pronounced otherwise.

Linguistic knowledge: Knowledge of the sounds, vocabulary, and grammar of the language (including word meanings).

Linguistic processing: Sound perception, word recognition, syntactic parsing.

Listener anxiety: The fear that connected L2 speech is too difficult to make sense.

Long-term memory (LTM): Total store of information, idea and experiences that are accessible to a person.

Morpheme: The smallest unit of meaning in a word. The word ‘inexpensive’ comprises two morphemes in and expensive.

Phoneme discrimination: Distinguishing between two sounds of a language that are easily confused.

Phoneme: one of a set of sounds which make up a language’s phonological system.

Phonetics: The study of speech sounds.

Phonology: The description of patterns of sounds in a language.

Prefix: This is a group of letters (or a letter) added to the **front** of a word or root to change its meaning, for example, the prefix pre (meaning ‘in front’ or ‘before’) in the words **prefix** and **prepare**.

Real time: Refers to the way in which the speech signal reaches the listener over time.

Reduction: The way in which words may become reduced in length and reshaped if they do not have a prominent role in an intonation group

Schwa: is the most frequently occurring vowel in English. It only occurs in unstressed syllables.

Schema (plural: schemata): a complex knowledge structure in the mind which groups all that an individual knows about, or associates with, a particular concept.

Segment: An individual sound, consonant, or vowel.

Segmentation: refers to the problem of locating word boundaries in a continuous signal in which physical cues are rarely present.

Short-term memory (STM): The activated neural connections in long-term memory that are being used for comprehension.

Singleton: a word occurring singly, especially a word set from the other words in a text.

Stressed: more prominent than other syllables. Especially used of **lexical stress**.

Stressed-timed: Describes the supposed rhythm of a language, characterised by roughly equal periods of time between stressed syllables.

Suffix: This is a group of letters (or a letter) added to the **end** of a word or root to change its meaning or use. Two examples are the suffix **–ness** added to stubborn to make stubbornness and the suffix **–ment** added to achieve to make **achievement**.

Syllable: A syllable is a single sound made with one push of the breath. The word mischievous (mis-chie-vous) has three syllables; while the word inspect (in- spect) has two.

Syllable-timed: describes the supposed rhythm of a language, characterised by syllables of roughly equal length.

Thought group or tone unit: This is a melodic unit made up of a specific pitch contour segmenting the stretch of discourse into message blocks, often marked by pauses at its boundary.

Tokens: Refers to the number of words in a text or corpus.

Top-down: Strictly speaking, describing a view of listening as a process that uses larger units in order to identify smaller ones (e.g. uses word-level information to recognise phonemes).

Top-down processing: Information processing guided by higher level mental processes as we construct representations, drawing on our experiences and expectations.

Top-down strategies: Listener based strategies for understanding; the listener taps into background knowledge of the topic, the situation or context, the type of text, and the language. This background knowledge activates a set of expectations that help the listener to interpret what is heard and anticipate what will come next.

Triangulation: A research process of obtaining multiple perspectives on the same data in order to add depth to analysis.

Validity: The degree to which a process or outcome is justifiable, effective, logical, and fair.

Weak form: a reduced form of a function word, usually containing /ə/. It is the most common form of the word; the full form might be used for emphasis.

Weak syllable: syllable with a weak-quality vowel such as /ə/.

Word recognition: The cognitive process of identifying what word was spoken, and activation word meanings associated with it.

Word variation: the way in which words vary according to the words next

to them, to the type of speech, and to their importance in an intonation group.

Working memory: a component of memory which holds short-term information and works upon it. Limited in how much it can hold and therefore how much attention can be allocated to a task.

CHAPTER 1 INTRODUCTION

1.1 What is the thesis about?

This thesis is concerned with listening problems and causes of these problems encountered by intermediate-level first-year undergraduates in China. The main aim of this thesis is to identify these learners' listening problems (LPs) and the causes of these problems in their English teaching and learning through multiple perspectives: learners' self-reflection, learners' listening performance through two dictation texts at different proficiency levels and my reflection as their English teacher and a researcher after one semester's teaching and learners' learning so that tentative solutions can then be put forward. The end result is to enhance Chinese university students' spoken word recognition in connected speech.

1.2 Why this topic?

Research motivations have resulted from multiple factors: theoretical, political, practical, and personal as explained below.

1.2.1 Personal motivation

My personal experiences of teaching English in two Chinese universities for many years and one year's stay for an MA in research methodology at the University of Nottingham from 2007 to 2008 with the result of distinction, which directly motivated me to choose this subject. During my MA study, I enriched my knowledge in research methodology and became interested in spoken word recognition (SWR).

Listening teaching practices when I was in China seemed to suggest that students were expected to understand spontaneously how to listen, as listening could not be taught but only learnt. Only repeated practice could improve one's listening ability. I observed that many teachers of English appeared perplexed when they failed to find effective teaching methods and strategies to improve their students' listening skills. I also noticed that students were often unable to understand fully the meaning of messages by speakers on video or audio in CS even when they could recognise all the words by sight.

After I arrived in Nottingham, I was very often frustrated by my attempts at daily communication in English with the local people of regional accent. I could not believe I was listening to English, which was totally different from what I had been used to. I could identify some words but the majority of the other words were merely clusters of sounds to me. Luckily, Dr. Richard Pemberton was my tutor and he invited me to assist him in interviewing 15 Chinese undergraduates at the University of Nottingham. Based on this experience, I came to realise that SWR could be a bigger project that I had imagined. I then decided to investigate SWR in CS among Chinese university students (CUS) at intermediate and higher intermediate levels for my MA graduation dissertation. Both my personal difficulties and my academic achievements contributed to my determination to investigate further the mechanism of SWR in CS for a PhD project.

1.2.2 Social motivation

English listening in social contexts has always drawn my attention. In China, one's English competence is related to one's social success and social status (Cortazzi & Jin, 1996; Nunan, 2003). Rapid economic development in China has created a pressing demand for competent users of English in all walks of life.

In this general social context, studies show that English teaching in China is becoming all the more attentive to the teaching of listening. *College English Curriculum Requirements (For Trial Implementation)* (The Ministry of Education of China, 2004) stresses the development of students' comprehensive language competence, especially in relation to listening. This has been an important milestone for English teaching in China; it reflects a consensus about the importance of teaching listening in English, a consensus that policy makers and educational practitioners have reached after more than three decades of English teaching practice since China adopted its Open Policy in 1978. In 2007, the *College English Curriculum Requirements* (The Ministry of Education of China, 2007), which stipulates that the objective of English teaching is 'to develop students' ability to use English in a well-rounded way, especially in listening and speaking' (p5) was issued.

Meanwhile, a pilot study was launched nationwide and a new model of the College English Test Band 4 (CET 4) was designed in 2006 and put into practice across China in January 2007. The new model attached more importance and attention to LC, which is now allocated 35 per cent of the total score (Before 2007, the total mark for LC occupied 20 per cent). Ever since, the general trend to place emphasis on listening within English teaching has continued to the present day.

1.2.3 Theoretical motivation

However, LC has not received enough attention in either research or teaching circles in the field of ELT in general and in ELT in China in particular. Many researchers acknowledge that LC is the least researched, least understood, and least valued skill by both researchers and teachers (Abbot, 1981, Pemberton, 2004; Vandergrift, 2007). Comparing it with other language skills, Goh (1997) states that, ‘there are fewer insights about the process of listening and the way it is learnt’ (p161). Consequently, some researchers view the skill of listening as the ‘Cinderella skill’ in language learning (Nunan, 1997).

Similarly, a few studies have revealed that one of the major problems for language learners is not a failure to use enough top-down strategies such as predicting and inferring to complete an interpretation (see, e.g. Goh, 2000), but a failure to recognise sufficient words to make appropriate predictions

and inferences (see, e.g. Field, 2004, Pemberton, 2004, Rost, 2002, Gao, 2008). These studies show that SWR plays a very important role in processing information within learners' brains (Aitchison, 2006, p227), while inadequate word recognition can be the cause of confusion in relation to second language comprehension (Rost, 2002).

Directly related to my research are studies on SWR. As previous research has demonstrated (Goh, 1999; Pemberton, 2004; Gao 2008), lexical processing in CS is one of the key problems for learners of English in China as it hinders their successful understanding of spoken English. This encouraged me to investigate this issue theoretically and informed current research proposal.

1.2.4 Practical motivation

The practical motivation concerns the discrepancy between the importance of English listening and the difficulties in current teaching and learning practices in LC. The importance of English listening cannot be over-emphasized, whether in general communication or in second language (L2) teaching.

Firstly, listening functions as an important reception skill for learning in life and, through this model, people acquire information about the world and the human beings around them (Wilt, 1950; Gilman & Moody, 1984). In

addition, since the late nineteenth century, listening comprehension has been thought to be a very important component in the field of second language acquisition (SLA) (Field, 1998, 2008; Rost, 2001, 2011). Besides, listening is regarded as a cornerstone in many theories of second or foreign language acquisition (Krashen, 1985). A number of studies (Cheng, 2009; Field, 2008; Rost, 1990; Rubin, 1994) suggest that, for EFL teachers and learners, listening, as an input skill, helps learners enhance their English ability. According to Rost (2002), English listening offers teachers a channel “for drawing learners’ attention to new forms (vocabulary, grammar, interaction patterns) in the language” (p141). Similarly, Wang’s research (2008) suggests that listening is the most complicated of the five language skills (listening, speaking, reading, writing and translation) for Chinese students. This conclusion strengthens the rationale of the present study on lexical segmentation in continuous speech among CUS. It is thus imperative to consider how to utilize fully the positive role of the teaching of listening skills to enhance English learning.

Furthermore, in the field of second and foreign language teaching listening is perceived to be the most difficult of the four language skills (listening, speaking, reading and writing) by many language learners (see, e.g. Rixon, 1986; Hasan 2000; Kim 2002; Graham 2003). The main reason is probably that listening is the least tangible of the four language skills (Vandergrift, 2004, Field, 2008) as it cannot be observed and defined precisely and directly (Hasan, 2000; Field, 2008); spoken words are not available for

listeners to scrutinise, as written words are (Rixon, 1986; Field, 2008). In summary, listening is ‘a skill which seems to develop easily for mother-tongue listening, but requires considerable effort where listening in a foreign language is concerned’ (Underwood, 1989, p1).

As a result, there exists certain inadequacy in the teaching of listening to students of English, as well as in its assessment and research owing to the difficulties that the skill itself presents. Students’ difficulties are not always readily detected, as their listening skills do not always receive proper evaluation; so, the ‘methodology of the listening lesson has been little discussed, researched or challenged.’ (Field, 2008, p1). Vandergrift and Goh offer a similar suggestion, ‘listening receives limited attention in many classes, often without sustained support to guide learners through the process of learning to become more successful listeners’ (Vandergrift & Goh, 2012, pXIII). Possibly due to the difficulties it presents to both students and teachers, the importance of listening as a skill has tended to receive less attention than the other three skills.

1.3 Research aims

In correspondence with motivations mentioned above, the present research project aims to:

- 1) Examine the possible relationship between the linguistic (bottom-up skills such as SWR) and the schematic (top-down skills such as inferring

and guessing) aspects of LC in Chinese university students at an intermediate level;

2) Explore an effective means of assessing students' difficulties in listening; and

3) Find effective ways of teaching listening comprehension to Chinese intermediate university students.

1.4 Where and how I did the research

I chose 'S University'¹ in Southern China as my fieldwork site, as I had worked there for over ten years and was familiar with its context. I began my fieldwork in September, 2009, staying at S University for a year, both as a researcher and a teacher. There I completed the pre-pilot study, the pilot study and the main study. At S University the students are assigned to five levels on the basis of placement tests. I taught three classes at intermediate level in the first semester, and another two classes at the same level in the second semester. More details will be provided in the section on research phases in Chapter 4.

In this research, I adopted a mixed methods classroom approach for the purpose of triangulation and validity. The quantitative research methods

¹ Names of institutions are pseudonyms to protect their anonymity and confidentiality.

included questionnaire surveys on students listening difficulties, pre and post Aural-Lex vocabulary size tests, and transcriptions of dictation texts at different levels, followed by post hoc questionnaires; the qualitative methods includes students' self-reflection reports on LPs, at the very beginning and at the end of the semester.

My intention was not only to describe the listening results of word recognition but also to represent SWR as a dynamic process. This mixed methods approach is not new (see, e.g. Isaacs, 2013), but this approach to this research is likely to differ from that of other research projects on SWR. There are similar studies, such as Pemberton (2004), who mainly adopted a quantitative perspective, and Goh (1999), who used mainly qualitative data; however, it seems that few previous studies in SWR have employed such a variety of research techniques within a single approach as the present study.

1.5. Focus of Research

Against the background provided above, this research is intended to explore the process of SWR in CS by intermediate learners of English in Chinese universities. Taking a cognitive perspective, this project has the following aims:

- identify the major difficulties in LC and the causes of these difficulties for Chinese university learners at an intermediate level (equivalent to IELTS score 4.0);

- identify whether SWR is one of the major factors that hinders L2 learners' acquisition of fluent LC;
- explore the extent to which L2 learners at an intermediate level are able to recognize frequently known words in connected speech;
- examine the effects of word recognition problems on LC;
- investigate the impact of a one-semester study on SWR and LC; and
- identify the major difficulties in CS after one-semester study.

The research questions deriving from these objectives are:

1. What are the major difficulties in LC experienced by Chinese university learners at intermediate level? What causes such difficulties?
2. What are the content and function words recognition of singleton in K1 after one semester English study?
3. What are the major listening problems that Chinese university learners at intermediate level still experience after one-semester learning? What causes such difficulties?

1.6 Research significance

As mentioned above, this research study adopts a mixed methods approach, including both quantitative and qualitative research, in an attempt to not only identify participants' LPs and the causes of these problems, but also to design an intervention aiming to improve their self-awareness of LPs and enable teachers working with Chinese university students at an intermediate level to gain a better understanding of their students' problems.

The study will address a number of issues: how to enable various research techniques to work together in the same context and how to explain the likely discrepancies between different methods of data collection and analysis. This will hopefully be illuminating for other research projects in relevant fields.

By exploring the impact of one-semester teaching and learning on SWR and LC, the study will also contribute to advancing our understanding of effective pedagogy for teaching LC. Thus, the findings will provide the basis for suggestions on how to improve the speed and automaticity of CUS' spoken word recognition through one-semester teaching and learning in connected speech in order to strengthen and improve their LC so that they become more fluent listeners.

1.7 Structure of the thesis

This thesis is divided into 8 chapters. Chapter 1 has briefly summarised the nature of my thesis, in terms of the object of its study, its research motivations, research setting, research aims and objectives, and significance. Chapter 2 presents a critical review of main theories and research methods in LC within the context of L2. Chapter 3 looks at previous research in English teaching in general and the teaching of listening in English in China in particular. The detailed research methodology and design for this project can be found in Chapter 4.

Chapter 5 examines CUS' perceived LPs and the causes of these problems through a mixture of questionnaire surveys and self-reflection reports. Chapter 6 explores further students' real-time LPs and the causes of the problems in two dictation texts at different proficiency levels: participants' level of recognition of function and content words in K1 (1000 most frequent spoken words), the recognition in singletons of K1, and the recognition of initial and final syllables. Chapter 7 examines and discusses the effect of one-semester teaching and learning on the students' SWR and LC by contrasting phonological vocabulary tests conducted both at the beginning and the end of the semester, the recognition levels of spoken words in singletons of K1 between these two time points through a series of Paired Sample T-tests. Finally, Chapter 8 presents the conclusions and implications of the present research project.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature on the spoken information processing in connected speech (CS), with a focus on spoken word recognition (SWR). A review of SWR research must take into account the context of listening in CS because SWR is fundamental to the process of the discrimination of meaning. Thus, taking an information processing perspective, this chapter surveys different perspectives on listening comprehension both in L1 and L2, with particular attention to the various factors and major difficulties that prevent L2 learners from understanding CS in English. It will also explore diverse theories for the causes of these listening difficulties, with a focus on the literature on SWR in CS, especially in relation to frequent words.

The review starts with a general description of changes in the focus of English language teaching and learning since the mid-1990s as background to the central issues of the chapter. Next, the chapter examines the different perspectives on models of listening as a skill existing in the relevant literature. Against this background, the processes involved in segmentation of SWR are examined. Then the chapter looks at the main features involved in listening comprehension (LC) in general to identify those that may be problematic for Chinese learners of English. The final section of the chapter examines SWR in the context of CS.

2.2 General trend in English language teaching and learning

The general trend in current English teaching and learning as a second language (L2) is well summarized by Hinkel (2006). According to her, four factors ‘combine together to affect current perspectives on the teaching of English worldwide: (a) the decline of methods, (b) a growing emphasis on both bottom-up and top-down skills, (c) the creation of new knowledge about English, and (d) integrated and contextualized teaching of multiple language skills’ (Hinkel, 2006, p109).

In other words, no longer is any single teaching perspective or rigid method appropriate for all situations and contexts. Instead, the teaching and learning of English as L2 incorporates manifold training courses, integrating both content processing and specific language skills development. Consequently, as Hinkel points out, in the current teaching of the four skills, ‘curricula and instruction strive to achieve a balance between the linguistic and the schematic aspects of learner language development’ (Hinkel, 2006, p111). That is to say, bottom-up skills, focused on linguistic processing cultivation, and top-down strategies, focused on making predictions and inferences based on one’s prior and contextual knowledge, have been recognized as equally important factors affecting learners’ English acquisition, as will be further discussed in the next section. This trend is also observed in some other research since the mid-1990s (Rost, 2002; Rubin, 1994; Vandergrift, 2004).

In Chinese universities, similar practices have been observed. According to the College English Curriculum Requirements (The Chinese Ministry of Education, 2007, p5), the following aspects should particularly be addressed: ‘incorporating different teaching models and approaches’, with listening and speaking particularly stressed, encouraging the use of computer and web-based information technology, offering three levels of teaching (basic, intermediate and advanced) to meet different needs, and promoting learners’ ‘general cultural awareness so as to meet the needs of China’s social development and international exchanges’.

As a result of this policy change, listening seems to have been elevated to an unprecedentedly high level in the teaching of English in Chinese universities, and the importance of teaching and learning listening has been widely recognized (please see the previous chapter and Section 3.8 for more details).

2.3 Listening as a dynamic process: Different perspectives

Different theoretical and practical concerns about listening have been expressed. Earlier studies on LC tend to suggest that listening is a passive process with listeners only taking in spoken information; ideas in more recent studies indicate that listening can be much more complex than passively receiving input messages. The developed ideas, diverse as they are, when accumulated, tend to suggest the listening process is a dynamic, integrative, integrated and complicated activity, involving all mental activities at one time.

Research on listening as a mental process involves both English as an L1 and L2. For instance, Anderson's three-phase model of LC was based on L1 listening, as Goh's (2000, p57) research shows, 'it is no less relevant to an understanding of second language comprehension', as 'there are many similarities between L1 and L2 comprehension'. Moreover, bottom-up processing, top-down processing and interactive processing, as will be further reviewed, are not limited to the LC of L2. They are reflective of the way in which knowledge is acquired through listening.

The discussions on the listening process presented below will help clarify the nature of listening, the roles of the listener, and the essence of listening process, the ways of processing information and especially the position and the starting points for SWR in the current research project.

2.3.1 Features of listening

Listening has its own features and demands in comparison with the other language skills. 'Listening is a rather more demanding skill than reading' (Field, 2007, p27) as there are no regular spaces that we can see between words as in the case of reading. The nature of listening is ephemeral and transient. Thus, it is difficult for L2 listeners to segment connected speech into individual words in such short time, as claimed by Field. 'The transitory nature of listening appears to be a major cause of L2 listener anxiety' (2007, p27).

Similarly, Lynch and Mendelsohn (2010, p180) summarise the general features of listening as follows:

- *It's usually ephemeral, one-shot nature.*
- The presence of a rich prosody (stress, intonation, rhythm, loudness and more), which is absent from the written language.
- The presence of characteristics of natural fast speech, such as assimilation, making it markedly different from written language, for example, /'gəvnmnt / for 'government'.
- The frequent need to process and respond almost immediately.

The list of the features of listening above seems to suggest that listening is an transient process, during which there are sound characteristics absent from the written language and sound variations typical of fast speech. This understanding marks listening as a process that is different from the other language skills.

2.3.2 Listening: From passive to active

There has been considerable debate on and a gradually changing recognition of the roles of the listener in the process of communication. Nation and Newton (2009, p37) point out the differences in the listener's functions between traditional assumptions, which argue that the role of the listener is to receive information passively, and the relatively new models, which stress the creativity of the listener in generating meanings in the process of listening.

Listening used to be seen as a passive and receptive process by which the listener receives information sent by a speaker (Nation, 2009). Lynch and Mendelsohn (2010, p180) hold a similar idea in that listening was traditionally regarded as a passive process, but ‘today we recognize that listening is an active process, and that good listeners are just as active when listening as speakers are when speaking’. Thus, researchers began to shift their attention to the dynamic and subjective roles of the listener in processing the input information. This line of thought reflects the changing teaching philosophy of researchers. They no longer took listening to be a pure task for the listener but a complex process involving listeners, speakers, the situation and the input message. In the listening process, a message is no longer ‘fixed,’ but ‘created in the interactional space’ between listeners and speakers (Nation & Newton, 2009, p37). Only with proper collaboration between listeners and speakers can meaning be produced, absorbed and understood. Just as Underwood (1989, p2) asserts ‘Whilst hearing can be thought of as a passive condition, listening is always an active process’.

Actually, there are many researchers who support the idea that the listening process is an active, interactive and dynamic activity. For example, Tomlinson (1984) defines listening as ‘active listening.’ This means that listening goes beyond comprehension as an understanding of the message content, to comprehension as an act of empathetic understanding of the speaker. Consequently, the listener in this process of understanding extends

their feelings and concern to the speaker. Similarly, Ronald and Roskelly (1985) have observed the complex logical procedures in listening, defining listening as an active process requiring the same skills of prediction, hypothesizing, checking, revising, and generalising that writing and reading demand. More recently, Rost (2002) has pointed out that listening is a process involving a continuum of active processes in which the listener selects and interprets information that comes from auditory and visual clues in order to define what is going on and what the speaker is trying to express. Along similar lines, Lynch and Mendelsohn (2010, p180) contend that 'active listening is also an interpretive process'.

Undoubtedly, these opinions suggesting the activeness of the listener help to recognize the indispensable roles of listeners in the completion of the listening task. At the same time, these ideas assert the importance and the subtlety of the meaning making process to be decoded, which is not at all stable, as the traditional views would hold, but flowing and dynamic. The understanding of LC as an interactive process suggests the study of listening as a process by integrating various aspects and multiple elements, with particular attention to the listener's active role. Likewise, this insight encouraged me to take SWR in CS as an equally complex and dynamic process, and to probe the diverse variations of sounds and phonemes within it as will be later examined.

2.3.3 Anderson's (1995) three-phase model of language comprehension

Chastain (1976) takes LC as a five-phase process: discrimination,

perception of message, auditory memory, decoding message and use or store message. Discrimination, as the first step, is concerned with the discrimination of intonation and pronunciation; perception follows discrimination of sounds and acquires the sound combinations. In the phase of auditory memory, learners retain the perceived message in their memories for some time and then, in the fourth phase, the message kept in memory temporarily is decoded or interpreted. Finally, listeners enter the fifth phase, when they use or store in memory the decoded message to understand the input message. Similar to Chastain's classification, Abbott et al. (1981) suggest that the listening phases consist of perception, decoding, prediction and selection.

In comparison with the above, Anderson's (1995) three-phase cognitive processing model of language comprehension seems to offer more application to listening comprehension as it can help to identify the exact phase in which LC may break down. The three-phase listening model comprises perception, parsing, and utilization. Processing in the perception refers to maintaining attention to spoken input, parsing means encoding the input to establish a meaningful representation in short-term memory, and utilization concerns the use of background knowledge to interpret the input for storage. Anderson's three-phase cognitive processing is consistent with the result of O'Malley, Chamot and Kupper (1989)'s experiment on the cognitive processes in learners' LC.

Goh (2000) also incorporated Anderson's model in an analysis of Chinese students' listening difficulties, by assigning different listening problems (LPs) to the three phases of the model: perception, parsing and utilisation. They stand for different levels of processing, with perception at the lowest level. Goh's research shows that these phases are 'interrelated and recursive, and can happen concurrently during a single listening event' (Goh, 2000, p57). According to Goh, the problems at the perception stage are mostly related to 'recognizing sounds as distinct words or groups of words'; the problems in the parsing stage are concerned with 'various difficulties with developing a coherent mental representation of words heard'; the difficulties experienced in the utilization stage are caused by 'either a lack of prior knowledge or inappropriate application'. In other words, the problems of bottom-up processing occur at the perception stage, the difficulties in top-down strategies belong to the utilization stage, and the problems of the interaction between the bottom-up skills and the top-down strategies are involved in the parsing stage.

The various studies reviewed above, which segment the listening process into phases, suggest that listening is a process whereby all phases work together simultaneously to encode and decode input messages. Anderson's three-stage framework helps us to diagnose learners' listening difficulties accurately as it identifies the phases in comprehension where the process might break down. Listening comprehension is an interactive and integrated model involving the bottom-up process and top-down process. A competent

listener is able to employ both of these two information processes to succeed in comprehension of spoken language if he/she knows how these processes are integrated and orchestrated cognitively.

The key point in successful comprehension consists in ‘the individual’s ability to integrate information gathered from the two’ (Lynch & Mendelsohn, 2002). How might less-skilled and skilled L2 learners use these two kinds of processing to compensate for listening comprehension difficulties and reach full understanding?

Stanovich (1980) reviews a wide range of L1 studies to show that good readers are able to recognise words very quickly and use the processing capacity freed up for comprehension rather than using the redundancy in texts to speed up word recognition. He also proposes an ‘interactive-compensatory’ model of reading in which a weakness in bottom-up processing will lead to greater reliance on top-down process to fill the gap in understanding. In other words, poor readers are more context-driven, whereas better readers recognise words more quickly and are therefore able to devote time and cognitive processing capacity on understanding the text. The guesswork that poor L2 readers are forced into by insufficient word recognition skills has been noted (e.g. Kelly 1990; Haynes, 1993).

If bottom-up skills are important in reading, this is much more the case in

listening, when there is little chance to backtrack and adjust initial impressions. Poor L2 listeners, more than L2 readers, have to rely on guesswork to fill in the words that they have been unable to recognise. Rather than using insufficient top-down strategies, such learners are likely to be overly engaged in top-down strategies, thus using up their vital processing capacities.

Researchers who have investigated the interaction between bottom-up processing and top-down processing suggest that low-level listeners tend to be over reliant on bottom-up processing. These listeners are so addicted in decoding the linguistic elements that they do not have enough capacity to use top-down processing to aid comprehension. For example, Hansen & Jensen (1994) explored the ways in which listeners at different proficiency levels would be able to answer global and local questions by using two kinds of academic lecture: a history and a chemistry lecture. Global questions indicated top-down processing, while local questions indicated bottom-up processing. The conclusion from this study is that students with a low-proficiency level relied heavily on bottom-up processing skills because they did not have sufficient capacity to process and use prior knowledge of those subjects.

Researchers supporting Hansen & Jensen's conclusions have argued that low-proficiency listeners are fixed at word level. This takes up so many of their processing capacities that they are prevented from turning to top-

down processing strategies, such as contextual clues and background knowledge, because they have limited linguistic knowledge and insufficient word recognition skills.

Other studies, however, have challenged this established claim to support the opposite point of view. Schmidt-Rimehart (1994) investigated whether familiar topics affected recall scores when participants used their background knowledge in a variety of ways. This study required participants to recall the situations in two listening passages: in one case the information was familiar and, in the other, it was unfamiliar. The conclusions of this study show that low proficiency students “relied more on contextual clues” (Schmidt-Rimehart: p181).

Tsui & Fullilove (1998) extensively explored top-down processing. They observed the processing skills that skilled and less-skilled L2 listeners used, distinguishing the listeners’ performance in a large-scale examination (The Hong Kong Certificate of Education Examination) over seven years. They suggested that less-skilled listeners relied heavily on top-down processing to compensate for the problem of perception.

In a similar vein, my own MA study findings support Field’s results. My study explored which type of information processing- bottom-up or top-down- is fundamental and a prerequisite to understanding connected speech. Her findings show that learners at intermediate level, who were expected to use bottom-up processing more often, actually used top-down processing

more often than learners at high-intermediate level in their listening because of limited or inadequate abilities in spoken word recognition. This suggests that it is the bottom-up skills such as word recognition that mainly hinder students' listening comprehension. The biggest listening problem was poor spoken word recognition within 1000-2000 frequency bands in connected speech. That is why they had to guess by using top-down processing. One of the major problems for less-skilled listeners is not their insufficient use of top-down strategies (Goh, 2000, Pemberton, 2004), 'but they do not have sufficient bottom-up skills to recognise words quickly in the first place' (Pemberton, 2004, p4). In other words, lower level learners of English are still in need of more fundamental knowledge training such as features of connected speech and SWR in English, including very frequently spoken vocabulary, which are the vital components of bottom-up processing for low-level listeners.

Researchers supporting the above claim hold that less-skilled listeners have to rely more on contextual information and guesswork to understand the text as they have limited linguistic skills and insufficient word recognition. Listeners at lower levels can use top-down strategies effectively, such as predicting, guessing or inferring in their listening comprehension on condition that they have first developed enough bottom-up skills—the ability to recognize the frequent words effectively.

From the discussion above, we can see clearly that LC is a complex and integrated process. The balance of research suggest that bottom-up skills are primary for L2 listeners at intermediate level as they have to recognise words first in order to apply top-down cognitive and metacognitive strategies such as guessing meaning or relating new information to what they already know. Moreover, the more attention L2 listeners devote to guesswork, when their word recognition is not automatic, the less capacity they will have available for understanding. Therefore, bottom-up skills, especially spoken word recognition, are essential and important for L2 listeners at intermediate level. Just as Rost & Willson claim that ‘Word recognition is the most important bottom up listening processes’.

2.3.4 Schema and comprehension

Here it is worthwhile reviewing the concept of ‘schema’, which has played an important role in the theory of L2 reading and listening. The notion of schema laid a foundation for explaining how knowledge could be obtained at a higher level, or top-down processing.

There are different definitions of a schema. For instance, Bartlett (1932, p201) holds that a schema is ‘an active organization of past reactions or past experience.’ According to Anderson (1995, p5), ‘a schema can be conceived as consisting of a set of expectations. Comprehension occurs when these expectations are fulfilled by the specific information that a scene, message, or happening delivers to the senses.’ Lynch & Mendelsohn define as ‘prior knowledge and experience that we have in memory and can call on in the process of comprehension’ (2010, p183).

In the process of reading comprehension, people often employ the strategy of predicting or guessing. As Anderson (1995, p6) contends, making inferences can be a necessary step for acquiring full knowledge, as ‘gaps in available information may be completed by inference in order to maintain consistency with expectations.’

Anderson’s (1995) interpretation of schema informs how top-down processing is related to LC in English teaching and learning. In this process, learners’ prior knowledge, listeners, the listening text and speakers are interactive, and together they generate meaning and comprehension. Another view is that listening is regarded as an interactive process which involves both top-down and bottom-up skills as examined in the next section.

2.3.5 Summary of LC as a process

Following the review and comparison of the studies above, which differ in their theoretical bases, it can be seen that practical concerns and views can help to reveal the nature of the listening process for L2 learners.

LC is a complex, interactive, interpretive and complex process in which the listener takes a series of steps, from identifying sounds, vocabulary, and grammatical structure, interpreting stress and intonation, to memorizing, decoding and interpreting input information (Hedge, 2000; Field, 2007 & Rost, 2009). Thus, listening is an active rather than passive process. In a similar vein, it would not be realistic to assert that the steps involved in the listening process occur in a linear and timely order. The steps involved may not happen chronologically. Some steps may take place earlier even though

they may have been thought to happen at a later stage in some of the studies reviewed in this section. Therefore, the patterns of their processing may be more complicated than people usually think. They are processed both in parallel and interactively.

However, the attention to the active role of the listeners, the complicated mechanisms involved in the listening process, and the concern with the culturally and contextually based top-down processing are apt to turn the attention of teachers and learners away from the training of SWR to extensive listening. Based on research by Lynch and Mendelsohn (2002), Tsui and Fullilove (1998), and Nation and Newton (2009), this study strongly argues for the need of bottom-up processing for successful listening. This perspective takes a major concern with the internal mechanisms of SWR as the key to bottom-up processing.

2.4 A three-store model of human memory and its implications for listening comprehension

As shown above, LC is a complex, interactive process involving both bottom-up processing and top-down processing. As memory plays an important role in processing information, an examination of a three-store model of human memory, especially the role of working memory within it, will help explore students' LPs and the causes of these problems in CS.

Miller's (1956) contribution to cognitive psychology suggests that short-term memory has a capacity of about "seven plus-or-minus two" chunks. This implies that proper chunking of lengthy information into a limited number (a number from five to nine) of bits or chunks will enhance one's memory capacity.

Miller's work was published; a considerable amount of research has been conducted concerning chunking and short-term memory in various fields (e.g. Anderson, 1985; Atkinson & Shiffrin, 1968; Field, 2003; Randall, 2007). I am particularly interested in two aspects in this discussion bits of information and short-term memory. The former is related to chunk recognition and its design in my research, as will be further discussed in this chapter, and the latter is related to information processing, one of the keys to my research.

2.4.1 A three-store model of human memory

To gain insight into how input information is processed in the human mind, Field (2003) has developed a three-store model of human memory on the basis of early information processing theory of memory stores by Atkinson and Shiffrin (1968). Field's (2003: 19) processing model starts with 'external stimulus,' followed by how the information from an external stimulus is processed. He believes that the information processing in listening or reading is a three-store model, which comprises: sensory stores (in speech or writing), short-term memory, and long-term memory.

This model is conducive to understanding how listeners may process an input stimulus or message in a continuous process of three steps: echoic memory, short-term memory and long-term memory. Roughly speaking, the three stores of memory are in line with the three phases of Anderson's (1985) LC model, echoic memory is to perceptual processing as short-term memory is to parsing, and long-term memory to utilization.

In light of the three-store model, listeners may retain an auditory trace or echoic memory of the stimulus in sensory store. Then this echoic form may be passed on to the short term memory, which 'holds temporary information needed for immediate purposes', and which has to 'extract lexical information' (Field, 2003, p19) from the long term memory. The key in this three-store model is the short-term memory.

2.4.2 from short-term memory to working memory

Working memory seems to be 'usually preferred' to short-term memory, as short-term memory is 'more than a store' and 'responsible for language operations' (Field, 2003, p19). Randall's (2007) elaboration of the relationship between short-memory and working memory offers a practical approach to understanding why listening breakdown should happen.

For Randall, short-term memory seems to be a warehouse for working memory, from which working memory can withdraw what it needs and put it into practice. As Randall (2007) observes, short-term memory is 'the

temporary nature of the store and is associated more with a serial model of language processing' while the term of working memory 'refers more to the function of the memory store', as working memory 'acts as the coordinator of different bottom-up and top-down processes' (p15).

Randall's emphasis on two aspects of working memory is illuminating for this research project. Firstly, working memory has limited capacity and is temporary in nature. This may explain why listeners may forget the first chunk that they have heard while listening to the following chunk in CS, which is a difficulty commonly reported by L2 learners. Besides, Randall's (2007) research, influenced by Miller's (1956) 'Magic Number 7', demonstrated how to expand the storage capacity of working memory by chunking information such as putting numbers and words into groups, which ideally will make working memory hold '7±2 bits' of information. This idea suggests the importance of dividing individual words into groups in information processing, and the probability of bringing more formulaic expressions into one chunk in order for learners to improve automaticity while processing information. From a research perspective, this also points to the importance of designing research on chunk recognition in which the chunks for dictation purposes will not be too long or too short.

In brief, the three-store model of human memory, especially short-term memory, or working memory, as informative concepts, provides an explanation or model on how the bottom-up process and the top-down

process interact in CS, why listeners can forget what they have just heard, and also how to promote the teaching and learning of listening in L2.

2.5 The cognitive perspective

This section briefly discusses the two main theoretical perspectives that have influenced research in second language acquisition (SLA) in an attempt to inform the present study with a special emphasis on spoken word recognition.

2.5.1 Two broad theoretical perspectives and their differences in SLA

Socio-cultural and cognitive perspectives have largely influenced research practices in SLA. However, the two perspectives have different principles and practices on how a second language is acquired and how to teach and learn it. The controversy between them has existed for some time now (Poulisse, 1997; Zuengler & Miller, 2006).

Researchers following the socio-cultural perspective emphasise the effect of context on language acquisition, and believe that language acquisition occurs through the interaction and use of language between learners and society (see e.g. Firth, 1996). They have called for a shift from the perspective that takes “language as input” to that that looks at language “as a resource for participation” in everyday communication (Zuengler & Miller, 2006, p37), for participation itself is learning. Their arguments seem to

attempt to increase people's concern with the dynamic roles of socio-cultural discourses in connecting individual learners' mental processes with their socio-cultural settings.

By contrast, researchers sharing the cognitive perspective stress the role that the individual learning mental process plays in the mind; they hold that the process of SLA is an individualized one, and that SLA should separate language acquisition from language use (see e.g. Long, 1997; Kasper, 1997, and Gass, 1988). There are some illuminating studies in this school as discussed below.

Poulisse (1997, p324), for instance, assumes that 'the acquisition and learning of skills are generally considered to be psychological processes'. When recognising the importance of the sociolinguistics, Poulisse (1997) believes that psycholinguistic approaches in SLA are primary and sociolinguistic ones are secondary: the basic processes of acquiring and using language are regarded as the first step, and 'contextual factors that may influence these processes' are regarded as the second (p324).

Field (2003), from the perspective of psycholinguistics, approaches this issue by taking a language user as an individual, 'whose linguistic performance is determined by the strengths and limitations of the mental apparatus that we all share' (p2), and addresses 'language as a product of the human mind' (ibid).

Similarly, Wigglesworth (2005) thinks of language learning ‘as a complex set of processes that largely take place in the learner’s head’ (p98). She argues for the study of the learner’s conscious process as the key to understanding the essence of second language acquisition.

In a similar vein, Randall (2007), when interpreting the current fascination of pedagogical practice with contextual teaching and learning, points out that the natural, fluent and automatic use of top-down schema is usually implemented by first language readers resting ‘on already well-established SWR procedures’ (p96), thus not being applicable to second language learners. The L2 learners need more bottom-up skills training.

Randall’s concern is mainly about learners’ reading competency. As for the listening situation, it has been found to be more difficult and complicated, and therefore needs more cultivation of bottom-up strategies, especially SWR in LC due to the special features of the listening process, as described above. The insight into SWR in the listening process and the corresponding strategies for teaching it are the fundamental steps by which fluent LC can be reached.

In the next section, I will further investigate the rationale of my perspectives in exploring SWR in connected speech.

2.5.2 SWR project: The cognitive perspective

There is no denying that culturally immersed teaching is fruitful. However, I intend to take a cognitive perspective, as I side with the ontological position that suggests the key to understanding the listening process, especially word recognition in LC for CUS, lies largely within the head rather than in the context of society.

Firstly, culturally and contextually based listening teaching is not suitable for Chinese learners, as there are not enough contextual circumstances in which the language learners can be fully immersed. It is true that Nation and Newton's (2009) report, as has been referenced above, on the English French Immersion project suggests that the role of contextually based top-down listening process is conducive to learners' natural acquisition of a language. However, the study, set in the French-speaking part of Canada, cannot be applied to many learning environments, of which China is one.

Secondly, the learners' own problems and the means of solving these problems are the motivation for this research project. The survey of Underwood's project (1989), Goh's (2000) research, Hansan's exploration (2000), Pemberton's report (2004), and of that of Gao (2008) all demonstrate that one of the biggest problems for listening is lack of vocabulary (please see below for an extensive review). To solve this

problem is to lay a solid foundation for the learners' English learning in the future. Word recognition is concerned with the minute language processing in peoples' minds. Although situating this issue socially and culturally would have been interesting, this study considered it necessary to explore this issue cognitively given the context where it was located.

Besides, it must be pointed out that the ideas from sociocultural perspective, undoubtedly influenced by prevailing cultural ideas, would easily lead teachers and learners away from SWR practice and expose them to a multiplicity of socio-cultural messages.

To sum up, while realizing the significance of social-cultural theories in enhancing learners' listening ability, I find the cognitive perspective is more suitable for SLA learners in my research to address the SWR process in CS by CUS, and will thus take it as an epistemological guide.

2.6 Segmentation of SWR into phases

Listening as a continuous process is based on phonemic and syllabic discrimination and lexical processing. However, it must be pointed out that LC requires more than just SWR, as the survey of various research projects on LC and SWR suggests. This requires us to investigate the internal world of word recognition in order to gain insight into it as a dynamic process rather than as a static entity.

SWR is one of the shortest phases in the stage of sound discrimination process, and it is actualized in the phases of perceptual processing and parsing in Anderson's (1985) three-phase listening model mentioned above. Therefore, word identification is a very common phenomenon, which has been covered in all kinds of language acquisition theories, both for L1 and L2 (e.g. Aitchison, 2006; Anderson, 1985; Tyler & Frauenfelder, 1987). It is worthwhile exploring what happens within the phases of lexical processing to gain insight into the various factors involved in this process.

According to Tyler and Frauenfelder's (1987), SWR has five phases: initial lexical contact, activation, selection, word recognition, and lexical access. Of the five interconnected and interlocked stages, SWR is a process in which perception and meaning representation are connected and matched. This is an important consideration for the present study as will be discussed later on.

In a similar vein, Aitchison (2006, p227) emphasizes that SWR in listening is a mental process with 'a complex procedure which requires more skill than one might think' as it plays a very important role in processing information within the learners' brain.

Rost (2002, p20) holds that word recognition, as 'the basis of spoken-language comprehension', involves two tasks: 'identification of words and activating knowledge of word meaning'. He further explains that either

‘incomplete identification of word boundaries or inadequate knowledge of word meanings’ (p20) can be the cause of second language comprehension confusion.

Cutler (1997) illustrates the special nature of the difficulties in word recognition by analogy between reading continuous text and listening to CS. For her, there is not any auditory counterpart to the clear segmentation in reading. In reading, there are definite word boundary markers, so readers do not have to identify when the spellings of words come to a stop. However, in listening, there can be no clear word boundary markers because the pronunciation of words can be linked in an uninterrupted process. This undoubtedly poses an extra burden on the listeners, particularly in the case of beginner and intermediate L2 learners of English.

Different studies and theories on segmenting SWR into smaller units bring home to me the idea that SWR is another complicated process in the area of listening comprehension. This seems to suggest that, albeit challenging, exploring SWR can bring significant benefits to students. The in-depth exploration of this phenomenon is thus valuable practically, especially for learners such as CUS studying English at intermediate level and also, theoretically, for researchers exploring SWR.

This understanding of SWR as a process will provide a solid basis for the present study. Accordingly, this research topic can be addressed from a few

perspectives and in a number of phases, which together reflect the whole process of SWR.

2.7 SWR as a major obstacle to L2 learners' full understanding of connected speech

This section reviews the studies on listening difficulties for L2 learners in general and CUS in particular. The section has been divided into two. The first part looks at the general factors that can be most relevant to word recognition, whilst the second part examines how these factors relate to CUS.

2.7.1 Difficulties involved in listening comprehension

Learners in an L2 context face many difficulties that are generally associated with learning foreign languages, the most influential of which seems to be the fact that they seldom communicate with people around them in the target language except in class. This section intends to survey different perspectives on the factors affecting LC so as to decide which of these can be most relevant to word recognition in LC of CS.

There are many factors that influence English LC: text, interlocutor, listener, and environmental factors (Brown & Yule, 1983; Anderson & Lynch, 1988; Rubin, 1994; Hedge, 2001). However, there seems to be no universal consensus as to the exact number of factors involved in English listening,

for researchers have their own preferences in terms of classification, as well as different starting points and theoretical perspectives.

For example, Rubin (1994) identifies five major factors affecting LC: 1) text characteristics, 2) interlocutor characteristics, 3) task characteristics, 4) listener characteristics, and 5) process characteristics. With these five factors, Rubin has tried to offer an exhaustive and systematic survey of all the links constituting the listening process, involving listening content, the distinctive features of the speaker and the listener, what the participants do in this process, and how the speaking-listening communication proceeds. However, Rubin's study is especially enlightening for lexical processing in text characteristics, including stressed syllables, high intensity segments, the articulation of phonemes, chunking, the level of perception, and sandhi, including assimilation, mutation, contraction, liaison, and elision, which are all the focus of the present project.

The level of perception emphasises both the lexical and prosodic analysis in word boundary detection while sandhi is concerned with the mechanism which helps interpret how the stream of speech is divided and united. These features of text, unless adequately understood, may create barriers to fluent understanding in CS for L2 learners. Rubin's theoretical perspectives and research results have encouraged the view of the LC of L2 learners as a process that can be segmented into different units and one that involves multiple elements.

Along similar lines, Hasan's (2000) research lists the following factors as influencing LC: learner strategies, features of the listening text, characteristics of the speaker, attitude of the listener, the nature of the listening task after completion of text listening, and the amount of supplementary written material to reduce the difficulty of the listening task. The construct of her study was to identify the factors that affect learners' understanding in connected speech.

On the basis of a general understanding of the factors involved in the process of listening, researchers have attempted to pinpoint the exact causes of the LPs in line with the identification of listening factors. For example, Hasan (2000) interpreted in detail the significance of each factor in his study and made some suggestions as to how to teach listening more effectively. What is worth mentioning here is Hasan's finding in relation to how unfamiliar words in the section of listening text hinder LC, arguing that vocabulary in the category of listening text was the biggest obstacle to listening. This emphasis on the vital importance of listening vocabulary further propelled me forward with my project on SWR in LC.

Underwood (1989) identified seven major LPs students encountered during listening:

1. lack of control over the speed at which speakers speak ,
2. not being able to get things repeated,
3. the listener's limited vocabulary,

4. failure to recognize the 'signals,'
5. problems of interpretation,
6. inability to concentrate,
7. established learning habits.

Underwood (1989) viewed these problems as being related to learners' different learning contexts, such as their culture and education. She points out that, if learners are from a culture and education with a strong storytelling and oral tradition, their competences in LC are better than those from a reading and book-based cultural and educational context. According to this finding, Chinese learners belong to reading and book-based cultural and educational context, their oral skills (listening and speaking) are not better than their written skills (reading and writing) as they have not received any courses such as drama in the curriculum of primary school, junior school and high school. The analysis of the seven LPs reaffirms the idea that the listeners' lack of listening vocabulary is one of the seven major LPs that hinder listeners' full understanding of CS.

Working in the context of L2 with learners with a Chinese background and somewhat different from Rubin (1994), Goh (1999) identified 20 influential factors in LC by these English learners, but categorized them into five groups: text, listener, speaker, task and environment. According to this study (ibid), two-thirds of her 40 research participants recognised the following five factors that affected their LC: vocabulary knowledge, prior (topic) knowledge, speech rate, input type (e.g. listening on the telephone and to the radio), and accent.

Goh's (2000) finding, in combination with Underwood's (1989) research mentioned above, inspired me further in the process of the literature review as to how to pinpoint the exact listening difficulties of CUS. Based on L2 learners with Chinese as their first language, Goh (2000) explored LC problems of these participants. In her study, the data were collected from learner diaries, small group interviews, and immediate retrospective verbalization. Findings include ten listening processing problems in relation to the three cognitive comprehension processing stages identified by Anderson (1995): perception (segmenting the speech stream, matching the sound to an item in the lexicon, keeping the sounds in short memory), parsing (transforming words into a meaningful representation of a stretch of speech) and utilization (relating the message to existing knowledge and retaining input message in long-term memory).

Goh (2000, p59) offered a clear illustration of what the three stages suggest. According to her, the problems at the perception stage are mostly related to 'recognizing sounds as distinct words or groups of words'. The problems in the parsing stage are concerned with 'various difficulties with developing a coherent mental representation of words heard' (p59). The difficulties experienced in the utilization stage are caused by 'either a lack of prior knowledge or inappropriate application' (p59). In other words, the problems of bottom-up skills occur at the perception stage, the difficulties in top-down strategies belong to the utilization stage, and the problems of the interaction between the bottom-up skills and the top-down strategies are

involved in the parsing stage. The five most common LPs Goh (2000) highlights are:

1. Quickly forget what they heard;
2. Do not recognize words they know;
3. Understand words but not the intended message;
4. Neglect the next part when thinking about meaning;
5. Unable to form a mental representation from words heard.

Comparing Goh's (2000) and Underwood's (1989) findings, we can see that there are some similarities and differences. There are two common difficulties identified by both studies: one is short-time memory in the sense that listeners cannot retain the input message for a long time and listeners cannot recognize words they know. These two problems are shared by listeners from different learning backgrounds. Furthermore, Goh's (2000) study shows that Chinese students regard vocabulary knowledge and the ability to recognize known words as the vital factors in L2 successful listening performance. This finding confirms research by Boyle (1984) who found that Chinese learners of English identify vocabulary as one of the factors influencing their LC.

Based on the findings of a questionnaire for learners at three higher secondary schools in Pakistan, Butt et al. (2010) identified that speakers' pronunciation, accent, and oral expression were the learners' major problems in the process of listening exercises. Among these three LPs, pronunciation was the most serious that learners perceived.

The above review of the relationship between the factors affecting LC and the listening difficulties related to these factors shows that listening to CS in English is a complex process engaging diverse features, which work together to generate meanings for the listeners. In the course of actual listening, the variety of factors can be represented in equally various forms of listening difficulties. The analysis from this perspective would help research in this area become more attentive to why and how SWR and vocabulary could be obstacles to adequate LC for learners of English in general and for CUS in particular. As for the exact causal relationship between listening factors and listening difficulties, I will develop it further in relation to SWR in the following section.

2.7.2 Difficulties involved in listening comprehension for Chinese students

Studies have demonstrated that vocabulary size is a major barrier for English learners' LC. Underwood (1989) identifies limited vocabulary size as the third most important problem in the first three common problems perceived by learners. Hasan's (2000) study also supported that vocabulary made listening difficult. He used learners' reports to perceive how listening factors are related to problems in English listening by making a list of five: learner strategies, listening text, speaker, listener attitude, and listening task, under each of which are reports of the listening difficulties. The first item in the 'listening text' group is 'Unfamiliar words interfere with my LC'. From the data collected from verbal report such as learner diaries, small group interviews, and immediate retrospective verbalization in the research on the English learners with Chinese background, Goh (1999) concluded, however,

that vocabulary knowledge is the first biggest obstacle that influences L2 learners' LC.

Despite the existing research in this area, there still exist some questions. What is the implication of the vocabulary mentioned here? Does it refer to written vocabulary or aural vocabulary? It would seem that it is likely to refer to the written vocabulary, because the learners at L2 tend to have a larger written vocabulary than aural vocabulary, as Gao's (2008) research proves. Moreover, research conducted in the context of L2 in Japan (Yamaguchi, 2001) reached a similar conclusion, asserting that the Japanese learners of English depend more on written words than aural words in successful lexical processing.

Secondly, research shows that successful SWR is far from easy for learners of English. Yamaguchi (2001), following Hayashi's study (1991), asserted that inadequacy in identifying individual words is the difficulty in LC at sentence level for learners of English in Japan. Gao, (2008) concludes that the first common difficulty that Chinese college learners perceived in LC is being 'unable to form a mental representation from words heard.' When the learners were confused by how to 'form a mental representation from words heard,' they were actually unable to match the sounds with the meaning represented. In other words, they had difficulties in the lexical processing of listening texts.

Goh's research (2000) also provides evidence for this statement. She divided her findings of ten LPs into three cognitive processing phases--- perceptions, parsing, and utilization, as proposed by Anderson (1995). As discussed above, Goh's list suggests difficulties at the perception stage ('do not recognize words they know') and the parsing stage ('Quickly forget what has been heard' and 'Unable to form a mental representation from words heard'). Interestingly, Goh also found the students had difficulty in recognizing words ('Do not recognize words they know') and an indication that lexical processing was also challenging ('Quickly forget what has been heard').

What is most important and seems to be in contradiction with the first problem already discussed here is the inability of many Chinese students to recognise frequent English words, which limits their LC. Gao (2008) demonstrated that 78 per cent of the participants believe that vocabulary size is the major factor influencing their listening. However, these self-reported findings are contrary to those of their actual listening task in this study. This study which focused on 33 frequently SWR in a listening text, shows that the rate of frequent SWR of L2 listeners is below 65 per cent, and their understanding the whole passage only reaches 33 per cent of the complete comprehension at most. This claim should not come as a surprise, since some previous studies have suggested that Japanese learners were unlikely to achieve high comprehension scores with their recognition rate being lower than 80 per cent of the target English words (e.g. Bonk, 2000).

In addition, Pemberton (2009) conducted six experimental studies on the most frequent words in English from BBC news items among HK (Hong Kong) intermediate-level learners. They consistently recognized at most three out of every four words. He concluded that comprehension is likely to be severely hampered if the listeners can reach only this level of word recognition, and suggested that full comprehension would be 'extremely unlikely reached with recognition rates of 75 per cent and below' (Pemberton, 2009, p108).

This discussion shows there are many factors hindering the smooth listening of L2 learners. However, this study gradually concentrates on the role of lexical processing, the basic unit in complicated language processing. Investigations such as the ones reviewed above prove that the inadequacy of SWR, especially frequently used SWR, is the main factor that hinders learners' LC.

However, insight into the internal mechanism of frequently SWR and corresponding measures to improve it is still not conclusive enough to meet the increasing demands of learners. Therefore, enhancing the ability of SWR in listening to connected English speech has become an increasingly important issue in English teaching and learning in the L2 context.

2.8 What is involved in SWR in the present study

As shown above, the review of several scholars' interpretations and discussions on different aspects of SWR (e.g., Tyler & Frauenfelder, 1987; Rost, 2002; Aitchison, 2006) seems to suggest that sufficient SWR is essential for listeners to understand spoken language.

As for SWR in the present study, one main concern is how participants' SWR can be measured. Generally, recognition involves two tasks - word identification and lexical access (matching the word to its meaning in the lexicon) or activating knowledge of word meanings (Rost, 2002, p20). Nation's word knowledge (2001, p 27) involves three areas: (1) knowledge of word form, (2) knowledge of meaning and (3) knowledge of use. I tend to focus on the fundamental category, that is, knowledge of word form, and adapt it to the purpose of my research. Please see the details in Table 2.1 below.

As shown in Table 2.1, SWR in the current research project involves three aspects: spoken form by sound, written form by sight, and word parts, including some inflections. To examine SWR in terms of these three elements, The following three aspects of word knowledge: word frequency, word category including function words and content words, and chunk recognition will be elaborated in detail in the next section. By introducing these three parameters, I mean to put the study of SWR into context and investigate this issue comprehensively. To this end, word frequency, word

category and chunk recognition are taken as central concepts as discussed below.

Table 2.1 what is involved in knowledge of a word form

Form	Spoken	What does the word sound like?
		How is the word pronounced?
	Written	What does the word look like?
		How is the word written and spelled?
	Word parts	What parts are recognisable in this word?
		What words parts are needed to express meaning?

Adapted from Nation (2001, p27)

2.8.1 Word frequency

Word frequency decides the extent of students' familiarity with spoken words, and it is very much connected with students' results of SWR. In Milton's (2009) words, 'frequency determines which words a learner is likely to encounter and how often they are encountered' (p22). Put another way, the more familiar one is with a word, the easier one finds it to identify. Therefore, the frequency of a word should be considered if one is to understand how hard the word is to recognize and how to explain the various implications from the recognition results.

2.8.2 Word category

The second aspect of vocabulary is word category, including content words and function words. Interestingly, quite a few studies on word category are closely related to word frequency, asserting that function words are of high frequency (e.g. Field, 2003; Milton, 2009; Nation, 2008; Schmitt, 2010). Milton (2009) reports that 'the most frequent words are almost always

function or structure words, which appear to carry little weight of meaning themselves, but are crucial to making grammatical and meaningful language. Less frequent words tend to be content or lexical words, nouns, main verbs and adjectives that appear to carry a greater burden of meaning in any sentence' (p23).

Schmitt (2010) observes, on the basis of the corpus word count, that function words hold the first 100 places in terms of word usage frequency in the English language, and content words are off the list of these first 100 words. Nation (2008, p 7) finds that '169 of the 2,000 word families are function words. All the rest are content words'. Different sources, such as those above, all indicate that function words are the most frequently used words in English. In this case, people may take it for granted that function words should be easier to identify than content words in CS.

It is true that function words are very high frequency words in the English language. Does it mean that function words are easier to identify than content words? Things are not necessarily obvious, as there are some discrepant opinions adverse to this suggestion. Field (2003), for instance, concludes from brain imaging evidence that listeners may experience different mental processes when encountering function words and content words. In processing a function word, a listener only matches the word with phonological sequence stored in the mind; but in processing a content word, a listener will do two things simultaneously: select a counterpart stored phonologically and acquire its meaning.

However, Field's (2003a) argument does not seem to say whether it is easier to identify function word or content word, but he believes that 'In English, function words usually carry weak stress' (p 11). This might imply that it is more difficult to identify function words in connected English speech as they are presented in weak forms. Indeed, Eastman (1993, p496) contends that 'parsing function words is a skill' that appears much later than recognizing content words. Likewise, Schmitt (2010, p55) claims that 'although function words are among the most frequent in a language, learners often find them the most difficult to learn'.

As can be seen from these studies, a few scholars hold the opinion that the recognition of function words is more difficult than that of content words in connected English speech. This indicates that a word of high frequency is not necessarily easy to segment in continuous speech.

2.8.3 Chunk recognition

This study is concerned with placing SWR in a context that is smaller than a sentence but bigger than a single word. Therefore, I have the idea of turning to the chunk as a unit of analysis to explore further students' LPs in real time.

As mentioned above, chunking was originally put forward by Miller (1956). Chunks as units of language practice may help people process language

input and output more efficiently. This also may help L2 English learners to enhance their language ability more easily. However, L1 English practitioners are different from L2 practitioners. The former's major problem in this process is most likely to be the limited capacity of short-term memory, while the latter's problem involves not only limited short-term memory capacity but also the capacity of SWR.

Secondly, chunk recognition is different from individual SWR as well as whole sentence understanding. The purpose of chunk recognition is to focus on learners' general comprehension of a whole chunk while SWR requires the identification of exact words. Singular words can convey ambiguous meanings for lack of context while the whole sentence has many words that can be changed in order. But the chunk is different from both the singular word and the sentence. It has a relatively stable meaning and contains the features of connected English speech. In Abney's (1991, p 257) words, 'the order in which chunks occur is much more flexible than the order of words within chunks'.

Thirdly, there are various ways to define the chunk 'from different linguistic levels: prosodic, morphosyntactic or syntactic, word-order factors, functional, etc.' (Colominas, 2008, p 345). For instance, 'The typical chunk,' according to Abney (1991), 'consists of a single content word surrounded by a constellation of function word, matching a fixed template,' (p257). The different definitions of the chunk offer me some practical ideas about how

to design the chunking to be used in my study in SWR, which will be shown later in Chapters 4 and 6.

The major concepts in word knowledge: word frequency, word category and chunk, as discussed above, constitute the key elements to be analysed in SWR in the present research, and inform it as to what is to be researched and explored. This research practice will be mainly demonstrated in Chapters 6 and 7.

2.9 SWR difficulties

While a number of studies (e.g. Aitchison, 2006; Rost, 2002; Tyler & Frauenfelder, 1987) have helped explain theoretically how SWR works as a process, Field's (2008) summary of the listening difficulties at word level seems to be more workable and practicable for the present study, as it segments the complex word identification process into a few concrete steps. This will serve as a starting point for the present study. Accordingly, I will consider which elements to be analysed and how this is to be done.

Field (2008, p87) holds that there are multiple causes of the learner's SWR difficulties, and focused on the following six ones:

- 1) ignorance of the word;
- 2) knowing its written form but having no knowledge of its spoken form;
- 3) confusing it with one with similar pronunciation;

- 4) knowing its spoken form but not identifying it in continuous or specific speech;
- 5) perceiving its spoken form yet not gaining access to its lexical meaning;
- 6) perceiving its spoken form but mismatching it with a meaning.

In decoding the dictation results in both the pre and the post tests to be held in Chapters 6 and 7, this approach will offer me some concrete guidance. In these chapters, I will start with these suggestions by Field (2008), and further develop my understanding and explanation about lexical segmentation and access.

2.10 Phonological features in CS and their implications for this research

To place SWR in context, it is also important to refer to the phonological system in English in order to understand utterances and conversations in continuous speech, as sounds of words may be modified when they are put in CS. That means the pronunciation of certain words in uninterrupted speech can be different from their individual pronunciation.

The implication is that learners should pay more attention to these changes in order to understand CS fully. Meanwhile, a proper understanding of how learners' phonological knowledge affects their SWR enables the present research to reveal more of learners' listening difficulties in bottom-up

processing, which is its research focus.

The Chinese language does not contain the features of CS as English elaborate. This means that Chinese learners of English can find it difficult to adapt to connected speech in English. So we may anticipate that Chinese learners might have some difficulties in identifying some of the utterances of CS which contain these features.

In the rest of this section, I will survey the major features of CS so that I can discuss how phonological features can be explored in the context of SWR. I will mainly discuss stress and its applications in CS on the basis of general knowledge about the features of CS.

2.10.1 General features in CS in English

The general features of CS in English serve as a primary guide for analysing students' performance in SWR. They include 'word stress, sentence stress and timing, reduction, strong and weak forms of words, elision, intrusion, assimilation, transition (juncture), liaison, and contraction' (Brown & Kondo-Brown, 2006, p1).

When these language phenomena appear in continuous speech, the sounds of words can be changed, and their pronunciation can be different from that when read in isolation (Dalton & Seidlhofer, 2004). Similarly, Rost's (2006, p9) observation helped inform the necessity of studying some components of word recognition; besides the phonological aspects as potential causes of

SWR difficulties for L2 learners of English, he emphasized ‘use of tone and use of stress’ as playing roles in making listening difficult.

Along these lines, the rest of this section attempts to address the phonological features in English from the following two aspects: stress in the general sense, and stressed and unstressed syllables in the specific application of stress. This perspective, hopefully, reflects the typical features of English pronunciation that are distinct from those of the Chinese language.

2.10.2 Stress as a key factor in understanding CS

Of the phonological features in CS discussed above, stress is a crucial one. As Rost (2001) notes, ‘stress is often reported to be the most problematic in L2 listening’ (p10). There are a number of studies emphasizing English as being a stress-timed language (Avery & Ehrlich, 2004; Brown, 1997; Rost, 2001). In English, ‘there is a tendency for stressed syllables to occur at regular intervals’ (Avery & Ehrlich, 2004, p73), and ‘the main stress is pulled towards an utterance’s focal syllable’ (Rost, 2001, p9).

Besides, stress in continuous speech in English is more important than just a language phenomenon. It can be the key factor causing various alterations in phonemes so that the pronunciation differs from the individual pronunciation, as summarized by Rost (2001, p9) ‘Stress-timing produces

numerous linked or assimilated consonants and reduced (or weakened) vowels so that the pronunciation of words often seems slurred.’

The functions of stress in CS discussed above contributes to my awareness of the weak forms and the strong forms of English words as well as the pronunciation differences between English and Chinese, as will be illustrated below.

2.10.3 English as a stress-timed language versus Chinese as a syllable-timed language

The discussion on the roles of ‘stress’ in CS encouraged me to further explore the differences between the English language and the Chinese language in terms of stress timing and syllable timing, with English as a stress-timed language and Chinese as a syllable-timed language. English being a stress-timed language requires each stress group to be given the same time and prominence. ‘The purpose of stress is to highlight words which carry the main information the speaker wishes to convey, and changing the stress can alter the meaning of an utterance even where the words remain the same’ (Underwood, 1989, p10). On the other hand, the Chinese language is syllable-timed, which implies that each syllable is given the same weight in time. The purpose of syllable functions as the similar role to the stress in English.

This prompted me to consider whether I needed to address spoken English from the perspective of strong forms, which are usually stressed, and weak

forms, which are usually unstressed. Being stress-timed, English features a combination of stressed and unstressed syllables in continuous speech. Actually, the presence of stress in continuous speech helps produce the rhythm of English, as the rhythm in English 'is based on the contrast of stressed and unstressed syllables' (Brown, 1997, p43). Accordingly, words in spoken English have more than two ways of pronunciation. Roach (2009) assumes that almost all the function words (such as auxiliary verbs, prepositions, and conjunctions) in English can be pronounced in two different ways: a strong form and a weak form.

By contrast, in the Chinese language, different syllables and tones are used to express different meanings. In many cases, there are quite different strokes of characters by sight, but taking the same pronunciation of the same tone. For example, 听 (Pinyin: tīng), whose meaning is listening, has many homophones but takes different meanings such as 停 (meaning: stop), 厅 (meaning: hall), 婷 (meaning: female's name), 庭 (meaning: court), 艇 (meaning: ship) etc. In fact, the number of homophones in Chinese far outweighs the number of homophones in English.

Besides, a syllable in the common speech of modern Chinese usually consists of an initial, which is a consonant that begins the syllable, and a final, which constitutes the rest of the syllable (Liu, 2002). There are four

basic tones in common speech taking the different meanings (high-level, often mark 1; high-rising, 2; falling-rising, 3; high-falling, 4).

An alteration in the tone of a syllable results in a change in its meaning. For example, the same syllable ‘ma’, when spoken in four different tones, takes four different meanings: *mā* 1 妈 (mum); *má* 2 麻 (linen); *mǎ* 3 马 (horse) and *mà* 4 骂 (curse). However, in English changes in pitch are used to emphasise or express emotion, not to give a different word meaning to the sound.

It appears that the weak form and the strong form in pronunciation are not distinctive features in Chinese. As a result, learners of English whose native language is Chinese will probably need more time and practice to get used to these kinds of phonological features. As Roach notes, ‘speakers who are not familiar with the use of weak forms are likely to have difficulty understanding speakers who do use weak forms’ (Roach, 2009, p112; Field, 2005).

As shown above, the major approaches that can be employed to uncover how CS goes through diverse alterations in pronunciation related to phonological features are: 1) the whole set of phonological features, 2) stress as one of the key factors in approaching SWR in CS, and 3) English as a stressed-timed language. I will particularly address these aspects and reveal how phonemes change in sound when they are in continuous speech,

and what relevant effects these changes bring about to LC.

2.11 Summary

This chapter has mainly reviewed the various studies on listening difficulties, different perspectives for approaching listening process and SWR in CS, and the factors to focus on in the study of SWR. It can be seen that SWR is as complex, dynamic and interactive a process as the listening process in general. This insight will take SWR as a process consisting of a few stages, so as to offer concrete and practicable guidance for my research project.

I was also concerned about which elements to analyse in terms of lexical identification in CS. Following a review of the literature, I finally decided that different elements can help account for word knowledge: word form, word category, and chunking. This perspective will enable my research data collection and analysis to be logically coordinated in an orderly fashion, as I will apply these concepts to my research. This will be demonstrated in the latter half of my thesis, especially in Chapters 6 and 7.

The final point in this chapter is an elaboration on the general features of phonological knowledge. Whilst acknowledging that there are many features in CS in English, I was particularly interested in the function of stress and some of the implications it might have caused. The discussion about the differences between English and Chinese in terms of their

pronunciation tendencies will clarify the causes of students' recognition errors.

The literature review on the listening process in relation to SWR has set up the general framework that I will adopt in my research. An attempt to understand SWR holistically in this chapter will start this research project and help better contextualise the study, as will be developed in the following chapters.

CHAPTER 3 TEACHING ENGLISH AND THE TEACHING OF LISTENING IN CHINESE CONTEXT AND OTHER L2 CONTEXTS

3.1 Introduction

In the field of teaching and research of listening, there seems to be a considerable gap between what researchers investigate and what educational practitioners do in the classroom. Chand (2007) points out that: ‘studies on listening skills have not yet reached the classroom, and research has yet to be conducted in the classroom’ (p2). One way in which researchers and practitioners may fill this gap is to investigate the mechanisms within the process of listening in relation to listening practice in the classroom in order to enhance L2 learners’ listening comprehension (LC). Therefore, this research aims to examine classroom practice from the perspective of both a researcher and a classroom teacher; it will address issues in listening from the perspective of a researcher. In this chapter, I will present an overview of English teaching and the teaching of listening in China and in other countries to provide a holistic view of the context of the present research.

As mentioned in Chapter 1, English language competency is closely related to one’s social status and success in China. Learning English in China requires an enormous investment of time for learners and their teachers (Wu, 2002) as, unlike other contexts, in China students start learning English from primary school and continue even after university. However,

since the initiation of the reform and opening up policy in 1978, English education and the teaching of listening have not had a harmonious relationship within the field of Chinese education. For most of the past thirty years, especially in the initial years when it was decided that English was to be taught to Chinese students, the teaching of listening in ELT was not given the attention that it deserved. Later, along with rapid social and economic development, the importance of listening in ELT began to be acknowledged and various measures were gradually introduced to promote listening ability. Even so, listening, as part of the teaching of English in China still needs further improvement.

To locate my research on SWR among China's university students today in the context of China's long history of English teaching and the teaching of listening, this study will discuss developments in the field over the last 30 years in terms of the cognitive aspects explored so far and the position of the teaching of listening within the overall teaching of English in China. Hopefully, this discussion will offer useful insights into how to promote the teaching of listening to Chinese university students (CUS) and how to enhance the ability of spoken word recognition (SWR) in connected speech (CS) for these students.

3.2 Perspectives on the history of English teaching in China

There are various ways of dividing the history of English teaching in China. According to Fu (1986), English teaching in China can be traced back as far

back as 1862 when the government of the Qing Dynasty decided to offer English teaching in the School of Russian Language, which began teaching Russian as a foreign language in 1727. Fu divided the teaching of English in China into the following four periods: the beginning stage (1862-1920s), the modern stage (1920s – 1949), the new stage (1949 – 1966), and the reform stage (1970s – today). Later, more research (Lam, 2002; Scovel, 1995) was conducted to investigate foreign language teaching after the foundation of the People's Republic of China, according to which, the three periods are: the first period (1949-65), the second (1966-76, Cultural Revolution), and the third period (1977 onwards). Gu (2009), in his study of English learning in China, roughly classified it into three stages: 1) the past (up to 1949), 2) the present (1949-2009) and the future (from 2009 onwards).

The above classifications of the history of English teaching in China, however, did not take into consideration the different requirements of the syllabus such as teaching objectives, methods and guidelines in the different phases over the 30 years (from 1978 onwards), and especially, the dramatic transformations after 2004 when College English Curriculum Requirements was issued by the Ministry of Education of China. Thus, we need to divide the period after 1977 further.

Considering the general situation of English teaching in different periods, along with its requirements, and bearing in mind that teaching guidelines and teaching modes change from time to time, with reference to the above

research, this chapter divides China's English teaching history into the following six stages: (1) before 1949; (2) from 1949 to the end of the Cultural Revolution; (3) from 1979 to the mid-1980s; (4) from the mid-1980s to the mid-1990s; (5) from the late 1990s to 2004, and (6) from 2004 to the present. This division will facilitate a survey of the historical events and the corresponding pedagogical measures adopted in the field of English education, with the main concern being the teaching of listening.

Broadly speaking, the following survey of China's English teaching and learning, with the focus constantly changing on different language skills in different historical periods, demonstrates that China's English education, just like any other social process, experienced the influence of interactive discourses from central government, the prevailing ideologies, economic and social development and updated cognitive knowledge in the disciplines relevant to language teaching. Also, this historical review will highlight the LPs of CUS and the reasons for these problems in the context of China's overall English teaching. It will help to formulate more effective teaching and learning to enhance learners' SWR in CS, which, as this project will later show, is central to LC.

3.3 English teaching before 1949

English teaching was provided in the English departments of a very few universities in China before 1949, when People's Republic of China was founded, with students recruited from the elite high schools whose teachers were native speakers and content-based courses (Wang & He, 2006).

At that time, not many people were privileged enough to receive an English education when China was semi-feudal and semi-colonized (Lu, 1997). There was a big gap between the few privileged students who received qualified English instruction and those who did not have appropriate teaching in the middle school. The teaching method adopted in this period mainly focused on a combination of the Direct Method and the Grammar-Translation Method (Wang & He, 2005). The schools run by the Chinese government basically employed the Grammar-Translation Method, whose objective was to cultivate the students' reading and translating competencies (Lu, 1997) while the Direct Method was used by the schools run by foreign teachers, who argued for the use of English only and classroom teaching with a focus on spoken English. This would involve listening in English as a coherent part of it. The traditional Grammar-Translation Method emphasised reading and writing competency development while the Direct Method stressed direct training in communicative skills. This practice is actually quite advanced even for today's teaching criteria in most contexts in China.

3.4 English teaching after the 1949s until the end of the Cultural Revolution (1976)

In the first few years after 1949, English and Russian were required to be taught. However, the teaching of foreign languages in China was under the influence of the ideology of the time. Very soon, from 1953 to 1957, Russian was the major foreign language required to be taught in most of the middle schools due to China's special relationship with the former USSR.

As a consequence, English was dismissed. The formerly used Direct Method was discarded as representing a capitalist teaching method (Lu, 1997). The former Soviet model of supplying a large numbers of exercises (Wang & He, 2005) widely used in China was, in essence, the Grammar-Translation Method (Lu, 1997).

Then English again found its place back into China's educational system in the late 1950s, when China and the USSR began to be detached. This lasted until the beginning of the Cultural Revolution in 1966. In these few years, the teaching methods and teaching focus took on multiple forms. The Audio Lingual Method was introduced in some primary and secondary schools; however, the Grammar-Translation Method was still dominant (Lu, 1997). In colleges and universities, the core course was Intensive Reading together with other skill-based LC, Speaking, Extensive Reading as well as some supplementary courses based on content (Wang & He, 2005). Listening was not given any special emphasis.

During the ten long years of the Cultural Revolution under the influence of extreme leftism, English teaching was severely affected. English teachers were very often those who used to teach Russian, which, by then, had been ordered to be given up due to the poor relationship with the then Soviet Union. The students' proficiency in English was very low. Many university students had to start with the alphabetic letters (Wang & He, 2005), which meant they had to learn Basic English. There was indeed some English

teaching, but most of it was strongly politicalized (Lu, 1997). This indicates that English teaching was ideologically controlled in terms of teaching methods and teaching content. As can be seen, there were no satisfactory achievements made in China's English teaching in this decade.

3.5 Restoration of English teaching: initial years after the Cultural Revolution (1977-1985)

It was only with the restoration of the entrance examination to higher education institutions in 1977 that English teaching gradually came back to Chinese education. After the adoption of the reform and opening up policy initiated by Deng Xiaoping in 1978, China entered into a brand new period. Great changes took place in every field. Chinese education underwent drastic transformations and rapid development in teaching philosophy and pedagogy. English was one of the subjects that became a top priority on the national agenda of educational development (Hu, 2005).

1978 saw the first unified primary and secondary curriculum. The syllabus was issued by the Ministry of Education of China, and some modifications in the English syllabus were made later, which were designed to strengthen the teaching of English while taking into consideration local differences (Hu, 2005). In fact, there was a large gap in English teaching to fill for both English teachers and students because of the Cultural Revolution. The Public English Teaching Syllabus issued in 1980 by Ministry of Education of China was the first university English syllabus in China, which, however,

did not exert any influence on English education until the guidelines of Experiences on Public English Teaching in Higher Education Institutions were published in 1982 (Chen, 2008). The educational authorities tried to establish rules and reintegrate the remaining sources of English teaching in China.

Generally, English teaching in the period after the Cultural Revolution was extremely poor with no effective teaching methods that could inspire the students' learning enthusiasm. The teaching of grammar was the central concern, so instructors interpreted grammar rules and students memorized and practiced them. Even graduate students could not help complaining about their low English ability, illustrated by Agnes Lam's interview with a research participant, who recalled his / her experiences of learning English when working towards an MA degree in 1983:

Though lessons were unsystematic in secondary school, I was still learning by myself. I did some reading but I did not learn much. Later in graduate school, I also study English. But when I watch English television or read an English newspaper, my comprehension was very bad. My listening was especially poor. When I was at university, we did not have cassette tapes. We had the big reels, the type used in showing movies. (Lam, 2002, p254).

The interviewee complained about the lack of authenticity in texts. Another interviewee also mentioned her experiences of finding English textbooks.

Books like English 900, Linguaphone and Essential English, which had only basic sentences rather than communication-orientated passages, were a treasure for her (Lam, 2002).

Their experiences are a genuine representation of English teaching and learning in the first few years of China's modernization process, when learners had great enthusiasm for English study but no access to learning resources such as proper textbooks, qualified teachers and audio-visual aids. No systematic instruction and learning was offered to the students. Consequently, hardly any achievements in English education were made. This was especially true with LC when listening was the language skill that received least attention. However, the initial practices in English education, though fragmented, had accumulated some experiences and promised to be improved in the near future, as will be discussed in the next section.

3.6 Gradual Revolutions in English teaching from the mid-1980s to the mid-1990s

Significant changes in the field of English education appeared from the mid-1980s along with the rapid social and economic transformations of China. A noteworthy orientation in teaching philosophy and guideline was that pragmatism began to be stressed (Hu, 2005). Behind the launch of the Primary and Secondary English Education Syllabus, the first syllabus for university English teaching and its revised edition came out in 1985 and 1986 respectively (University English Teaching syllabus for Science

Students, 1985; University English Teaching syllabus for both Science Students and Humanities Students, 1986). These two syllabuses prescribe, in accordance with socio-economic conditions and practical demands in China, three levels of language skills in order of importance: reading was placed on the first level, listening and translation on the second, and speaking and writing on the third.

More emphasis was placed on reading than on listening, because reading was the main channel through which information in English was received when there was a shortage of qualified teachers of English. At the time, there was also more need of reading as the medium through which information useful for society was obtained (Chen, 2008).

Corresponding with social stability and economic changes in China, the syllabuses for English teaching in national secondary schools issued in 1992, 1993 and 1996 respectively stressed utilitarian and progressive orientations (Hu, 2005). Their goals were the cultivation of communicative competence in English, the fostering of learner autonomy, and the development of various intellectual abilities (Hu, 2005).

After the restorative period, the general ethos of English education in China tended to be more and more utilitarian and communication orientated. Learning grammar was no longer the starting point and the major concern. English learners and English teachers came to shift their focus onto the

communicative aspect of English learning according to the syllabus. Listening, as a language skill, naturally became a necessary part of students' daily English study. In recalling how English education was proceeding at the turn of the 1990s, one of the interviewees receiving a university education from 1992 to 1996 in Lam's (2002, p254) study said:

Before university, I did not focus on improving listening; the university entrance examination did not test listening. After I entered university, the Band 4 and Band 6 examinations would test listening. So in class, teachers would let us listen to some tapes. I bought some tapes too. The university also prepared some campus radio programmes in English. Each of us had a radio.

In comparison with the first two interviewees in Lam's research, university students like the interviewee above at the turn of the 1990s undoubtedly had more favourable conditions for English language learning. They began to realize the necessity of LC, but mainly for the purpose of passing both the English tests in China and the tests required for going abroad, like TOEFL. Learners were eager to become engaged in communication, listening and talking, although they encountered various problems such as lack of a real communicative context in which to use English and inadequately qualified instructors of English.

However, there seemed to be a discrepancy between the ideals of the English education policies and the actual results finally achieved. Poor

listening and speaking abilities could very often be a hindrance for the learners in their communication. Although the syllabuses argued for the necessity of utilitarian and communicative aspects of English teaching, the practices in teaching were still tradition-based. The teaching format was still teacher-centred, without many activities, and the university students' main purpose was to pass CET-4 and CET-6, which are the shortened forms for College English Test Band 4 and College English Test Band 6. These two tests were and still are the most influential exams for university students in China. Consequently, it was not unusual for students who had acquired the CET certificates to be rejected in their applications for jobs, and the remarks like "deaf and dumb English" and "high score, low ability" were used to describe their embarrassing situations (Zhang, 2003, p4). The most prominent reason was that they were not fluent listeners or speakers of English although they might have had a large stock of vocabulary and excellent reading competency. The survey of the English learners' needs in this period (Ying, 1996; Yang et al., 1998) showed that they experienced severe inadequacy in English listening and speaking, and were eager to improve these skills.

3.7 Radical changes in English education: the late 1990s to 2004

In 1996, a project initiated by Ministry of Education of China intending to investigate the social demands and expectations of university English education led to the issue of the University English Teaching Syllabus in 1999, when China had become more economically developed and the

students themselves also felt it valuable to promote their communicative competency in English (College English Teaching Syllabus, 1999). Unlike the previous syllabuses for university English Teaching, the 1999 syllabus placed reading on the first level, but elevated the status of speaking, translating and writing to the same plane with listening. It also argued for the value of mutual communication. Listening seemed to have had no change to its degree of importance; however, the elevation of speaking was an indication that listening would be more involved and would receive more attention in teaching.

The Ministry of Education of China was also considering how to expand the scale of teaching education ranging from the fundamental level to the advanced level. Therefore, 2001 saw the Ministry of Education beginning to show its interest in English instruction in primary schools due to increased globalisation in China, and three prospective important events closely connected with teaching policy and practice: the likely World Trade Organization (WTO) membership (Hu, 2005), the hopeful bid for the 2008 Olympic Games, (Hu, 2005; Jiang, 2003; Nunan, 2003), and the urgency to improve the unsatisfactory secondary English teaching (Hu, 2005). Hence, a syllabus for primary and secondary English education was issued, requiring that English education be fully implemented in primary schools, first in the cities and then in rural areas.

Undoubtedly, enormous achievements had been made in English instruction

in China since the reform and opening up policy (Zhou, 2003). However, the 1999 College English Teaching Syllabus had its internal shortcoming and limitations. Soon, with increased research on English teaching, the syllabus issued in 1999 would receive severe criticism from some researchers for the inadequate and unscientific attention it paid to the function of listening in English teaching and learning, strongly emphasising the active role of listening in the acquisition of L2 (Liu, 2002; Wu, 2002).

3.8 Listening as a focus in English teaching: 2004 to the present

In this constantly critical and innovative environment, the College English Curriculum Requirements (For Trial), or rather the Syllabus for College English Teaching was issued by the Ministry of Education of China in 2004. This syllabus defines the goal of university English as the development of students' competence in comprehensive language use, especially the skill of LC (The Ministry of Education of China, 2004). The language competency thus acquired would enable learners to communicate effectively in their future job and life. Correspondingly, the guidelines of the new syllabus are reflected in design and test method of CET-4. The LC section of the new CET 4 accounts for 35 per cent of the whole test, a considerable increase from the original listening section, which had accounted for 20 per cent of the marks.

In essence, the syllabus places listening, speaking, reading and writing on

the same plane, and this principle asserts the urgency of the cultivation of students' listening and speaking (Chen, 2008). This development is in accordance with the rapidly developing multimedia techniques and internet popularization. The increasing convergence between the actual world and the virtual internet space brings people into an unprecedented stage of new technology. Students now have easy access to authentic aural learning sources with diverse accents and abundant messages. The combination of web-based multimedia teaching with other flexible teaching methods is highly recommended (Cai, 2005; Zhou, 2003).

The prompt elevation of the status of listening in the new syllabus helps the learner and the instructor realize its importance as a valid source for English learning and teaching. In this new teaching environment, listening is now a coherent part and one of the natural channels by which to acquire knowledge. Achievements have now been made and recognized in all aspects of L2, such as teaching guidelines, textbooks of various kinds, and teaching qualities (Hu, 2005). The teaching of listening has been promoted to the highest position since China began to adopt an opening up policy.

At almost the same time as colleges and universities were implementing the College English Curriculum Requirements (For Trial), a research team sponsored by the Ministry of Education of China was conducting a survey to revise it. Their research shows that over 90% of the teachers and students surveyed held a positive attitude towards this guiding document (Wang,

Shouren, 2008). The revision of the College English Curriculum Requirements (For Trial) keeps its original basic framework, its teaching principles and major rules, with some modifications made to the details (Wang, 2008). The requirements also highlight the level of difficulty in LC. The general requirement in listening dictates that listeners are supposed to understand English announcements and TV programmes at a speech rate of 130-150 words per minute, which is higher than the speech rate of 130 words per minute prescribed in the College English Curriculum Requirements (For Trial). The higher requirement rules that listeners should understand radio and TV programmes at a speech rate of 150-180 words per minute, somewhat higher than in the 2004 requirement. Besides, the College English Curriculum Requirements require that reading be further strengthened. It argues for the necessity of autonomous self-study and culturally permeated language study. Thus, the importance of listening was increasingly stressed. In 2007, the College English Curriculum Requirements (The Ministry of Education of China, 2007) was issued formally, and it reaffirmed the general goal of college English teaching as enhancing students' comprehensive competency in using English with a special focus on listening and speaking.

However, the two versions of the College English Curriculum Requirements tend to idealize the teaching guidelines, teaching methodology, teaching content, and the expectations of the students. In other words, the documents are more like the guide for English teaching of the future. Therefore, there is always some gap between the requirements and real teaching. Some

unsatisfactory issues in practical teaching are still in existence. Investigations involving over 400 students and 100 teachers of three Shaanxi universities (Yang, 2008) show that 77 per cent of the teachers still choose reading as their focus in teaching, 50 per cent choose writing, 30 per cent grammar and speaking respectively, and only 5 per cent of the teachers choose listening as their teaching focus; multimedia is a rarely employed and over half of the students and teachers are not satisfied with the current teaching methods. Similarly, Cai (2010, p41) concludes, from a questionnaire-based study with 1000 interviewees across six universities, that over 60 per cent of them mentioned that they had not improved their English skills after two semesters' study since they had entered universities.

As can be seen, in the process of teaching listening, innovative research as to how to teach listening in a more effective manner has never stopped. However, most of the studies are purely descriptive or theoretically driven, and there are not enough empirical and convincing studies with solid data as supporting evidence (Cheng, 2009). There are even fewer micro-studies about how the cognitive mechanism in SWR works in CS, and how to improve this process. On the other hand, most research projects do not provide direct and feasible guidance for actual teaching. Consequently, teaching and research are on two separate tracks. One of the main aims of the present study is to address this issue; through the use of classroom-based research will be conducted in this project.

3.9 Overview of L2 developments of pedagogy in other contexts

Listening is regarded as one of the four fundamental skills (listening, speaking, reading and writing) and has been taught in the language classroom for about 50 years (Vandergrift & Goh, 2012). However, it is ‘often the weakest skill for many language learners, and has received the least support in the L2 classroom’ (Vandergrift & Goh, 2012, p13). More recently there have been changes in the pedagogy of teaching listening comprehension. With the adoption of different approaches: 1) text-oriented instruction; 2) communication-oriented instruction; 3) learner-oriented instruction and 4) metacognitive instruction (Vandergrift & Goh, 2012).

3.9.1 Text-Oriented Instruction (1950s-60s)

During the 1950s and 60s, text-oriented instruction focused on recognising and understanding different parts of listening input such as individual sounds, features of phonology, key words and phrases (Vandergrift & Goh, 2012). The emphasis in that period was placed on aural perception, such as decoding the speech signal from bottom-up skills: from phonemes to morphemes to words, to phrases, chunks, sentences, to text.

3.9.2 Communication-Oriented Instruction (1970s-80s)

In the late 1970s, the audio lingual methods disappeared as the focus of listening instruction was moved to communication-oriented language teaching, intended to develop learners’ macro and micro skills for listening. It ‘emphasised the importance of listening comprehension as an active meaning construction’ (Vandergrift & Goh, 2012, p8)). In this period of

time, bottom-up processing was seen to be less important than top-down processing. This communicative language teaching continued to evolve in the 1980s, developing into more recent learner-oriented instruction. Teachers were encouraged to use authentic materials such as songs and movies and they adopted an integrated skills approach. Listening in the classroom was 'typically carried out to prepare learners for major writing or speaking outcomes' (Vandergrift & Goh, 2012, p9).

3.9.3 Learner-Oriented Instruction (1980s-90s)

Since the late 1980s, teaching instruction in the area of listening strategies was developed, which has received considerable attention from researchers (e.g. O' Malley & et al. 1989; Oxford, 1990; Vandergrift, 1999; Goh 2000). That means listeners were trained how to listen and how to use listening strategies to improve their understanding and deal with problems (Vandergrift & Goh, 2012, p11). The learning objectives of this instruction are to develop metacognitive awareness L2 listening (Vandergrift & Goh, 2012, p11). It has been claimed that ineffective listeners use a bottom-up, word-by-word approach (O'Malley et al, 1989), and that more proficient listeners are generally found to use more metacognitive strategies (Vandergrift, 1996) and have higher awareness of these strategies (Goh, 1999).

3.9.4 Metacognitive instruction (2000-present)

Metacognitive instruction was proposed by Vandergrift (2004, 2007) and Goh (2008), based on the learner-oriented approach. This is regarded as a

more holistic approach to L2 listening instruction. Metacognitive instruction ‘focuses on what learners can do to help themselves listen better when engaging with aural input’, especially supporting learners’ ‘overall listening development in varied and creative ways from the classroom or outside it’ (Vandergrift & Goh, 2012, p11). It includes strategies of planning, self-regulation and problem-solving as well as evaluating, which work directly on the incoming aural information (Vandergrift & Goh) and direct listeners to be more focused, self-aware and self-regulated as well as efficient while listening (Siegel, 2013).

Metacognitive strategies instruction is advocated by Vandergrift and Goh (Goh, 2000; Vandergrift 1999). They suggest that teaching time should be given to the development of top-down strategies and metacognitive strategies to understand acoustic input. To my knowledge, this instruction may be beneficial for L1 listeners or highly proficient L2 listeners; however, for less-proficient L2 listeners at a lower proficiency level, it may not produce the same or similar results. L1 listeners may be skilled in employing top-down strategies such as predicting and inference, as well as metacognitive strategies that help them understand continuous speech well, but we cannot assume that non-native speakers should be trained to do the same. The use of top-down strategies, such as guessing word meaning and metacognitive strategies, can only work effectively if enough of the input message has been perceived in the first place, which is the implication of this model.

Reading can be viewed as a psycholinguistic guessing game (Goodman, 1967). If reading is a guessing game, listening must be even more of one. Since effective L2 listeners are generally found to use more metacognitive strategies than do less effective listeners, researchers have tended to place more emphasis on top-down strategies than on bottom-up recognition skills (Conrad 1985; O'Malley et al. 1989; Vandergrift 1996, 1999; Goh 2000; Rost 2002).

There has been a focus on the later stage of comprehension rather than the earlier stage of word recognition in understanding connected speech, with stress placed on interpreting and making inferences from what is heard and on compensating for listening difficulties. The result of this shift has been a corresponding shift in terms of L2 teaching. Thus, training in recognising segments and words has been replaced with practice in gist comprehension and training in listening strategies. Materials and course text books that actually help learners to decode the stream of speech are very rare, with only a few examples of form-focused practice (e.g. Cauldwell 2000, 2002). As Brown (1990, p145) pointed out, this represents 'a quite extraordinary case of throwing the baby out with bathwater'.

L2 researchers have focused almost exclusively on the comprehension stage of connected speech processing, and on the strategies that learners can consciously apply in order to improve their comprehension and evaluate their learning. By doing so, they have ignored the bottom-up processes of input information that take place before comprehension and strategies come

into play. In my opinion, most L2 researchers seem to attribute listeners' use of top-down strategies to their successful understanding. In other words, L2 researchers see the use of top-down strategies as the cause rather than the result of effective spoken word recognition.

In fact, L1 reading research demonstrates that prediction helps listeners' overall comprehension rather than word recognition. 'In the fluent reader, it is through automatic activation rather than conscious prediction that connects to speed word recognition' (Stanovich, 1980, p55). In L1 listening, people often catch words without guessing them consciously as speech happens too quickly for a conscious guess to be made. However, in L2 listening, people tend to use more capacities than L1 to guess the meaning. Goh (1999) suggests that low-level information processing needs to become automatized. Some researchers (Kelly 1990; Haynes 1993 & Goh, 1997) present guesswork as a risky strategy when insufficient words are recognised in a text. Therefore, for Intermediate level Chinese USTs, there needs to be a focus on the lower information processing of LC –spoken word recognition in classroom learning in order to use top-down strategies effectively to reach a fluent understanding of connected speech.

3.95 Comparison of teaching listening in Chinese contexts and other L2 contexts

Based on the above review, we can see clearly that there are fewer similarities in the development of the teaching of listening between China and other learning contexts in the world. However, there are some

differences in the focus of teaching listening at different developing stages between them. The teaching of English in China lags far behind other contexts of the world. For most of the past thirty years, the teaching of listening in China was not given the attention it deserved, although significant changes in the field of English education appeared from the mid-1980s with the rapid social and economic transformations of China and there was an improvement in the status of teaching listening in the classroom from 2004. English was allowed to be taught to Chinese students in the late 70s, focusing on the teaching of reading and grammar. The teaching of listening has not had a harmonious relationship within the field of Chinese education, while communication-oriented instruction was popular during that period of time in other contexts. In the mid-80s, the first syllabus for university English teaching and its revised edition came out in 1985 and 1986 respectively. The importance of teaching listening in China began to be acknowledged. However, the focus of teaching listening was to answer multiple choice questions. The classroom format was a teacher-centred learning environment despite the fact that the teaching of listening in other contexts in the mid of 80s was through learner-oriented instruction with the focus of classroom interaction being learner to learner and learner to teacher. The teachers created a very relaxed and comfortable cooperation between teachers and learners, and learners themselves.

Since the Syllabus for College English Teaching was issued by the Ministry of Education of China in 2004, English teaching started to focus on improving learners' communicative skills. This syllabus defines the goal of

university English as the development of students' competence in comprehensive language use, especially the skill of LC (The Ministry of Education of China, 2004). The status of the teaching of listening in classroom started to be promoted from 2004 onwards. The teaching format, however, still focuses on question-answer, although more listening channels and recourses have been introduced. Teachers still encounter difficulties in finding an effective way to improve students' listening ability. Students still complain that their listening skills could not be improved even if wished to spend more time on it. Meanwhile, in the other contexts, more top-down strategies and even metacognitive strategies introduced in the classroom to improve learners' listening comprehension.

Based on the comparison above, we can see clearly that the development of listening instruction in China lags far behind that in other contexts as they still stay in the traditional teaching format. However, it does not mean that top-down strategies and metacognitive strategies should be emphasised in the listening instruction of the Chinese classroom. It should depend on learners' learning experiences, learning contexts and their listening problems. If Chinese listeners have not had a good command of the first stage of understanding connected speech – spoken word recognition, they will have difficulty using strategies effectively to aid their comprehension in the whole process of understanding connected speech.

To sum up, reading research (Stanovich, 1980) shows that automatic word recognition frees up processing capacity and allows the listener to use top-

down strategies to enhance their comprehension. Although prediction, inference and metacognitive strategies should also be emphasized to understand connected speech well, L2 listeners still need to develop skills in phonological decoding and spoken word recognition. They need to firstly improve their fundamental knowledge of spoken word recognition and promote their awareness of the features of connected speech; word recognition aids comprehension rather than the other way round. ‘Word recognition is the essential operation in bottom up processing’ (Rost & Wilson, 2013, p12). There has been very little research into or teaching of spoken word recognition in the last fifty years, so we cannot access more ideas about the importance of word recognition in L2 listening. It is clear that an exploration of spoken word recognition in L2 listening is necessary and important to help L2 listeners at intermediate level to improve their LC.

3.10 Summary

The historical review of English education in China, especially the teaching of LC shows that listening, as an indispensable part in this process, has largely been ignored. However, the teaching of listening in recent years has attracted increasing attention. There has been encouragement for listening to be elevated to the same level as the other language skills such as reading. Even so, the research and teaching of LC remains an issue to be further addressed and investigated theoretically and practically. This is all the more true of the SWR in CS in China’s university students.

There is a long way to go to explore further the teaching of listening in China for both practitioners and researchers, and more importantly, to provide feasible, practical and effective pedagogy in the teaching of listening to enable CUS to reach sufficient LC. Starting with this point, the present research project is intended to explore the internal workings of the SWR process, which is central to LC both theoretically and empirically, and to find ways of bridging the gap between this process and the final goal of LC in university contexts in China. In the next chapter, there will be a discussion about how this research project would be conducted.

CHAPTER 4 RESEARCH METHODOLOGY

4.1 Introduction

This chapter presents the research questions and the research paradigm, including my ontological and epistemological views as a researcher. It discusses the rationale for a mixed methods classroom-oriented approach to my research. It also discusses the theoretical issues and practical matters involved in designing the data collection instruments for this research, as well as their respective strengths and weaknesses. The chapter outlines the whole research process which includes a pre pilot study, a pilot study and a main study, and examines the application of each research method in this process.

4.2 Overview of the study

As Chapter 2 shows, spoken word recognition (SWR) in connected speech (CS), as a changing process, involves many inter connected and interpenetrated factors and phases. The studies of this area in relation to Chinese university students (CUS) are problematic, as they seem to identify different listening difficulties from one another. Besides, the proposed cause for these difficulties seems to vary from study to study (See Chapter 2). In accordance with the aims and the literature review, this research was designed to address the following questions:

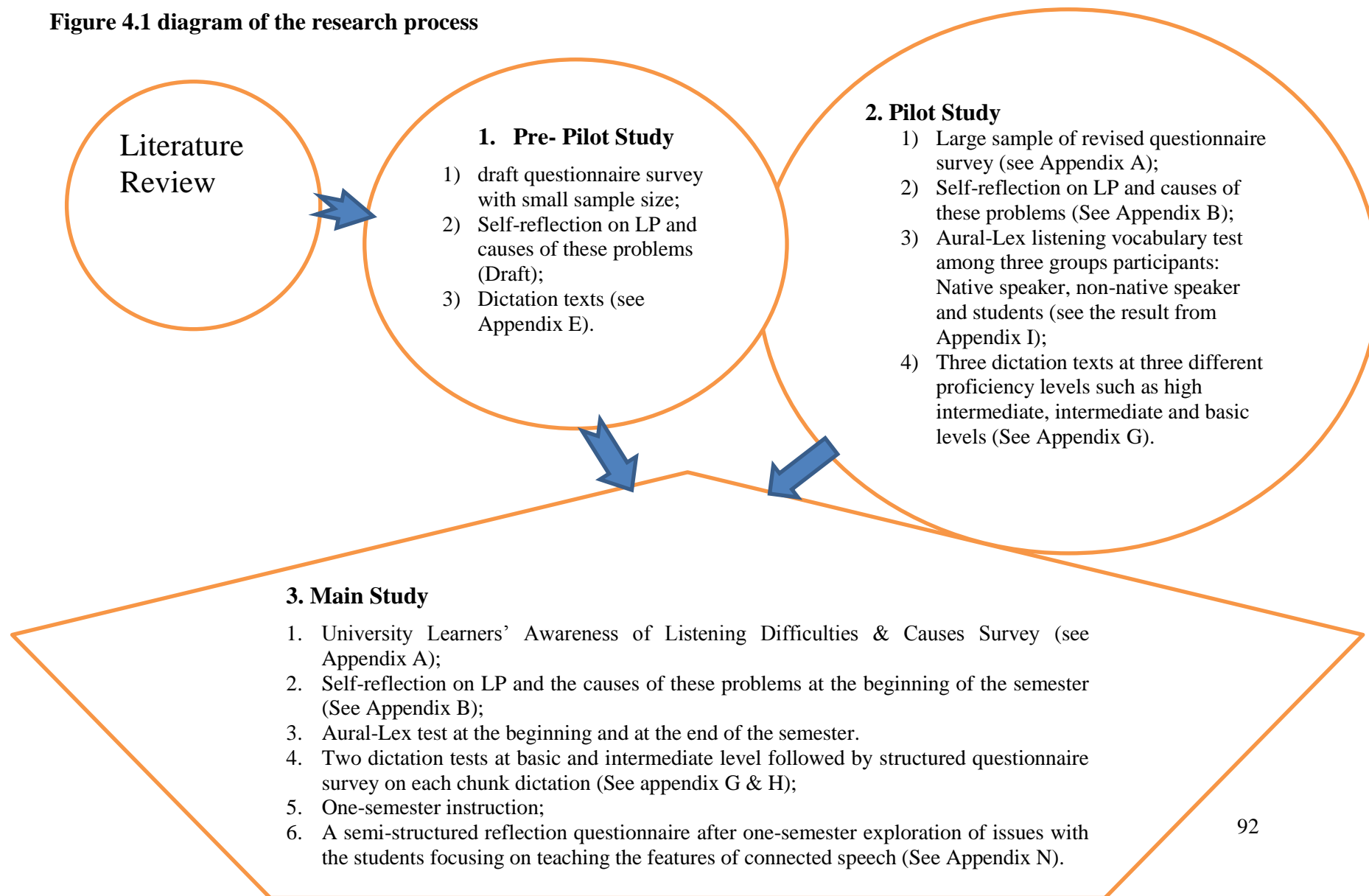
1. What are the major difficulties in LC experienced by Chinese university learners at intermediate level? What causes such difficulties?
2. What are the recognition of content and function words in singleton of K1 after one semester English study?
3. What are the major listening problems that Chinese university learners at intermediate level still experience after a one-semester shared learning focus on listening issues? What causes such difficulties?

These research questions were intended to provide a thorough understanding of SWR in the listening process of CUS at intermediate level, and the impact of a one-semester shared learning on participants' SWR in CS.

4.2.1 The diagram of the research process

My research process involves three stages: 1) pre-pilot study; 2) pilot study and 3) main study. For more details, please refer to Figure 4.1.

Figure 4.1 diagram of the research process



4.2.2 Research paradigm: Pragmatism

The core of my research journey was to choose an appropriate research paradigm to explore my research questions and problems in a more complete way. A paradigm is ‘a Net that contains the researcher’s ontological, epistemological, and methodological assumptions’ (Guba, 1990, p17). According to Hitchcock and Hugher (1995, p21, cited in Cohen et al., 2000), an ontological assumption determines the assumptions of epistemology and then influences methodological considerations, issues of instrument choice and data collection. This suggests that there is a need to clarify the ontological and epistemological assumptions in the context of the present research on SWR in CS.

I concentrated on the ontology —the nature of the present research subject— identifying LPs in CUS and the causes of these problems as well as participants’ SWR in CS, and their perceptions and reflections on their LPs. A focus on the research subject enabled me to address the problem fully by employing the different research approaches available to understand the problem (Rossman & Wilson, 1985). Based on the research questions and the nature of the project, I turned to pragmatism as it provides ‘a philosophical underpinning’ for mixed methods which integrate quantitative and qualitative data in research (Creswell, 2013, p10). The mixed methods approach ‘are premised on pragmatism ontologies and epistemologies’ (Cohen, Manion & Morrison, 2011, p23), a view also echoed in the work by Isaacs (2013).

A pragmatic paradigm seems to be concerned with the practical value in selecting methods for research questions rather than with metaphysical assumptions, as ‘purely epistemological issues should be of major interest to social science research methodologists—that is the province of philosophers’ (Morgan (2007, p 68). Similarly, Morgan clearly suggests that, in a pragmatic paradigm, ‘we need to devote equal attention to studying both the connection between methodology and epistemology and the connection between methodology and methods.’

I situate my own philosophical position as a pragmatist holding the view that ‘truth is what works at the time’ (Creswell, 2013, p11) and embraced the idea that pragmatism is ‘practice-driven’ (Denscombe, 2008, p 280). In the context of my research, the nature of listening ‘takes place in the hidden reaches of the learner’s mind. It is not tangible in the way that speaking and writing are, and a listening text is not easily manipulated like a reading one.’ (Field, 2008, p1). My research on SWR in CS, as a part of LC, is a dynamic process, as has been reviewed in chapters 1 and 2. This process includes many links, ranging from verbal output and input to social actors like speakers and listeners. It is a complex phenomenon in which some aspects would tend to go ignored if examined from either a quantitative or qualitative stance (Isaacs, 2013). It is very difficult to reach an understanding from only one perspective on such a complex phenomenon. It is therefore necessary to describe spoken texts and to research participants’

perceptions and self-reports on LPs both quantitatively and qualitatively.

To find answers to the research questions, I designed and formulated corresponding methods based on the nature of listening and my epistemological stance as a pragmatist. As Johnson and Onwuegbuzie (2004, p17-18) suggest, ‘research methods should follow research questions in a way that offers the best chance to obtain useful answers.’ A mixed methods approach, combining quantitative and qualitative strategies, was therefore used in this study as it ‘provides a more complete understanding of a research problem than either approach’ (Creswell, 2013, p4). In the next section the question of how and why mixed methods can be merged will be discussed.

4.3 Strengths and weaknesses of mixed methods research

As a coin has two sides, a mixed methods approach has its strengths and its weaknesses. There are a number of weaknesses associated with it, but its strengths outweigh its weakness. Firstly, it requires researchers’ skills in both quantitative and qualitative research. This is no easy task for a single researcher. Secondly, it demands ‘many design, implementation, and analysis procedures, which is more time-consuming’ (Christensen, Johnson & Turner, 2011, p381). This means that a mixed methods approach would be more complicated than a single research approach, employing either quantitative or qualitative methods. Thirdly, a mixed method approach requires the researcher to be able to reconcile possible contradictions in the results generated by the analysis of data of a different nature.

However, its strengths outweigh its weaknesses. Firstly, a mixed methods approach can ‘bring out the best of two research paradigms, thereby combining quantitative and qualitative research strengths’ (Dörnyei, 2007, p45). In a similar vein, Denscome (2010:41) states that ‘the use of more than one method can enhance the findings of research by providing a fuller and more complete picture of the phenomenon being studied’. In support of this view, Isaacs (2013) holds that mixed methods can produce full and comprehensive empirical results related to the research purpose. Accordingly, it seems that the strengths from both quantitative and qualitative research traditions can be complementary and the combination of both types of research might add more credibility to the findings.

Secondly, a mixed methods approach can produce data from an insider’s perspective and an objective outsider’s perspective. (Christensen, Johnson & Turner, 2011). That is to say, findings from mixed methods show not only the opinions and perceptions from participants and researchers themselves but also the objective evidences from statistical data, as the mixed methods approach can ‘‘provide rich, detailed, subjective data and objective quantitative data in the same study’; thus, the mixed methods approach can ‘help provide multiple types of validity in a single study’ (Christensen, Johnson & Turner, 2011, p381).

Thirdly, the findings can be corroborated or questioned through comparing or contrasting data produced by different methods so that various viewpoints are possible from divergent findings (Armitage, 2007). It can improve the generalisation, that is, external validity of the findings, ensuring triangulation.

4.4 Research design

A research design aims to provide a framework for data collection and analysis procedures (Bryman, 2008). The choice of a research design is ‘based on the nature of the research problem or issue being addressed, the researchers’ personal experiences, and the audiences for the study’ (Creswell, 2009, p3). In this study, good research designs from my literature review are also taken into account in my research design to draw some advantages of research instruments. It reflects researchers’ particular selection of paradigm to find out the answers to research questions from holistic perspective completely.

The research design for this project was planned to be a mixed methods approach whereby the quantitative research instruments such as questionnaire survey, pre and post tests on phonological vocabulary and SWR in dictation texts were the primary focus to identify participants’ LPs and the causes of these problems. On the other hand, the qualitative results of participants’ self-reflection on LPs before and after TP, the causes of these problems and effective learning strategies of LC were used to support

the quantitative methods. This combination of methods aimed to gain both general and deeper insights that shed light on the research questions to identify LPs in CUS and the causes of these problems. |One-semester's work was used to identify whether there was a positive impact on improving L2 learners' SWR in CS, and to find effective listening teaching and learning methods to improve their comprehension in CS. In the remainder of this section, an introduction to the research context, participants and methods is presented.

4.4.1 The context

I decided to do my fieldwork at one of the Chinese universities, S University, where I used to work as both a researcher and an English teacher. It is a well-known and medium-sized (around 10,000 students) public university in S City, G province, in the People's Republic of China. S University is 'devoted to nurturing aspiring, knowledgeable, determined and promising students. Its mission is to align the university with international standards, to help its students use English as a tool to explore Western culture, and to expand its students' horizons by teaching and encouraging critical thinking' (Liu, 2007: 114).

With the recommendations of the 'National Writing Project at University of California, Berkeley', S University carried out an English Enhancement Programme in 2002. It focused on 'increasing the competences of our university students' English proficiency to an international level, simultaneously creating a model that directly contributes to English teaching

and learning reforms throughout China' (Liu, 2007, p115). Based on a newly developed curriculum, 'specifically developed placement tests' were given (p115). The tests consisted of five language skills including listening, speaking, reading, writing and grammar. Each skill was allocated 20 marks out of a total score of 100. After taking the placement tests, the first-year over 1000 undergraduates were placed at five different levels of English proficiency at or above the following scores (see Table 4.1). The levels were identified as preparatory, foundation, intermediate level, high intermediate level and advanced level.

Table 4.1 Break-down of placement test and different proficiency levels

Test Items	English Proficiency Levels	Cutting scores of proficiency levels: at or above the following total score
Listening Speaking Reading Grammar Writing	Preparatory	0
	Foundation	46
	Intermediate Level	61
	High Intermediate Level	77
	Advanced Level	92

4.4.2 Participants

The research participants in this study were selected randomly from the first-year undergraduates who were placed at intermediate level (Level 1) based on a large-scale placement test carried out in September 2009. The selection is random as all the students were free to choose an English

teacher among native and non-native speakers. The reason I selected first-year undergraduates as my participants was that more than three-quarters (75%) of the first-year undergraduates were placed at intermediate level based on their results of the placement test; this represents the majority of the first-year undergraduates. It is a reflection of the general situation regarding CUS in the study of English.

Different participants took part in the research project, although they were all Chinese speakers who were studying English at an intermediate level. Firstly, I conducted a pre-pilot study (see Table 4.2) with two Chinese students in the UK, one being an undergraduate student and the other a PhD student, and four students from my field work in China, two of whom were undergraduate students and the other two postgraduates. Then, in the pilot study (see Table 4.2), three intact classes at intermediate level were randomly chosen, with 105 students in total and each class having 35 students at most. To measure the validity of the Aural lexical test (see section 4.5.2) before the main study, which was used to examine how far the participants had mastered listening vocabulary among the following five frequency bands: 1-1000; 2000, 3000, 4000 and 5000, three native English teachers and four Chinese English teachers were invited to take part in the pilot study. Each Chinese teacher had had overseas learning experience in the past.

4.4.3 Selection of methods

It was decided that the best way to seek to answer the research questions was by using a mixed methods approach because of the complex nature of the process of listening: 1) connected speech is encoded in the form of sound; 2) it happens in real time in a linear way without any chance or time to backtrack or review; and 3) we cannot observe the exact processing mechanics happening in listeners' minds. Any single research method cannot provide complete understanding of the nature of listening involving the listener's linguistic knowledge such as phonology, lexis, syntax, semantics and discourse structure, and non-linguistic knowledge of the listening topic, about the context, about the anxiety and general knowledge. More importantly, a single research method cannot ensure reliability and validity of the data results. Vandergrift claims that researchers of L2 listening 'should use multi-method assessment to collect convergent data' as reliability can be enhanced when data from more than one source are triangulated to provide a more complete picture of the construct under investigation (Vandergrift, 2007, p192-193).

The employment of mixed methods enables a holistic view of inclusion to examine multiple factors and perspectives, and take into account the different views and knowledge of participants and their listening performances. Three perspectives will be explored to answer my research questions: 'What are the major difficulties in LC experienced by Chinese university learners at intermediate level? What causes such difficulties?' These perspectives will offer a holistic picture of L2 listeners major

problems in LC: 1) learners' perspectives, which comprised the learners' perception and reflection of their listening difficulties, using i) a questionnaire survey on LPs and the causes of these problems and ii) learners' self-reflection reports on their LPs and the reasons for these problems at the beginning and at the end of the semester; 2) learners' listening performance, including (i) phonological vocabulary tests at the beginning and the end of the semester and (ii) two dictation text transcriptions; 3) classroom practice of working with students for one semester.

Findings from these three perspectives will provide a better understanding of Chinese university students' (CUS) listening problems at intermediate level. Details of research instruments to be selected and formulated to answer the research questions within a mix-method approach are summarised in Table 4.2 below.

In my main study, data were gathered from the students who had been promoted to the intermediate level in the winter term after they had studied English for one term. Two intact classes with 42 students in total were randomly chosen from the pool of classes for intermediate students. They were willing to participate in my research.

Table 4.2 data collection procedures

Phases	Time	RP	Instruments	Informants	Purpose
Phase 1	Between July and August in 2009	Pre-pilot study	<ul style="list-style-type: none"> • Semi-structured questionnaire on listening difficulties; • Aural lexical test; • Listening tasks -dictation for different research purposes; • Immediate retrospective verbal report. 	<ul style="list-style-type: none"> • Two students in UK, one undergraduate and one PhD student; • Two first-year undergraduates; 2 postgraduates in China 	<ul style="list-style-type: none"> • Find out limitations of each instrument. • Explore whether SWR was the non-native speaker's problem rather than native ones. • Provide some feasible and practical ideas for my real data collection.
Phase 2	Between October 2009 and January 2010	Pilot study	<ul style="list-style-type: none"> • Semi-structured questionnaire on listening difficulties; • Aural-Lex test; • Listening tasks of dictation and transcriptions for different research purposes; • Verbal protocols such as immediate introspection and retrospection on those above listening tasks were carried out in pairs and groups; • Respective oral presentations. 	<ul style="list-style-type: none"> • 105 CUS at intermediate level in South Eastern China; • three native English teachers ; • four local English teachers. 	<ul style="list-style-type: none"> • To test research instruments employed in the different phases of research. • To find out the weakness and merits of those research instruments. • To make some adjustments and correction for research instruments. • To calibrate the research instruments to find out the answers to research questions.
Phase 3	Between March 2010 and June 2010	Main study	<ul style="list-style-type: none"> • Semi-structured questionnaire on listening difficulties and causes; • Phonological vocabulary; • Two pre and post dictation texts with questionnaire at basic and intermediate levels; • Pre self-report on LPs and reasons for these problems; • Post-dictation questionnaire survey 	<ul style="list-style-type: none"> • 42 CUS at intermediate level in South Eastern China 	<ul style="list-style-type: none"> • To gain holistic and objective data on major difficulties and the causes of these problems. • To explore the extent of the effects of spoken word and chunk recognition on LC. • To explore the extent of the effects of one-semester instruction on students' LC in CS.

RP= research phase

4.4.3 Ethical considerations

In line with the revised ethical guideline of British Education Research Associations (BERA, 2004), I first obtained approval from the Research Ethics Committee at the School of Education in August of 2009 and started my fieldwork in late September in 2009. In the process of my research, I observed the principles stipulated in BERA. According to BERA (2004, p7), ‘educational researchers should operate within an ethic of respect for any person involved directly or indirectly in the research they are undertaking.’ I realized it was important to pay respect to my participants’ privacy and personal choices.

Accordingly, in my study, I gained informed consent from each participant. Information including a brief description of the research purpose and expectation of participants’ responsibility was explained orally in Chinese so that the participants fully understood the research process, their responsibilities and rights. With this information, they were free to make their decision as to whether to participate. A consent form in both English and Chinese was then given to each participant for them to sign and indicate their willingness to participate. Also the consent form explained how the data would be used and to whom it would be reported. Last but not the least, the participants were also informed that data would be treated confidentially and their names would be anonymised in any forms of report, and they would be withdrawn from the study at any time and without any consequences.

As for access to the research institution and participants for the present study, I did not

anticipate any problems as I conducted the data collection at the university where I had taught and researched, which facilitated easy access to the fieldwork site and the research participants.

Before distributing the survey, I informed the students that the survey was voluntary and they could choose not to participate. Informed consent was sought from all participants in the study. Students were provided with information about the research, and were given the opportunity to seek clarification of any issues related to the research. Students were also reassured that their anonymity in the research would be maintained.

4.4.4 Researcher roles

Before embarking on my data collection, I reflected on my dual roles as both a researcher and a teacher of English and on the ethical implications that the fieldwork would involve for the research setting and the participants who took on double roles too: research informants and students.

Firstly, in this study, the potential issue resulting from my positionality was that the participants might feel obliged to cooperate: they might have been worried that I would be assessing them by whether they participated in my research or not and that they might receive a low score for their English course if they decided not to participate. I had not realized this issue until I began the pilot study. In order to reduce the anxieties of the participants, I deleted from the questionnaire survey the section concerning participants' personal

information such as name and student ID number. Therefore, the questionnaires were kept anonymous in the main study in order to ensure that the participants would express their views without any hesitation or fear of being identified or penalised.

Secondly, holding double roles in the process of data collection, I encountered the research issue of role bias as an insider researcher. It was difficult for me to separate the role as a teacher of English from that of a researcher. Subsequently, I acted as an insider researcher. Research bias could arise due to the lack of a clear boundary between the roles of being both a researcher and a teacher of the participants. My personal beliefs and practice as a teacher of English would unavoidably or unconsciously influence my students' perception of their English learning and assessment of my intervention, as I would have gradually established rapport with them. Later, in my fieldwork, for instance, I was faced with an ethical dilemma when the students asked me such questions as how to promote listening comprehension as they had spent a lot of time on it. As a teacher, I had the obligation to answer them. However, as a researcher, I was reluctant to let them know my answers since this was what I was exploring with their participation. I decided not to impose my understandings on them but to keep questions of this kind open to discussion and help them summarise some useful ideas. Thus, I minimised my influence in the process of teaching and data collection.

Thirdly, similar to the researcher's assumption of dual roles, the participants held dual roles as both students on the English course and the participants in the research. While improving

their English as students, they might be more sensitive to their performance and their opinions as research participants than non-participant students. Thus, they were more liable to change their behaviour or thoughts. As this was beyond my control, I took into account their dual roles in analysing the results of the study.

Lastly, I was very familiar with my research setting as I had worked there for over 10 years. Researchers' familiarity with the research context could bring about different results in research. As Kleinman and Copp (1993) suggest, familiarity helps researchers to save time and energy on the background of both research sites and research participants. However, familiarity can also push researchers to reach some conclusions without sufficient consideration. This implies that I, as a researcher, might have established certain schema about the research participants and research site even before I began my observation, thus certain bias in the research might result. This seemed to be inevitable, so I remained alert to my subjectivity and helped my participants to express their opinions fully without any influence of my own ideas. I tried to avoid mentioning their listening problems and causes of these problems in the process of data collection and classroom instruction, giving their more space to reflect on their listening problems and reasons for these problems based on their own learning experience and their perceptions.

In discussing the researcher's roles, I started with my positionality as both a researcher and a teacher, elaborated on the ethical issues thus caused and explained the strategies I adopted to

deal with these issues. It seems that research bias was unavoidable and I therefore needed to be well aware of it and take measures to counterbalance it.

4.4.5 Research instruments

The employment of appropriate methods depends upon the research questions (see Section 4.2 above). Therefore, it is crucial to identify and gain insights into the strengths, shortcomings, and limitations inherent in the research devices that are intended for use.

To ensure data triangulation of the research instruments, which means that my data come from more than one resource, the data collection for this study involved three phases 1) pre pilot study; 2) pilot study; and 3) main study. The data were collected from the following six sources: (1) a questionnaire survey on LPs and the causes of these problems; (2) AuralLex phonological vocabulary tests at the beginning and at the end of the semester; (3) students' self-reflection reports on their LPs and the reasons for these problems at the beginning and at the end of the semester; (4) two dictation texts at basic and intermediate levels at the beginning and at the end of the semester, with 36 chunks altogether and each chunk followed by a structured questionnaire on the reasons for listening difficulty in recognizing the aforesaid chunk; (5) one-semester instruction on LC; and (6) the students' reflections on one-semester study. All this helped strengthened the reliability of the results. Details of research instruments to answer the research questions and research purposes within a mix-method approach are summarised in Table 4.3 below. The combination of research instruments used for data collection is analysed and discussed in this section.

Table 4.3 Summary of mixed research instruments and corresponding research questions

Research Questions	Research instruments in a mixed methods approach
1. What are the major difficulties in LC experienced by Chinese university learners at intermediate level? What causes such difficulties?	From the perspective of participants' perceptions on listening problems: 1) University Learners' Awareness of Listening Difficulties & Causes Questionnaire Survey
2. What are the content and function words recognition of singleton in K1 after one semester English study?	2) Self-reflection on LPs and the causes of these problems at the beginning of the semester. From the perspective of participants' listening performance 1) Aural Lexical vocabulary test at the beginning of the semester. 2) Two dictation tests at basic and intermediate level followed by structured questionnaire on each chunk dictation at the beginning of the semester. • Structured questionnaire survey on each chunk dictation at the beginning of the semester.
3. What are the major listening problems that Chinese university learners at intermediate level still experience after a one-semester shared learning? What causes such difficulties?	• Self-reflection on LPs and the causes of these problems after one-semester instruction.

Questionnaires

Questionnaires with both structured and unstructured questions are commonly used in the social sciences to explore data comprehensively. Issues should be addressed concerning the

design of effective questions, choices for questions and questionnaire formats so that the questionnaires will be easy for research participants to understand whilst being easy for researchers to code, analyse, and classify.

In the process of my research, questionnaires were the most frequently used method. In designing questions, I took ethical issues into consideration and tried to avoid any possible invasion of privacy, any possible sensitive issues or my personal beliefs on some research questions. On this basis, in accordance with my research purposes, participants and conditions, I designed and employed semi-structured questionnaires and structured questionnaires with particular attention to the following two principles: 1) to include different kinds of questions, both closed-ended and open-ended and 2) to employ questionnaires in the pre-pilot and the pilot study to be adapted and revised into closed questionnaires for use in the main study. Firstly, the questionnaire is likely to reduce researchers' interference with the participants' responses, as the subjects work individually without any pressure. The results from this process are thus direct and easily accessible. It offers the advantage of being relatively objective as it keeps the participants on the subject (Cohen et al., 2000; Bryman, 2004).

Secondly, questionnaires used in this research contained both open-ended and closed questions in different research phases: 1) closed and open-ended questions in the pilot study, and closed ones used to identify participants' LPs and the causes of these problems in the

main study; 2) chunk transcription of dictation texts, with closed questions following each chunk; 3) both closed and open-ended questions to gain feedback on one-semester English study, with some structured and some unstructured questions.

The questionnaires were purposefully set to contain different forms of questions to explore more possible answers and thus contribute to the validity of the data they generated. The attempt to include both closed and open questions in the questionnaires was based on the assumption that these two kinds of questions each have their own weaknesses and strengths, and should be complementary.

Closed questions are easy to complete and code, and they ‘do not discriminate unduly on the basis of how articulate the respondents are’ (Wilson and McLean, 1994, p24), and ‘can generate frequencies of response amenable to statistical treatment and analysis, and they also enable comparison to be made across groups in the sample’ (Oppenheim, 1992, p115). However, closed questions, as pointed out by Oppenheim (1992, p115), do not allow the participants to add any remarks, qualifications and explanations to categories, thus ‘the categories might not be exhaustive’.

To compensate for this drawback, open-ended questions were therefore introduced and designed in my questionnaires, as open-ended questions are likely to enable participants to write their own opinions, and the limitations from the pre-set categories can thus be avoided (Cohen et al., 2007).

Accordingly, questionnaires with both open-ended and closed-ended questions were used in this research. Moreover, even well-structured questionnaires such as the one following each chunk underwent a few modification stages from individual interviews to semi-structured questionnaires before becoming a well-structured questionnaire used in the main study. In this way, the questionnaire surveys would alleviate the weaknesses from both open-ended questions and semi-structured questionnaire, while offering an in-depth investigation into research issues.

Related to the point above, at the beginning of the semester, my questionnaires were utilised in the phases of a pre pilot study and a pilot study, through which they were revised and refined several times before the main study. A pilot study has several functions which mainly increase the reliability, validity and practicability of the questionnaire (Wilson and McLean, 1994), and can also identify commonly misunderstood or non-completed items (Cohen, Manion, & Morrison, 2000). As Bush (2003) suggests, the design and testing of a questionnaire are crucial components of the premise of reliability. The importance of a pilot study is relevant to the closed and open-ended questionnaire items in this research as more ideas were gained from the informants, which built a good foundation for the structured items in the questionnaires in the main study. As Cohen et al. (2007) argue, in order to observe the patterns in a closed and well-structured questionnaire, 'a pilot is needed to ensure that the categories are comprehensive, exhaustive and representative' (p324). The process of the pilot study proved to be a necessary step through which the questionnaires were developed to contain a full range of possible responses for the respondents to select from.

Questionnaires at the beginning of the semester

The questionnaire survey was first designed in English and then translated into Chinese in order to accommodate to the needs of the lower level students and collect their accurate perceptions on their LPs and the causes of their LPs. The drafting of the questionnaire was a long and careful process. I referred to Goh (1999, 2000) and Gao (2008)'s questionnaire survey and then designed my own. I produced a set of listening difficulty statements for use in the questionnaire, with additions based on the information from personal (written) statements by my students in the pilot study. The survey was initially pre-piloted and piloted, edited, added to and revised prior to the main study (details please see section 4.6.2.1). The questionnaire survey in my study was developed into closed questions based on the pre-pilot and pilot study to explore university learners' awareness of listening difficulties and their causes at the beginning of the semester.

The draft was sent to my supervisors and other teachers with a similar background for checking. After having obtained their feedback, I made a number of changes to formatting, the wording, and layout in order to achieve clarity, concreteness, and completeness, and to add to the reliability of the instrument.

The questionnaire used in the main study contained a series of questions through the 5-point Likert scales which are 'semantic differential scales' (Cohen et al, 2007, p325), with one being 'always' and five 'never'. The Likert scales are useful 'as they build in a degree of

sensitivity and differentiation of response while still generating numbers' (Cohen et al, 2007, p325). In the pilot study, the incorporation of open-ended questions invited honest personal comments from the respondents, and their use was aimed at capturing authenticity, richness and depth of responses, which is the major feature of qualitative data (Cohen, Manion & Morrison, 2000). Open-ended questions also provided qualitative data that added depth to the study. However, as they could often demand too much of the participants' time, the majority of the questions in the main study were closed-ended ones.

The final survey contained three sections. The first section was about students' personal information and the participants' English learning experiences in their primary and secondary schools. Section II was concerned with students' perceptions on English listening. The last section, which had ten statements of LPs, focused on the students' perceptions of listening difficulties. Each statement was followed by several choices for the causes of LPs. (For details please see Appendix A).

Self-reflection questionnaire at the end of the semester

The self-reflection questionnaire after one-semester study contained two parts, which integrated structured and unstructured questions. The first part of 14 statements was concerned with participants' self-reflection and assessments on the contents of one-semester instruction to measure how far the participants' LC had /had not improved. Their responses were measured on a 5 point Likert scale that ranged from 'Have not improved at all' (1) to

‘Have improved a lot’ (5). The second part of four open questions was intended to probe students’ LPs, the causes of these problems, the aspects they would focus on in the study in the future, and the effective learning strategies and listening exercises that they thought would be helpful to improve their LC. After one-semester study, the students were immediately asked to finish this questionnaire survey, which was bilingual.

Aural-Lex: Aural Vocabulary Size Test

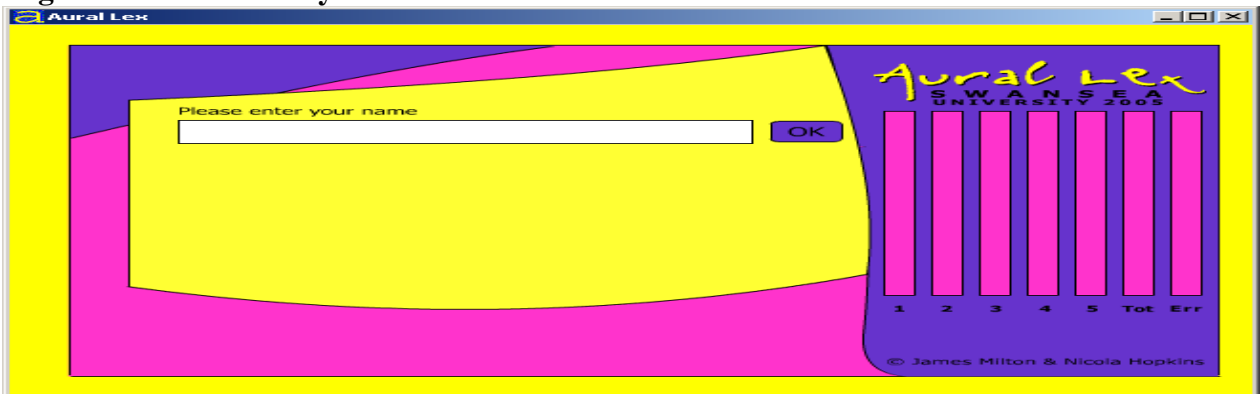
Having a clear picture of what we are intended to measure is the fundamental for designing a test. The term construct refers to the thing that we are trying to measure. Construct validity refers to whether ‘a test that somehow measures that construct’ (Buck2001, p1). In this research, the construct is the size and breath of Chinese university students’ listening vocabulary. The Aural Lexical Test (Aural-Lex), (Milton & Hopkins, 2005) is an aural lexical test of listening vocabulary, which is employed to measure students’ phonological vocabulary breadth, that is to say, measuring students’ word knowledge in terms of how a word sounds out of the most frequent 5000 words in English. Therefore, Aural-Lex test actually measures the learners’ breath and size of phonological vocabulary recognised in English at the same time it can find out listeners’ weakness in recognising the most frequent 5000 words.

Through a pilot study with native speakers, local English teachers and CUS at intermediate level, the findings show significant differences among them in the most frequent 5000 words;

It indicates that this test can distinguish different proficiency levels, therefore this test is applied to CUS.

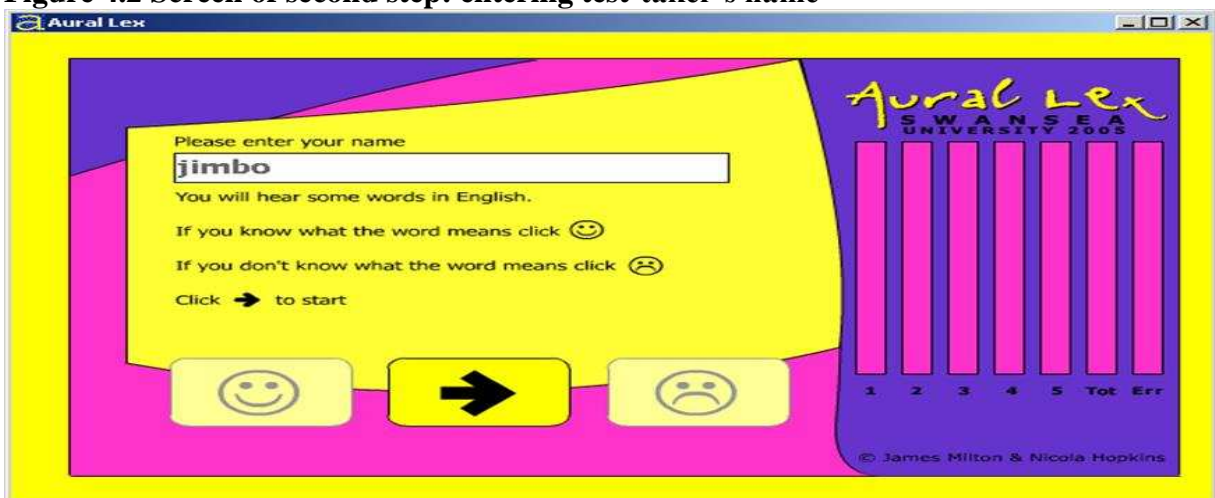
This test was conducted at the beginning of the semester and at the end of the semester, in an attempt to see how effective the training was in promoting students' SWR. Aural-Lex was designed by Milton and Hopkins as a phonological vocabulary test to estimate the phonological size of learners' vocabulary. It tests the knowledge of 1000-5000 word frequency bands in English, and estimates overall knowledge of this vocabulary. The frequency bands are based on the work of Hindmarsh (1980) and Nation (1984). It is a Yes/No test. According to Milton and Hopkins (2005, p94), 'in Aural-Lex, the screen gives the learner a button in order to hear the test word as often as is needed to form a judgement'. In the process of the test, students have to make a choice to 'indicate whether they know each word. There are 20 words from each 1000 word frequency band and a further 20 pseudo-words allows the score on the real words to be adjusted for guessing and overestimation of knowledge. The tests give an overall score of words known, by sound out of 5000' (Milton and Hopkin, 2005, p94). The following shows the details of Aural-Lex test, as well as how it works step by step. First, the introductory screen, as shown in Figure 4.1, appears.

Figure 4.1 Introductory screen



Then the test-taker enters his/her name or ID in the name space and clicks OK when everything is right. After this, the test screen will present such information as that shown in Figure 4.2.

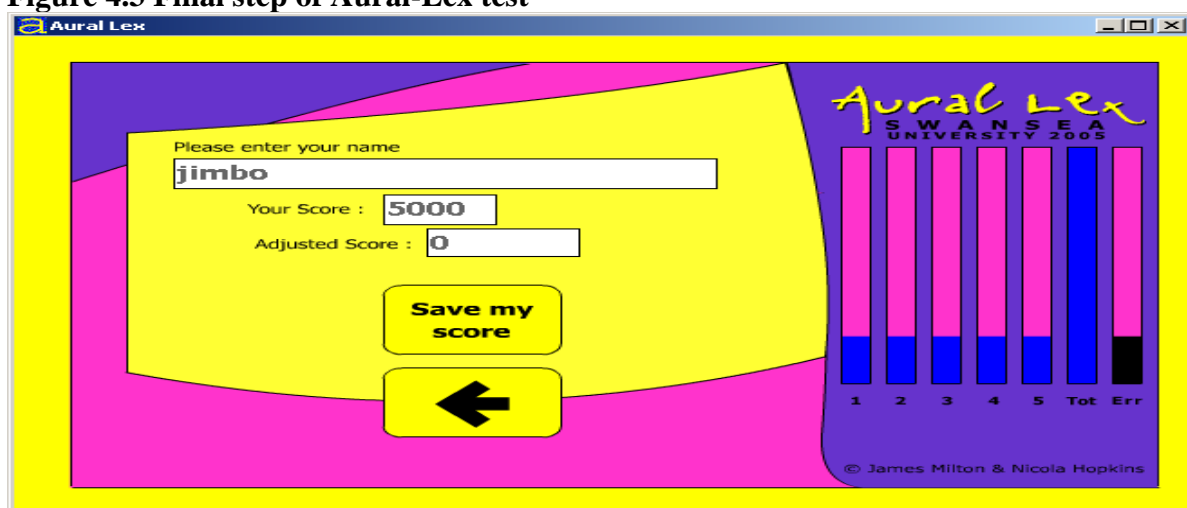
Figure 4.2 Screen of second step: entering test-taker's name



The testee is supposed to click on the arrow to hear the test word; he/she can click on it as many times as he/she likes, and can hear the word as many times needed. The testee can click on the smiley face if they think they know the word, and can click on the scowling face if

they think they do not. Then the next word is loaded. The first 5 columns (1, 2, 3, 4, 5) on the right hand stand for the scores of 1000-5000 frequency bands respectively in blue colour. The **Tot** represents total score of the 1000-5000 frequency bands. The **Err** column in black indicates the amount of guessing by the testee. After all the words are processed, the following screen is shown (see Figure 4.3), and the testee is then supposed to save the score from this test, and the test comes to an end. In terms of the meaning of scores, please see Appendix F.

Figure 4.3 Final step of Aural-Lex test



Self-reflections on LPs and the causes of these problems at the beginning of the semester.

At the very beginning of the spring semester in March 2010, students were required to complete the form named ELC Level 1 Student Personal Information (Please see Appendix B), which had been designed for my teaching and research. It contained three open-ended

questions concerning their problems in LC, the reasons for these problems and learning strategies in dealing with LC.

In order to describe their LPs clearly, the students were allowed to answer these three open-ended questions in Chinese to express themselves clearly. I then translated their reflections into English. To ensure the reliability of the results, I checked them again to ensure the accuracy of their opinions. After that, I asked one of my colleagues, an associate professor in translation, to confirm whether my translations really reflected the students' thoughts on their LPs, the reasons for their problems and their learning strategies.

After being satisfied with the translation of the students' reflections, I began to code the collected data carefully and tried to search for any description of problems in their listening learning experiences. After several revisions, I categorised their descriptions as 10 LPs according to their similarities in representing their LPs I presented all the different descriptions of their LPs, except those that were similar or the same ones. After that, I gave each of the 10 LPs a brief coding label. During the coding, I also noted down the number of times each problem was mentioned, made a list of LPs and ranked them according to the frequencies of occurrences. I then examined each problem for the features that linked it to Anderson's (1985) three-phase listening processing, that is, perception, parsing and utilisation. After that, the problems were classified into these phases of comprehension. The criteria for my categorisation were based on those of Goh (2000).

In order to make my categorising valid and reliable, my colleague was asked to code them again. We agreed with each other on most of the items except for one of the categorising themes, students' LPs in pronunciation. I divided it into two parts: (1) lack of knowledge of pronunciation and (2) linking problems. However, my co-coder's category for this theme was phonological recognition difficulties, such as linking and weak forms. After we had read and discussed Goh's article (2000), we finally reached agreement and named the theme of this category as 'Have difficulty with recognising individual words in a CS'.

Based on my colleague's suggestions, I deleted two items of LPs identified from the data such as 'lack of practice' and 'feeling nervous, which were present in the case of only two participants, as they do not belong to the LPs from a linguistic point of view but constitute affective factors. As for the theme of the LPs and the causes of these problems identified from the data, after discussing and double-checking the descriptions with him, we reached the final categorisation as shown in Appendices C and D.

Dictation and transcription tests

In order to study L2 listeners' listening problems through spoken word recognition in connected speech, dictation transcriptions were conducted in the classroom. Dictations are claimed as pragmatic tests as they 'require time constrained processing of the meanings coded in discourse' (Oller, 1979, p263). Buck (2001) proves the listening skills involved in the process of dictation are 'probably just word recognition' (p77). Therefore, dictation and transcription tests are appropriate to explore the extent that L2 listeners' spoken word recognition.

Dictation and transcription tests were used in the three phases, considering the inherent nature of dictation. In LC, measuring learners' ability to recognise spoken words in CS can be done through transcription (Angelis 1974; Kelley 1991) and dictation (Bonk 2000). Pemberton (1995) also recommends transcription and dictation as important research tools, as they can be used to 'find out the particular sources of LPs---something that message-oriented tasks such as note-taking cannot do' (p179).

The dictation test occupied a considerable part in my data collection, as it 'represents the wide range of skills involved in successful listening, and engages the learner in real-time sequential processing of speech, as in everyday listening' (Pemberton, 2004, p 18), although it has received some criticism in the past for being too easy a test (Lado, 1961), and some have complained that it tests too many skills at the same time (Heaton, 1990). By contrast, some other research holds vastly different opinions. Pemberton (2004), for example, speaks highly of the multiple advantages of dictation, arguing for its vital role in exposing the learners' genuine listening competency. He suggests that in the continuation of normal utterance, 'dictations will test more than just the ability to recognise words from CS' (p17). Accordingly, dictation found its full expression in this study.

The other useful device that equally showed its due importance and application in my research was transcription. In this sense, it does not exactly reflect the natural features in spoken CS. However, 'transcription can allow researchers to see how the learner has

perceived the whole passage in a way that other tests are not able to do' (Pemberton, 2004, p18). It can faithfully track and record the listener's first, second and third perceptions of a string of speech. The different transcription versions of the learners' thought processes are themselves natural evidence, which can be used to explore deeply their internally mental mechanism of processing the SWR.

The performance of the learners in dictation and transcription is meaningful in exhibiting their real ability in terms of frequent English words recognition and LC in general. Previous research (Pemberton, 2004; Gao, 2008) has demonstrated that poor dictation and transcription scores reflect not only an inability to recognize common English words, but also low levels of comprehension. Transcription and dictation are important research tools to 'find out the particular sources of LPs--something that message-oriented tasks such as note-taking cannot do' (Pemberton, 1995, p179).

To make dictation work effectively, a questionnaire was employed following each chunk dictation. The purpose was to identify the students' online LPs as well as the causes of these problems as they perceived them. There were 18 chunks in each dictation text at basic and intermediate level. This is an effective way for both students and teachers to know the causes of their actual LPs in the dictation texts.

Dictation texts in the three research phases

Dictation passage in pre pilot study

At the very preliminary stage, I chose one published text for the pre pilot study with the purpose of being familiar with the whole procedure of the dictation test. Based on my supervisors' feedback, I tried to chunk the text, but found it very difficult to decide where to exactly place the pauses. Therefore, I made two versions (see Appendix E): the first version (A) aimed to keep the chunks to a maximum of 9 words, but in so doing I was forced to make some odd breaks (in terms of meaning). By contrast, version B had more natural breaks, but resulted in some chunks that were quite long (those chunks with more than 9 words were numbered). Certainly, once the chunk is 13 or 14 words long, it is likely to cause problems in terms of the working memory for the participants.

In order to examine the effect of the two versions of pausing, to see whether Version A was possible without producing 'odd' sounds at the ends of certain chunks, and whether Version B results in chunks that were too long, I tried out the different versions with six individuals at undergraduate and graduate levels in the UK and in China respectively to gain their perceptions and establish the difficulties they encountered. The findings showed that both versions were problematic. Following discussion these problems with my supervisors, we realized that it would be better to find a native speaker to re-record the text in order to get 'natural' pauses in the right places.

Three dictation texts

The three different texts at basic, intermediate and high intermediate proficiency levels were,

in the pilot study, selected from Northstar series textbooks named Focus on Listening and Speaking (Foundation Level, Intermediate Level and High Intermediate level) published by Pearson Education (For details, please refer to Appendix G). The purpose of presenting these three texts was to see if any texts were too easy, too difficult, or at about the right level for the participating students.

In the pilot study, I segmented the texts into 15 chunks for students to do dictation and transcription. I used the CDs linked to the textbooks to make it, in which the speakers were in a real context with some background music. All the participants took the dictation in a well-equipped language laboratory. However, most of them complained about some noises or speakers' fast speed, especially the speakers from High Intermediate level. Based on the findings of the pilot study and the limitations of short-term memory, I decided to make 18 chunks of each text, which would give students enough time to take a dictation and transcription. Also I decided not to use the text at the High Intermediate level in main study as the background music on this level recording placed a greater level of difficulty on the listeners than it existed in the other level texts, introducing a further variable. It is too difficult for the participants to understand it and too difficult for me to understand the participants' SPW well because they could not recognise most of words of that text.

The foundation and intermediate level texts were finally selected for dictation and transcription in the main research. I had conducted a pilot study, on the basis of which, I had

finally confirmed that the participants in my study should use these two passages, one of which was at a lower than the students' actual proficiency level, and the other one was just at their level.

Although the CDs linked to the textbooks sounded quite lively and natural, I decided to request a native speaker to record these texts for the following reasons:

- The actual North Star recordings proved difficult to cut into clean chunks.
- Due to the nature of discourse being run together, speakers of the texts in the original CDs do not pause where we needed them to pause for dictation purposes.
- Based on the findings of my pre pilot study, it was decided that a native speaker should re-record the texts to get the 'natural' pauses in right place.
- This would avoid unnecessary variables such as noises or speakers reading the texts at different speeds.
- This provided a standard voice and accent across all recordings.

The criteria for the speaker in the dictation texts are that he/she should speak clearly, but not over-carefully; in other words, he/she should speak the chunks in a natural radio/TV broadcast manner and use linking, contractions, weak forms and other features of connected English speech. It was important for the speaker to maintain an even speech rate throughout the two recordings – the two recordings needed to be comparable in this way. The speech rate

was expected to be approximately 150 wpm (i.e. 2.5 words per second) across the chunks. The speaker would read the chunks as on the framework, maintaining natural intonation, but with a very brief pause between every two chunks.

The recording of the passages was to be played three times, with the complete passages being read without any pause for the first and third time. The first time of playing was to allow the participants to have a general picture of the passage, while the third time of playing was to enable them to check what they had written down. During the second time of playing, the speaker was asked to read the whole passage chunk by chunk. In the pause after each chunk, participants were instructed to write down what they could hear even if they were not sure, and then the questionnaire of listening difficulties with that chunk would follow. Based on the findings of the pilot study on this part, I had set the pause time between every two chunks by a software named MP3 Splitter & Joiner one by one, and then joined all the separated sections into one complete recording. In the next section, I will elaborate and interpret the process of the three research phases of pre pilot study, pilot study and main study.

4.5 Research procedures and data analysis

As described above, in the first phase of the present research, a pre-pilot study was conducted with the intention of laying a good foundation for the coming pilot study to ensure that the data to be acquired in the major study would be valid and reliable. As argued by Borg and Gall (1979), trial of research instruments and techniques are essential for a research project.

A semi-structured questionnaire survey and a listening vocabulary test were employed to identify LPs and the reasons for these problems, in particular, the problems of SWR.

According to the findings of my pre pilot study, I decided to use the following revised data to test the research instruments again in the pilot study: (1) the questionnaire survey, which was revised to integrate participants' listening difficulties with the reasons for such difficulties; (2) self-reflections on LPs and the causes of these problems; (3) the Aural-Lex test; and (4) three dictation texts at foundation and intermediate levels adapted from the text books named North Star Listening and Speaking. For a detailed description of these data collection instruments, please see Section 4.5.5 above.

In the third phase, to facilitate triangulation of data and results, the data for the main study were derived from the following six sources: (1) University Learners' Awareness of Listening Difficulties & Causes Questionnaire Survey; (2) Self-reflection on LPs and the causes of these problems at the beginning of the semester; (3) Aural-Lex tests at the beginning and at the end of the semester; (4) dictation tests at the beginning and at the end of the semester followed by a structured questionnaire survey on each chunk dictation; (5) one-semester instruction; and (6) a semi-structured questionnaire survey on an immediate retrospection of one-semester instruction. In the following subsection, I will elaborate and interpret the process of data collection, reduction and selection in these three phases.

4.5.1 Pre pilot study

4.5.1.1 Initial test on dictation and self-reports on listening difficulties

Before I started my fieldwork, I asked two Chinese students in the UK to try the basic dictation text chosen from a website (Please see Appendix E) and offer me their reflective summary, especially in terms of their difficulties in the listening process. At this stage, I had not designed the statements of students' likely reasons for listening difficulties for each chunk for participants to choose from but I had made certain pauses between every chunk for dictation. They completed this task at my office.

One of the volunteer participants was an undergraduate student while the other was a PhD candidate. The undergraduate participant gave me oral feedback, saying she seemed to understand the main idea of this text but there were several words she could not write down, some of which were new words and others were due to her poor spelling skills. The post-graduate participant completed the full task and gave me an immediate written report after his dictation task. He tried to describe the listening experiences still lingering in his mind. He noted that basically he understood the text, but some pauses were not long enough for him to write down the full chunks. Besides, in some cases he could not memorize all the words in a chunk and some clusters of sounds were obscure for him. One interesting thing he mentioned was that he could not remember all the reflective ideas in his process of listening.

The two participants' experiences prompted me to contemplate how I should improve the

dictation test. The first participant was a young student, who had a limited listening ability but seemed to be unable to describe her opinions. The second participant was able to inform me of his mental process; he offered some causes of his difficulties but was unable to recall others, which were fleeting and had disappeared. This result encouraged me to further optimize the dictation text for my pilot study. As a result, I decided that the participants in my pilot study, to be conducted when I entered my fieldwork site, should write down their responses and choose a proper reason from those on the list immediately after each chunk. I then re-examined the chunk pauses and prolonged them so that the participants could have enough time to write down the chunks they heard as well as their causes of poor understanding.

4.5.1.2 Questionnaire survey

When I entered the fieldwork site in September 2009 before the pilot study started, I began to think about a questionnaire survey and a dictation test of three listening texts, which were to be conducted among 6 first-year undergraduates. They performed these tasks at my office. The questionnaire in the pre pilot study consisted of both closed questions and open questions. I tried to list all the LPs and the causes that I had noticed and observed as an English teacher with many years' experience and information I had learned from journal articles and books. Finally, I got 20 LPs in the form of closed questions and three open questions concerning the LPs, reasons for LPs and learning strategies. Based on their feedback and my interviews, I changed or added some items of LPs and the causes of these problems in the questionnaire. The design of the questionnaire survey seemed to be effective and suitable, but it could not

show very clearly which reasons matched a particular listening problem. So I decided to design a questionnaire which combined LPs with the causes of these problems and identified the exact reasons for a concrete listening difficulty. Each listening problem was in the form of a statement while the reason for this problem was in the form of multiple choices to which an 'other' item was added to explore possible problems I had not anticipated. All the questions in this part would be closed ones and used in my pilot study.

However, the design of the dictation and the self-report needed to be improved. It had been originally planned that participants would be tested on dictation and self-reports on three texts at basic, intermediate and higher intermediate levels respectively. The texts as well as their recordings were selected and appropriately chunked, with corresponding pauses for each chunk so that the participants could write down the dictated chunk followed immediately by their self-diagnostic retrospection on the causes of their listening difficulties.

In the test, the participants were allowed to listen to the texts three times altogether as described in 4.5.5. For the first time participants listened to the texts in order to become familiar with them. For the second time, they were asked to use blue or black pen to note down each chunk during the pauses between chunks. After that, the participants were told to jot down immediate retrospection notes or make a selection from the choices given during the pause after each chunk dictation. If they did not think they had any problems with the chunk, then they could ignore the multiple choices of causes of LPs. For the third time, the recording

was played without any pauses to make them check or revise with red pen what they had written. The purpose was to know the differences of chunk dictation between the second time and third time.

4.5.1.3 Aural-Lex vocabulary size test

While doing the pre-pilot questionnaire survey, I was considering how I could test the validity of the phonological vocabulary test in the university. Accordingly, by the end of October 2009, the Aural-Lex had been tried out by three native speakers who were English teachers, four local English teachers and 69 university first-year undergraduates. The purpose was to test whether the Aural-Lex was valid enough to differentiate between the actual listening proficiency levels among CUS.

I asked the native and non-native speakers English teachers to do the test at my office at their convenience. All the students were asked to finish it in a well-equipped language lab in their English course. Instructions were given to the students to make sure every participant clearly understood the testing procedure. The problem of data-collection for students was that quite a number of students clicked 'save', but did not save it in reality, so I had to ask them to retake the test again. However, it seemed that their scores were invalid as they took the test twice at least. Therefore, the valid number of final student participants was 69. The results showed that there are clear differences between the native speakers, the local English teachers who had learning experience abroad and the students. (For more details of scoring system please see Appendix H).

In the pre-pilot study, the high validity of the Aural-Lex was demonstrated with 69 participants, which indicated that I did not need to test it again in the pilot study, and it could be effectively used in the formal data collection procedure. By contrast, the students' English study survey, and the design of dictation plus self-report on listening difficulties, which had been tested on a small scale, needed to be further tested on a relatively larger scale in the pilot study. The retrospection reports collected in the pre-pilot period provided me with the basis for the design of the choices of causes of listening difficulties for each chunk dictation in the coming pilot study.

Besides, the results from the students' answers to the open-ended questions on the causes of their listening difficulties contributed to the design of 'Self-report questions for trialling in the pilot study,' which was intended to make the self-reports following dictation become semi-structured, and closed-ended. The 'self-report questions' also incorporated many of my studies and resources from the literature review on listening difficulties (Goh, 1999, 2000; Gao, 2008; Hasan, 2000). In this research design, the causes of listening difficulties were classified into the following categories: 'sounds,' 'words,' 'grammar,' 'discourse,' 'meaning,' and 'other,' under each of which were listed a number of probable reasons for LPs. The feasibility of this research form would be tested the pilot study.

4.5.2 Pilot study

The pilot study which was meant to further test the feasibility of the questionnaire survey, chunk dictation, and self-reports following chunk dictation lasted from October until December 2009. This phase of experimentation proved to be necessary, as it included student participants in considerable numbers, in comparison with the pre-pilot study. It indeed saw some changes in the research methods for the third phase of the formal research data collection. The following concerns were mainly addressed: a questionnaire survey on students' listening difficulties in general, and dictation tests plus self-reports on the reasons for the listening difficulties in each chunk, which would include more self-report formats including both structured and unstructured questions.

Questionnaire survey

In testing the questionnaire survey, 83 participants volunteered to take part. One of them failed to tick the difficulty choice, so the data thus produced was regarded invalid. The responses from the participants about their listening difficulties contributed to the collection and screening of the multiple choices in the questionnaire to be used in the main study. The completed questionnaire presented some items which were of low frequency. This meant these items in the semi-structured survey were not representative enough; as a result, they were deleted. On the other hand, other items appeared more often than expected; these were then added to the corresponding statements as possible reasons for listening difficulties.

Accordingly, the questionnaire was revised and some new items were added. The following

statements had newly added reasons for each listening difficulty, as illustrated in Table 4.5 below.

Table 4.5 Newly added reasons for listening difficulties based on the findings of questionnaire

D1: Have difficulty in breaking the stream of speech into separate words
<ul style="list-style-type: none"> • Can't concentrate when listening to English • The speaker's speed is too fast to catch. • Don't know how the words should be pronounced correctly • Cannot understand the words I just listen to • Practice little
D2: Have difficulty in identifying which words the speaker emphasis
<ul style="list-style-type: none"> • The speaker's speed is too fast to catch
D4: Have difficulty in catching the ends of words
<ul style="list-style-type: none"> • Have not learned the knowledge of word endings • Have not realized the ends of words
D5: Have difficulty in recognising words, even though I know them in written form
<ul style="list-style-type: none"> • Can't concentrate when listening to English
D7: Have difficulty in identifying the sounds of the words correctly
<ul style="list-style-type: none"> • Don't know how the words should be pronounced correctly • Practice little
D9: Have difficulty in understanding the vocabulary in the passage
<ul style="list-style-type: none"> • Don't know the other meanings of the same words. • Am not familiar with English phrases
D10: Have difficulty in making sense of the grammar
<ul style="list-style-type: none"> • The speaker's speed is too fast to catch

Dictation texts and self-reflection reports

In deciding what listening material to use, such as its exact length, genre, pause lengths between chunks, difficulty level, chunk length, and even the order of texts recording played, there were quite a few considerations made (Detailed please see description in Subsection

4.5.5 above). In addition, the proper way to obtain the immediate retrospection on the reasons for LPs was a difficult choice between open-ended and closed questions. Closed questions were considered, especially towards the end of my pre-pilot stage.

Dictation texts selection

In the pre pilot study, I chose randomly one of texts at lower intermediate level from a listening website. The purpose was to identify any issues during the whole procedure of dictation. The findings showed it was difficult to chunk the text with audio files. After having discussed with my supervisors, we decided to use NorthStar textbooks series which were being used by university students at different proficiency levels.

One main difficulty with using these texts for the study related to chunking methods. The proper way of dividing texts into chunks of suitable lengths was problematic. As discussed in Chapter 2, segmenting a sentence into chunks can be performed at different levels: prosodic, syntactic, word-order, functional, etc (Colominas, 2008, p 345). My research started with a prosodic perspective. In chunking sentences, there are three choices: 1) the tonal units, for example, ‘what are the goals//of your literature review’? 2) syllable length; and 3) number of words. I tried out the above three methods, and noticed the tonal units method worked best as the other two looked or sounded awkward or unnatural.

Multi-level dictation test plus self-report: towards my own choice

In order to see which level (s) was most appropriate for testing in the main study, I produced a multi-level test including basic, intermediate and high Intermediate levels. This test would most probably be in the forms of dictations at the different levels, with self-diagnosis of listening difficulties at particular points in the dictation including multiple choices, open-ended and open-ended + longer chunk for each dictation text, as displayed in the three tables below.

In the self-report section of the test, only two ‘modes’ of dictation, including closed multiple choice (MC) and open-ended questions, were employed. However, I considered a third option, ‘open-ended, with longer dictation chunks,’ which meant that some chunks would be merged into one. I thought about using three classes to try a 3x3 test modes as I was teaching three English classes at intermediate level in the autumn term of 2009, enabling each class to tackle each of the three levels of texts using different testing modes, which can be seen in the tables 4.6, 4.7 and 4.8. In other words, each class would be presented with a dictation/self-report task containing three levels of text, each in a different test format, for example Class A, B and C. Assuming an average chunk number of 18 per text (the actual number may be slightly above or below this), that would give approximately 54 dictation chunks for each student to transcribe and to self-report the causes of each chunk of listening.

Table 4.6 First mode of dictation

Modes of dictation text and self-report				
Class		A	B	C
Text level	Basic	MC (tick box)	Open-ended plus longer chunks	Open-ended
	Intermediate	Open-ended	MC (tick box)	Open-ended plus longer chunks
	High Intermediate	Open-ended plus longer chunks	Open-ended	MC (tick box)

Note: MC=multiple choice.

The first mode, however, would mean that the tests should all run from basic through intermediate to high intermediate in the same linear sequence of supposed difficulty. On the one hand, this would give everyone an equal opportunity to adjust to the dictations, starting with easier texts and moving on to supposedly harder ones. However, this might give an ‘unnaturally’ low score for the basic level text if that is always first in the test and thus a fairer option would be to vary the sequence in order to prevent a practice effect. In this case, a possible test sequence might be as indicated in Table 4.6.

Table 4.7 Second mode of dictation

Modes of dictation text and self-report			
Class	A	B	C
Text level	Basic MC (tick box)	Intermediate Open-ended plus longer chunks	High Intermediate Open-ended
	Intermediate Open-ended	High Intermediate MC (tick box)	Basic Open-ended plus longer chunks
	High Intermediate Open-ended plus longer chunks	Basic Open-ended	Intermediate MC (tick box)

Note: MC=multiple choice.

Alternatively, we could keep the same arrangement as in Table 4.6 above, but change the level sequence for each group, as Table 4.7 and 4.8 shows. However, this has produced the same ‘mode’ sequence for each test.

Table 4.8 Third mode of dictation

Modes of dictation text and self-report			
Class	A	B	C
Text level	Basic MC (tick box)	Intermediate MC (tick box)	High Intermediate MC (tick box)
	Intermediate Open-ended	High Intermediate Open-ended	Basic Open-ended
	High Intermediate Open-ended plus longer chunks	Basic Open-ended plus longer chunks	Intermediate Open-ended plus longer chunks

The above modes, by different permutations and combinations, had been meant to take into account the subtle differences that the various mode sequences and text level sequences would emerge in the data collection and data explanation.

However, all these seemed far too complicated and time consuming for a pilot study such as mine, not only in terms of data collection but also data entry and analysis. Therefore, I decided to take some samples from this ideal design, and to focus on the following two cases: 1) the intermediate text dictation in three formats of self-report; and 2) all three texts followed by open-ended questions. This would still allow me to spend much time on them.

Two different measures in conducting dictation plus self-report in the pilot study

As mentioned above, in dictation plus self-report trialling, two measures were taken: 1) the intermediate text dictation with three different ways of immediate retrospection; and 2) the dictation of texts at three levels of basic, intermediate, and higher intermediate, followed by open-ended questions.

In the case of the first measure, the intermediate text dictations were followed by three formats of self-report, with different numbers of participants involved in each form. There were the following three types of questionnaires following the same dictation text, in an attempt to explore the reasons for the learners' listening difficulties or problems: 1) dictation of intermediate text of seventeen chunks with open-ended questions; 2) dictation of intermediate text of fifteen chunks with open-ended questions; 3) dictation of intermediate text of seventeen chunks with closed-ended questions. The first and the third cases had the same chunks while the second one had chunks merged and rearranged; as a result, some chunks were divided and reallocated to other chunks, thus reducing the total number of chunks. This means the average chunk length was increased.

The results from the above modes of dictation texts are both unstructured and structured questionnaires informed my future research in two ways. First, the employment of the structured questionnaire turned out to be rather difficult for the research participants, and the students complained they did not find enough time to make a proper choice, as the choices on

the list seemed to be too many under many categories like ‘word,’ ‘meaning,’ and ‘grammar.’ This seemed to suggest that the well-planned self-report was too elaborate to be practically useful. This understanding would lead to further improvement in this part of the test design. It prompted me to contemplate how to make the self-report practically conducive to eliciting participants’ real reasons for their difficulties, rather than how demonstrating ‘perfect’ the questionnaire was.

The other contribution from the first measure was that the two modes with open-ended questions clarified the major reasons for listening difficulties reported by the students, which would be a great help in designing a relevant semi-structured questionnaire for my formal data collection. In the open-ended questions with longer chunks for the intermediate level (fifteen chunks), eleven participants did the dictation three times, in the way described in the pre-pilot study. In the open-ended questions for the intermediate text of seventeen chunks, nine students participated in this survey. The ideas summarised from their reports served as a good basis for exploring the exact reasons for LPs.

The fifteen chunk versions and seventeen chunk versions had been designed with the intention of observing the subtle differences in listening difficulties in dealing with longer and shorter chunks. However, in summarising the reasons students identified for their listening difficulties, in both the fifteen chunk dictation and the seventeen chunk dictation, I was faced with various yet similar answers, such as ‘vocabulary,’ which was the most

reported, 'unfamiliar words,' and 'cannot catch the meaning of the whole sentence.' Besides, the students obviously reported that the dictation with longer chunks was more difficult than that with shorter ones. Meanwhile, the different chunking approaches for the same text meant that there was no one to one correspondence in chunks between the two versions of the dictation text; in other words, there would be little significance in making a comparison between these two dictations.

This result made it difficult to differentiate between these two listening processes, and to know how to interpret the supposedly different implications arising from within. As the causes of listening difficulties were self-reported by the student participants, they constituted qualitative data, which indicated that there might be no significance in finding out the exact percentages of each reported cause. So I decided to abandon the attempt to summarize their differences, but to concentrate on their similarities and common ground. This practice would enrich the multiple choices to be reflected and enlisted in the close-ended questions in the formal study.

I encountered similar dilemmas in interpreting the results from the second measure. In other words, I was presented with an enormous amount of data from students who identified reasons for listening difficulties that were similar, with only subtle differences. The first subtle difference among the three texts at basic, intermediate and higher intermediate level was that the basic text dictation tended to have reported causes that were more diverse than

the other two texts at higher levels. The intermediate text as well as the higher intermediate one had ‘vocabulary’ identified as their main barrier. These results were reasonable, as these two texts were more difficult than the basic one. Therefore, again, I focused on the similarities and common ground among them and collected them in my final structured questionnaire attached to the chunk dictation.

Listening difficulties reported by the students about their dictations

The listening difficulties of the 66 students taking these dictations and offering their retrospection, according to their reports in Chinese, were many and varied (For more details of the dictation survey, please see Appendix I). A summary of their LPs are shown in Table 4.9. They were classified into the following ten items, which were listed in the order of the number of students who reported those LPs.

Table 4.9 Listening difficulties reported by the students through their dictations

Total N	89	Number of students	Percentage
1	Limited listening vocabulary	57	86.4%
2	Poor recognition of linking or weak form	36	54.5%
3	Poor memory or inadequate ability to integrate words into proper and logical message	30	45.5%
4	Mismatch between the speakers’ and the listeners’ incorrect pronunciations	28	42.4%
5	The speaker’s fast speaking speed	16	23%
6	Lack of background knowledge	9	13.6%
7	Limited grammar knowledge	7	10.6%
8	Inadequate spelling ability	7	10.6%
9	Unable to concentrate on listening	4	6.1%
10	Lack of training in shorthand writing	3	4.5%

From the above table, it can be seen that most of the students regarded limited listening vocabulary as one of their difficulties, reported by 57 out of 66. That is to say, the majority (85%) mentioned this cause for their difficulties, followed by poor recognition of linking forms or weak forms in the uninterrupted flow of speech, with 36 students (54.5%) reporting this cause. This shows that the students were still in need of basic language skills training including both vocabulary enlargement and pronunciation improvement. This first problem easily aroused attention and interest from both teachers and learners. However, we tended to show more emphasis on the reading of individual words than on their pronunciation of weak form in the chunks of the English language. So how to offer more practice to the students in terms of the pronunciation of words in a real language context is a meaningful issue for us to explore further.

The third reason suggested in their reports was rather complicated for it involved many aspects but was basically relevant to the students' short memory of the large block of words in relation to processing a message. Many complained they could forget the first part when they began to listen for the next part or vice versa, they could not afford to listen to the next part since they could not help focusing on the first part. The slow response to the continuous flux of speech brought about the stagnation of message absorption. In this category, there were thirty students, 45.5 per cent, pointing out this problem. It is significant to reveal this as potentially big problem for L2 learners, even bigger than exposed in this report. This is because the students investigated in this project were of lower levels in English learning and their inadequate vocabulary was prominent. However, if they had had a bigger vocabulary

stock, they might have found it necessary to know how to integrate individual words into coherent meaning and how to utilize their memory. So, students needed more intensive practice on chunk training to become fluent listeners.

The fourth and the fifth difficulties suggested in this study with 42.4% and 23% respectively are both related to the gap between the native speaker's speech and the listeners' insufficient capacity to follow connected speech. The former reflected the aspect of the listeners' pronunciation while the latter revealed their inadequacy to follow the natural speed of native speakers. There were still some other minor difficulties as listed in the table above. Low percentages demonstrated that they were not representative although those with such difficulties do need personal guidance and help

Towards improved design in formal data collection

The experiences of conducting the pilot study enlightened me in a number of respects as shown above. Some of the items such as the Aural-Lex and the survey of students' English LPs were proven to be valid without or with some changes. But dictation plus self-report turned out to be rather complicated.

After the pre pilot and pilot phases, I first decided to adopt a structured questionnaire with carefully designed choices for the causes of listening difficulties attached to each chunk in the

formal data collection period for a number of reasons. Firstly, the students' reported causes had limitations as they could be hindered by their verbal capacity when attempting to describe the causes of their listening difficulties. I therefore decided to consolidate all the collected diverse ideas in one place so that they could identify any reasons for their LPs. The outcome from this reflection and experimentation was the structured questionnaire with thirteen choices as causes, which were written in clear and simple language. I discarded the use of a number of categories like 'word,' 'meaning,' 'grammar,' with a few statements under each in my pilot study, thus minimizing the students' difficulties in making choices, as their major concern was to do well in dictation. However, to avoid the students' self-reported causes other than those on the list, the last item was established as 'other,' offering an option for them to describe their particular reasons. In this sense, it is not really 'close-ended,' but incorporates the benefits of both the open-ended and closed questions, while enabling participants to have more time in taking dictation and identifying reasons.

Secondly, in the pilot study, I had used the original audio recordings as they included background music and the speakers' speech was natural and authentic. However, this had caused new difficulties for listening. In the formal study, I would take a series of measures to change this; as a result, the speaker would speak in a way that was more appropriate for the research participants, with the background noises erased.

My third decision was on the method of chunking in the dictation texts. I had tried different

versions. Different as the results were, with longer chunks being obviously more difficult than shorter ones, they also posed difficulties for analysis and gave rise to new variables in analysing listening difficulties. Consequently, I adopted a general way of chunking, and chunked the texts into 18 chunks. This decision sounded reasonable considering the average working memory capacity of research participants.

Another important decision was that I would use only two texts for dictation: basic and intermediate. As discussed above, the results showed that there seemed to be no significant differences between the listening results of the individuals. In light of this reflection, the inclusion of the higher intermediate text seemed to be superfluous.

Recording dictation texts for the main study

Based on the feedback of the participants from the pre pilot study and the pilot study, I decided to find a native speaker to record the two texts at basic and intermediate levels, and the criteria for their recording have been discussed above. A female English teacher at 30s of over nine years' teaching experience, who met those criteria mentioned above, agreed to record them.

In this process, I realised that corrections needed to be made at the time of the recording rather than trying to call the speaker back again if there was a mistake, and made sure that the

two recordings were comparable in delivery. On this basis, the recordings were edited so that there were two versions of each text: 1) the original recorded version, with a brief pause between every two chunks, as this version would be played through in its entirety (dictation playing one); 2) paused after each chunk to allow participants to write the chunk out word for word and self-report any difficulties by ticking corresponding choices attached to the chunk (dictation playing two).

4.5.3 Main study

With over four months' preparation of the pre-pilot study, pilot study, and trials of different research instruments and methods, I arrived at the formal and main data collection period at the beginning of 2010. It took place in the same university as the pilot study. This stage consisted of students' self-report on their LPs and the causes of these problems, university learners' awareness of listening difficulties and causes questionnaire survey, dictation followed by self-report questionnaire, and Aural-Lex. On the basis of this, students' listening difficulties and the causes of these difficulties were identified and an intervention programme was proposed and launched. Finally, a post-dictation test followed by a self-report questionnaire was administered to provide a contrast to the situation of the students before this programme; a retrospection and reflection questionnaire after one-semester instruction of teaching English listening

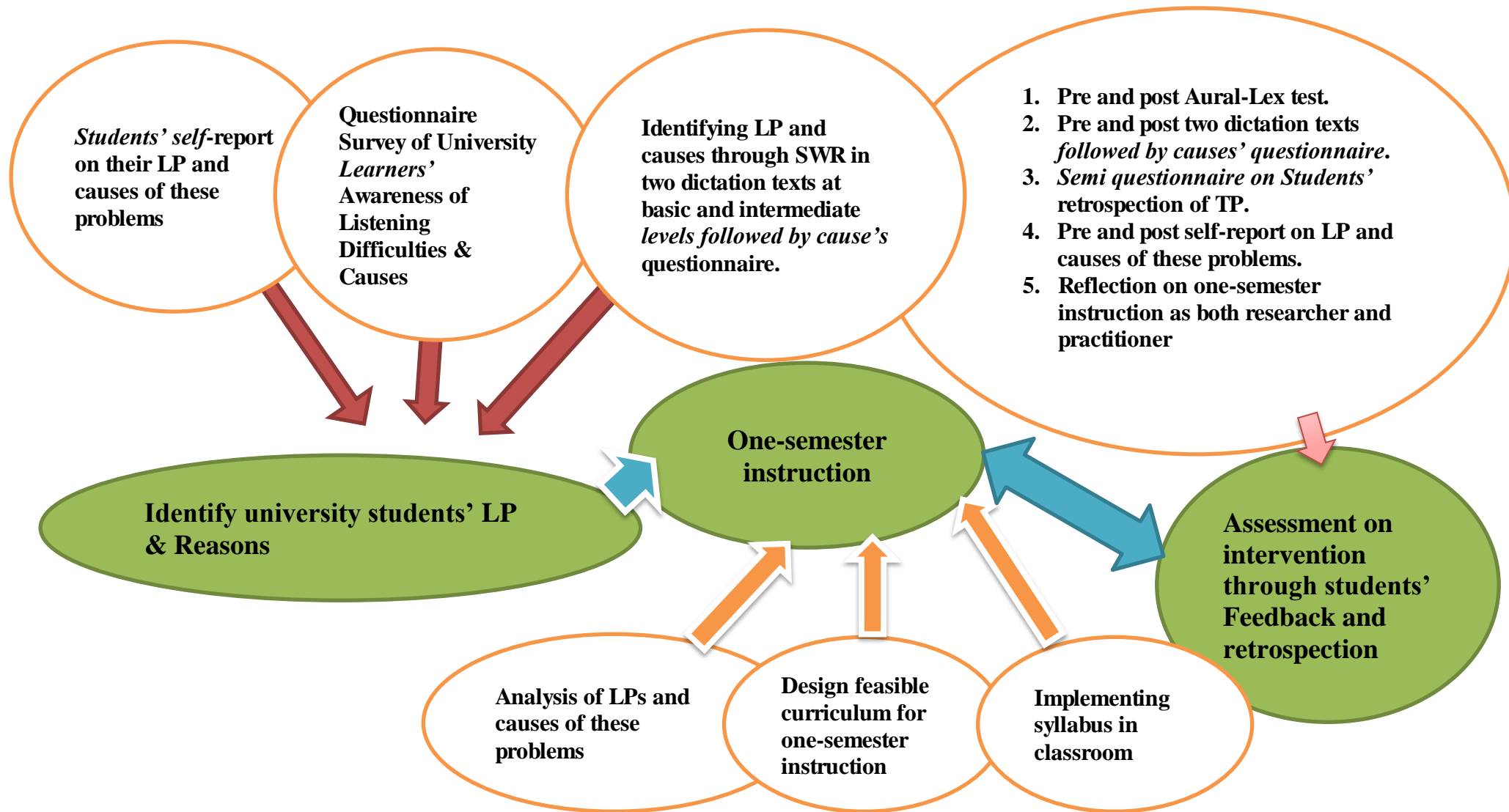


Figure 4.5 Main research designs

was conducted to assess the effectiveness and weakness of teaching and learning in listening and to identify the LPs after one-semester instruction. The research design for this phase is shown in Figure 4.5.

Participants in this stage were 42 university students in two intact classes who moved up to intermediate level from foundation level, with ages ranging from 18 to 20. They majored in different fields of study, such as the liberal arts, laws, business, journalism, sciences and engineering. I was their English teacher and, at the same time, I conducted my data collection as a researcher. I met them twice each week, on Tuesday mornings and Thursday mornings.

Survey at the beginning of the semester

On the second week in the new semester, the students were firstly distributed the questionnaire survey on awareness of listening difficulties and their causes in the English class. Before the survey began, I introduced to the students the aims and significance of the survey, assuring them that it was not an examination, and they could do it anonymously with no relation to their assessment. I explained that there was no need to be worried about the survey and they could try to reveal their real concerns and views without any reserve. Most of the students finished the questionnaire within half an hour. Then I gave them the form named *Reflection on Students' LPs and Factors Influencing those Problems*. I asked them to do it in their spare time and submit it to me the following week. The participants did this accordingly.

On the morning of the second week, I conducted my dictation test of the basic text for two classes of participants in a well-equipped language lab. Then on the following the same morning, the dictation at the intermediate level was conducted on the same participants in the same language lab. The concrete procedures for the dictation tests were as follows:

Firstly, a practice passage was given before the actual test to ensure that participants would become familiar with the method. This practice included a very short passage, read by the same speaker who read the test passage in the actual test that followed. Then the participants were asked to listen to the formal dictation texts three times together. As mentioned in the above section on the research design, they listened to the whole passages without any pauses on the first and third occasions but, for the second time of listening, they were asked to write down chunks one by one during the pause between every two chunks and their immediate responses to their listening difficulties for each chunk. The total procedure for each dictation text took about 30 minutes to complete. After the dictation test, I did not show any transcripts to the participants for the sake of the post dictation test after one-semester instruction.

Later, on the basis of these surveys, I designed a curriculum for one semester intervention programme, which was implemented to remedy the listening difficulties identified. After the intervention programme, a post dictation test of the two texts at different proficiency levels was conducted

again to see the impact of one-semester instruction on SWR. After each dictation, I handed the participants a transcript of the text, and asked them to underline any words that they did not know and to confirm the items of reasons in the questionnaire of each chunk again to identify the causes of these LPs. After the dictation and the identification of chunk listening difficulties, a post-dictation questionnaire survey on assessment of one-semester instruction was distributed to ask the participants to complete immediately. The total procedure from the dictation to the invention programme assessment was completed within an hour.

4.6 Evaluation criteria

Reliability and validity in quantitative research

‘Qualitative research is combined to triangulate findings and give greater validity’ (Bryman, 2008, p105). Vandergrift (2007) also points out that, when research data from more than one instrument are triangulated, a holistic picture of the construct under exploration can be offered, as reliability can be promoted. To ensure data triangulation, my data were collected from the following six research instruments: (1) a questionnaire survey on LPs and the causes of these problems; (2) phonological vocabulary tests at the beginning of the semester and at the end of the semester; (3) students’ self-reflection reports on their LPs and the reasons for these problems before my intervention; (4) two dictation texts at basic and intermediate levels, with 36 chunks altogether and each chunk followed by a structured questionnaire on the reasons for listening difficulty in

recognizing the aforesaid chunk; and (5) the students' reflections on my intervention. All these helped strengthen the validity and reliability of the results.

Reliability

The reliability of a study refers to the 'extent to which our measurement instruments and procedures produce consistent results in a given population in different circumstances' (Dörnyei, 2007, p50). In my study, the questionnaire on listening problems was designed, edited, pre-piloted, piloted and discussed with my supervisors, based on the literature review, students' self-report and my observation as an experienced English teacher. I also referred to Goh's questionnaire and the questionnaire form used in my MA dissertation.

Reliability of items

Since Likert-type scales were used to identify L2 learners' listening problems, it is necessary to calculate and report Cronbach's alpha coefficient for internal consistency reliability, which was measured through SPSS. This coefficient serves as an internal consistency reliability indicator denoting how the different scores from the various items hang together. Generally, the alpha coefficient ranges from 0 to 1. The ideal reliability score should be 0.70 or higher. 'The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale' (Gliem & Gliem, 2003).

I checked all the 10 items of L2 learners' listening difficulties in the questionnaire. We can see clearly from the table that the Cronbach's Alpha coefficient is .253. It means that only 25% items have internal consistency. In the variable listening difficulties in Table 4.3, we can see clearly that if Item 6 'have difficulty in recognising phrases (e.g. catch up with)' were to be deleted, the Cronbach's Alpha coefficient would reach .77. In order to improve the reliability of questionnaire, Item 6 was left out. Then a new Alpha coefficient becomes .77, which indicates a good level of internal consistency for this questionnaire, that is to say, the questionnaire has acceptable overall reliability.

Table 4.3 Reliability Statistics of Items 10

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.253	.746	10

Table 4.4 Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.766	.775	9

Table 4.5 Item-Total Statistics

	Scale Mean if Deleted	Scale Variance if Item Deleted	Corrected if Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
1. Have difficulty in breaking the stream of speech into separate words.	32.28	53.35	.17	.37	.23
2. Have difficulty in identifying which words the speaker emphasises.	32.70	53.65	.17	.36	.23
3. Have difficulty in holding a chunk of speech or meaning in my memory.	32.58	51.06	.37	.33	.19
4. Have difficulty in catching the ends of words (-s, -ed etc).	32.19	52.16	.21	.16	.22
5. Have difficulty in recognising words, even though I know them when written down.	32.37	53.00	.25	.38	.22
6. Have difficulty in recognising phrases (e.g. catch up with).	31.53	14.59	.06	.11	.77
7. Have difficulty in identifying the sounds of the words correctly.	32.53	52.64	.29	.42	.21
8. Have difficulty in catching the next bit of speech, because I'm still concentrating on what was just said.	32.16	53.14	.20	.42	.23
9. Having difficulty in understanding the vocabulary in the passage.	32.51	53.07	.22	.34	.22
10. Having difficulty in making sense of the grammar.	32.72	51.68	.30	.34	.20

Golafshani (2003) describes validity as determining ‘whether the research truly measures that which it was intended to measure or how truthful the research results are’ (p. 1). Quantitative research tends to have high internal validity as variables are carefully controlled (Nunan, 1991; Alderson & Beretta, 1992). My research explored L2 learners’ listening problems and the causes of these problems, measured their mastery of phonological vocabulary size, and designed some feasible and effective teaching methods to improve the learners’ listening comprehension. Therefore, a questionnaire survey was used to identifying L2 learners’ perceived listening problems and causes. The two dictation texts at different proficiency levels were employed to explore their actual or online listening problems, and the AuralLex test was carried out to identify their actual mastery of listening vocabulary within 1-5000 frequency bands, at the very beginning and at the end of the semester. The 1-5000 frequency bands refer to the frequency of spoken word recognition.

One of the listening constructs in this research is to measure the extent to which participants’ SWR has an impact on listening comprehension through two dictation texts at different proficiency levels. According to the literature review, knowledge of vocabulary in specific texts was operationalised as the ability to recognise words in connected speech and tested through transcriptions (Kelly, 1991) and dictation (Bonk 2000). Pause dictations are an effective way of identifying which words in spoken texts participants are able to recognise. Dictation will ‘require time constrained processing of the

meanings coded in discourse' (Oller, 1979, p263). It tests more than just the ability to recognise words from connected speech as the online listening problems will be revealed through L2 listeners' dictation errors. Dictation with slightly longer segments before each pause will test the L2 listeners' short-term memory. In other words, the listeners' overall L2 competence is being tested. In my view, it does not make dictation a poor test of LC, but makes it a good one as it represents the wide range of skills involved in successful listening and engages the listener in real-time sequential processing of speech, as in everyday listening. More importantly, dictation allows the researcher to see how the listeners have perceived the whole passage in a way that other tests are not able to do.

Buck (2001) defines construct in listening as 'the thing we are trying to measure' (p1) and construct validity as 'to make a test that somehow measures that construct'. In other words, it refers to 'whether the test measures the construct or skill it is supposed to' (Milton, 2009, p18). In this research, the construct is comprised of L2 listeners' listening problems and causes, and the extent to which spoken word recognition has an impact on their LC in connected speech.

According to the findings of my MA, most Chinese university students, at both intermediate and high intermediate levels, ascribe their listening problems to lack of listening vocabulary. They expressed the desire to improve in listening vocabulary. Thus, I intend to test participants' breadth

of listening vocabulary and explore the extent to which the breadth of phonological vocabulary would affect participants' fluent listening comprehension.

Aural-Lex: Aural Vocabulary Size and Breadth Test

In this research, one of my research constructs is the breadth of L2 listeners' phonological vocabulary. Aural-Lex is an aural lexical test of phonological vocabulary, which is employed to measure L2 listeners' phonological vocabulary breadth, that is to say, measuring L2 listeners' spoken word knowledge of 'each of the first five 1000 lemmatised word frequency bands in English, and estimates overall knowledge of this vocabulary' (Milton, 2009, p93). In other words, it tests knowledge of how a word sounds out of the most frequent 5000 words in English. The Aural-Lex is valid as it is used for the purpose of measuring participants' mastery of phonological vocabulary and confirming whether it is their major barrier to understanding connected speech. The phonological knowledge is as close as possible to the knowledge that learners use to take the test.

AuralLex is appropriate for use in the Chinese higher education context for several reasons. Firstly, this phonological vocabulary test is designed and developed for L2 listeners. Secondly, it is both reliable and valid as this test takes two issues into consideration in vocabulary test construction. One is 'which words are to be selected for measurement, examination or counting?' In this test, the test developer selected the first five 1000 word frequency bands which are drawn from work by Hindmarch (1980) and Nation (1984).

The second is ‘what method is to be used to check whether learners know or can use these words?’ (Milton, 2009, p20). In this test, a Yes/No test format was presented on the computer. Altogether, 120 words were presented to the participants, who hear but do not see the words. 20 words were selected from each 1000 word frequency band and ‘a further 20 pseudo-words that are designed to sound like words in English but are not real words. The number of Yes responses to these pseudo-words allows the score on the real words to be adjusted for guessing and overestimation of knowledge’ (Milton, 2009, p94).

Thirdly, the AuralLex is ‘constructed with the same rigour and on the same principles as orthographic tests. Last but not least, my research location was one of the most modern and international universities in China. It has a mission to ‘align the university with international standards to help its students use English as a tool to explore western culture, and to expand its students’ horizons by teaching and encouraging critical thinking’ (Liu, 2007, p114). In this research site, half of the faculty in the English language centre are native speakers and quite a number of scholars of English speakers work in different departments to deliver special courses in English. English is very popular in campus as there are many extra curriculum activities such as English Lounge, English Corner, Creative Expressing Club, Game fair, ELC Reading Club, ELC Speech Club etc. English seems to become the second language for students. Aurallex is suited to the level of the Chinese University students at intermediate level.

Through a pilot study among native speakers, local English teachers and CUS at intermediate level, the findings showed that learners are sensitive to the frequency of words (see table 4.6 below). The test is based on five frequency bands (1-5K) and there is a steady decline in the percentage of known words from the highest to the lowest frequency band.

Table 4.6 the results of Mean score in Aural lexical test

	Students (Mean value)	NNS Teachers (Mean value)	NS Teachers (Mean value)
N	69	4	3
1000 Frequent words	18.97	19.50	20.00
2000 Frequent words	17.14	19.70	20.00
3000 Frequent words	15.68	19.00	19.67
4000 Frequent words	12.78	17.50	19.67
5000 Frequent words	11.51	17.75	20.00
Error words	6.04	6.50	4.00
Raw score	3804.35	4675.00	4966.67
Adjusted score	2293.48	3050.00	3966.67

NNS = non-native speaker; **NS** = native speaker

More importantly, there are significant differences in the results of the AuralLex test among native speakers, English local teachers in China and Chinese university students at intermediate level. The table demonstrates the results of the phonological vocabulary test. There are clear differences between mean scores of adjusted scores of students, non-native English teachers and native speaker English teachers. The tendency shows a positive

trend in terms of the distinct proficiency levels in English; therefore, this test instrument can test the participants' size and breadth of listening vocabulary and can identify poor performance in a frequency band. Therefore, the Aural-Lex test tool is suitable for use in the Chinese higher education context.

2. Reliability and validity in qualitative methods

'Qualitative validity means that the researcher checks for the accuracy of the findings by employing certain procedures, while qualitative reliability indicates that the researcher's approach is consistent across different researchers and different projects' (Creswell, 2009, p190).

Reliability

In qualitative research, dependability is reliability. Gibbs (2007) has suggested several reliability procedures to include: 'check transcript for mistakes; ensure that there was not a drift in the definition of codes or a shift in the meaning of codes during the process of coding'. In this study, two measurements of reliability were carried out. One is an 'inter-coder reliability' check, which refers to the extent to which two persons agree with the coding of the data (Bryman, 2004, Dörnyei, 2007). Another is 'intra-coder reliability' check, which means the consistency of coding over time (Bryman, 2004).

According to Dörnyei's (2007) guidelines, one of my colleagues was invited to code participants' self-report on their LPs and their causes separately at the beginning and at the end of a semester (details please see 4.5.4 instruments). The Perreault and Leigh (1989) reliability index was used to calculate inter-coder reliability between coders. This reliability index accounts for differences in reliabilities when there are a number of categories. It focuses on the whole coding process. The inter-coder reliability of participants' self-reflection at the beginning of the semester was 0.88 and 0.89 at the end of the semester. The inter-coder reliabilities were high and acceptable (Gremler, 2004). The minor differences identified were in the wording of categories. It meets the criteria of good validity from Creswell's recommendation that 'consistency of the coding should be in agreement at least 80% of the time for good qualitative reliability' (Creswell, 2009, p190).

The intro-coder reliability check was conducted three months after the initial coding of participants' self-report at the beginning of the semester, two months from the initial coding of participants' self-reflection at the end of the semester. The coding was redrawn and checked for level of consistency with the initial coding. The Perreault and Leigh (1989) reliability index at the very beginning of the semester was 0.90 and 0.91 at the end of the semester, showing that the data was consistently categorised into the same or very similar categories. There were no major inconsistencies with the original categories.

Table 4.3 Summary of mixed research instruments and corresponding research questions

Research Questions	Research instruments in a mixed methods approach used to solve research questions
1. What are the major difficulties in LC experienced by Chinese university learners at intermediate level? What causes such difficulties?	<ul style="list-style-type: none"> • University Learners' Awareness of Listening Difficulties & Causes Questionnaire Survey • Self-reflection on LPs and the causes of these problems at the beginning of the semester.
2. What are the content and function words recognition of singleton in K1 after one semester English study?	<ul style="list-style-type: none"> • Aural Lexical vocabulary test at the beginning and at the end of the semester. • Two dictation tests at the beginning and at the end of the semester
3. What contributes to the problem of SWR in CS?	<ul style="list-style-type: none"> • Aural Lexical vocabulary test at the beginning of a semester. • Two dictation tests at basic and intermediate level followed by structured questionnaire on each chunk dictation test at the beginning of a semester.
4. What are the major listening problems that Chinese university learners at intermediate level still experience after one-semester learning? What causes such difficulties?	<ul style="list-style-type: none"> • Self-reflection on LPs and the causes of these problems at the end of the semester.

4.7 Some strategies in data collection

In the process of data entry, some major measures were taken to ensure the effectiveness of data entry. Firstly, some data were deleted as they were considered invalid. For instance, some students participated in the pre-test dictation (at the beginning of the semester), but missed the post-test dictation (at the end of the semester). Secondly, 'Beginning' or 'end' was marked on each participant's paper to avoid misplacing or misusing pre and post dictation papers. Thirdly, after finishing the data entry, I asked my

colleague to double-check the data I had entered. This process turned out to be very helpful, as some of the missing or improper information was remedied. This is especially obvious with regard to the first syllable or the endings of words. Besides, some incorrect data were corrected. Some of these in corrected data had resulted from my lack of prior knowledge, or from my misplacing the data in improper columns in categorizing data. After the errors were corrected, a '√' would be placed on each dictation paper. Then I checked those corrected items again to ensure they had been rectified. Finally, in categorizing the initial syllable recognition within word recognition, I took the strategy of 'acoustic blur,' (Brown, 1990); accordingly, I would include all those beginning syllables into one group, on condition that they had been perceived, even though their followed syllables were not, or just approximately recognized. For instance, when I counted the first syllable 'Ju' in the word 'Julie,' I categorised the words or simple sound clusters like 'july,' 'juli' or simply 'ju' as 'Ju' syllable group

4.8 Summary

In this chapter, the research questions have been presented, and the research paradigm and the reasons why I chose a mixed-methods approach and selection of research instruments in this research have been discussed. The theoretical issues and the practical matters of data collection at the beginning and at the end of the semester have been discussed and justified. In the next chapter, I present the results of listening difficulties and the causes of those difficulties from the perspective of participants' perceptions in their previous learning experiences.

CHAPTER 5 ANALYSIS AND DISCUSSION: IDENTIFYING THE LISTENING DIFFICULTIES AND THEIR CAUSES

5.1 Introduction

This chapter presents the findings from the questionnaire survey and the participants' self-reflection reports before the training programme. It also provides general information about the participants' previous experiences in learning English, identifies listening problems (LPs) normally encountered by Chinese first-year undergraduates when listening to connected speech in English, and examines the possible causes of such problems. In order to contextualise the results presented in this chapter, the findings were analysed and discussed in relation to Anderson's (1995) three-phase model and compared with Goh's study (2000).

5.2 General information on students' prior English learning experiences

Before exploring the participants' actual LPs, it is necessary to have a better understanding of their prior learning experiences in listening comprehension (LC). In an attempt to prioritise the general opinions of the participants on LC, I merged responses which they had marked as 'very important' and 'quite important' in Sections I and II of the questionnaire survey (For details, please refer to Appendix J). The following subsections present the findings from the questionnaire and their analysis, from which three aspects will be

addressed: students' general prior experiences in learning English, their perceptions of the importance of listening and their understanding of the roles of different language skills.

5.3 Findings of prior English learning experiences in the questionnaire survey

Background questionnaire

The questionnaire survey reveals the previous experiences in learning English of the participants. As presented in Table 5.1, nearly two-thirds of the participants (60%) started to learn English at primary school but less than half of them (46%) graduated from what in China are considered 'key' or elite high schools where English teaching is more central to curricular activities. The survey also revealed that almost two-thirds of the participants (65%) had not formally gained any phonological knowledge in their previous English learning experiences before they were admitted to the university where the study took place.

Although there were supposed to be better educational conditions in 'key' high schools, the research participants who had graduated from such institutions had not received sufficient English training, especially in listening and speaking. The fact that this group of participants did not have phonological knowledge also suggested that all the participants would need to receive training in this area, and they might especially need to gain knowledge in the features of connected speech. However, native speakers don't need to receive such training as they acquire them naturally.

On the basis of the above, I formulated my preliminary supposition that a training programme would be worthwhile as it could help the students become fluent in spoken word recognition (SWR) through phonological training.

Table 5.1 General information of University students' learning experiences in LC

Items	Frequency (n = 43)	Valid %
Starting Learning English- from Primary School	26	60.5
Types of High School- Key high school	20	46.5
Whether learn the phonological knowledge-No	28	65.1
For my university study, Listening to English is- Very Important +quite important	39	90.7
For my future needs, Listening to English is- Very Important +quite important	33	76.7
In the process of listening, pronunciation is- Very Important +quite important	38	78.4
In the process of listening, listening vocabulary is- Very Important +quite important	40	93.0
In the process of listening, the skill of translating from English into Chinese is- Very Important +quite important	37	86.1
In my English course, I find listening to English is- Very Important +quite important	31	72.1
In my English course, I find pronunciation is- Very Important +quite important	21	48.9

5.2.2 Students' perceptions on the importance of LC

Table 5.1 presents the participants' perceptions of the roles of LC both at

the time of this study and for their future career. There are interesting discrepancies in the participants' attitudes towards diverse aspects within LC. As shown in this table, the overwhelming majority of the participants (91%) believed listening to English is important for their general university study, and slightly over three-quarters of them (76.7%) thought that listening to English is important for their future needs, with slightly under three-quarters of them (72.1%) believing that listening, as a component in their English course, is important.

There could be a number of reasons for the participants' choices as reflected in these results. To begin with, the results may have been influenced by the participants' university majors or their career plans. If the students majored in the liberal arts or social sciences such as English, Law, and Journalism, they would probably maintain the idea that listening in English is important for their studies as well as their future needs. Secondly, listening in English would have been considered important for those students who had long-term plans to further their study abroad after graduation, as they would normally choose to study in an English-speaking country. Thirdly, their choice of career would have also predisposed them to consider listening as an important skill, as speaking and listening normally play a central role in a number of workplaces such as multinational corporations.

5.2.3 Participants' perceptions of various factors in the listening process

In terms of the listening process, listening vocabulary is seen as the most

important by an overwhelming majority (93%), followed by translation (86%) and then pronunciation (78%). The participants considered that listening vocabulary plays a crucial role in their listening process. This result would be further corroborated in the rest of this thesis.

Most participants also regarded translation skills an important factor in input information processing. This implies that translation is still a strategy that the participants frequently adopted in processing input spoken messages. In this process, they would firstly translate English words into Chinese to acquire the meaning of connected speech. This way of information processing could occupy their processing capacity and create some barriers to their fluent listening, which could be different from the general practice of L1 learners, who would normally process spoken messages almost automatically and immediately.

Similarly, most students had poor knowledge of phonology, as two-thirds of them had not learned phonological knowledge formally, as also mentioned above. These results indicate one important aspect relating to listening in English education in China more generally: phonology is seldom included in the items of the English listening curriculum and English examinations such as CET4, as discussed in Chapter 3. This would help to explain why most participants failed to recognise the important role of phonology in understanding spoken English.

5.2.4 Participants' perceptions of difficult language skills

When asked to rate the relative difficulty of the four language skills (i.e. listening, speaking, reading and writing), the overwhelming majority of the participants (95%) rated listening as their biggest challenge, followed by speaking, writing and reading. This result seems to show that the participants lacked skills in listening the most, which led them to identify listening as their most severe problem. It also reflects the need for Chinese junior and high schools to emphasise listening as an important skill when English teaching, which may actually affect learners' English study at tertiary level.

5.2.5 Participants' perceptions of the causes of difficulties in listening to English

When asked to rate the relative causes of participants' LPs, over 90% of them selected vocabulary as their most important cause of difficulty, followed by background knowledge, memory, pronunciation, and grammar. It is clear that the participants were aware of their lack of vocabulary, even when less than half did not realize the importance of pronunciation in listening.

5.2.6 Summary

The discussion above presents some contradictory ideas in the research participants' perceptions on LC. It appears that most of the participants realized the importance of LC and listening vocabulary, while less than half

of them considered pronunciation as important to their general English learning, and nearly two-thirds of them had never gained any phonological knowledge. These findings point to the importance of listening vocabulary, which will be further elaborated in Chapters 6 and 7, and also to the need for teaching students basic phonological knowledge, which will be discussed in the design and implementation of one-semester instruction in Chapter 7.

5.4 Main LPs students perceived at the beginning of the semester

Based on the results discussed above, I instructed them as both English teacher and a researcher for one-semester in order to enhance the students' LC skills following Field's (2008, p4) principle that 'in setting priorities for skills teaching, we also need to take account of learners' perceptions of their needs'. Therefore, I decided to identify the university students' perceptions of their LPs and the reasons for their problems by means of a questionnaire survey, and examine students' reflections on their past learning experiences. The following are some findings from these methods of data collection.

5.3.1 The results of a questionnaire survey on students' LPs

In the questionnaire, the participants were asked to identify difficulties in listening from five choices: 'never', 'seldom', 'sometimes', 'often' and 'always'. Then the data were collected and entered into SPSS 15.0. In order to prioritize the difficulties the students encountered and find possible

solutions, the items with the highest percentage of ‘often’ and ‘always’ were merged to concentrate on the major difficulties that the students perceived.

Table 5.2 shows the most common LPs that the participating Chinese university students perceived at the intermediate level of English proficiency. Of these ten LPs above, I prioritised the first six ones, which were perceived by approximately half of the students. As the other four were reported by rather low percentages of the participants, they will not be discussed fully in this study

Table 5.2 Summary of students' perceived LPs by the valid percentage

Rankings	Difficulties	Problems: I have difficulty in . . .	Valid %
1	D8	catching the next bit of speech, because I am still concentrating on what was just said	72.1
2	D4	catching the ends of words (-s, -ed etc)	69.8
3	D1	breaking the stream of speech into separate chunks or words	58.1
4	D5	recognising words, even though I know them in written form	51.2
5	D3	holding a chunk of speech or meaning in my memory	48.8
6	D9	understanding the vocabulary in the passage	46.5
7	D7	identifying the sounds of the words correctly	39.6
8	D10	making sense of the grammar	34.9
9	D2	identifying which words the speaker emphasizes	32.5
10	D6	recognising phrases (e.g. catch up with)	25.6

Note: D+ Number indicates the order of the difficulty in the Questionnaire Survey.

The table above reveals that the most common listening difficulty was *‘having difficulty in catching the next bit of speech as I am still concentrating what was just said’*. This difficulty is not unusual for L2

learners, especially for those who are at intermediate level or below. In most of the cases, there might be one or two new or unfamiliar sounding words that prevent them from understanding the information that followed because students had to use more processing capacity to figure out the message. Thus, they had very limited time and capacity for processing the incoming information, which resulted in only partial understanding.

The second most common listening difficulty was '*having difficulty in catching the ends of words (-s, -ed, etc)*'. This difficulty might be related to the phonological knowledge of the participants, especially knowledge of phonemic variations of -s and -ed. These endings posed a challenge to Chinese students as such endings do not exist in their mother tongue, so the participating students were not fully aware of these endings and did not have enough time to ponder over them because of the 'real time' nature of listening. As a teacher, I have also noticed that Chinese students at an intermediate level often ignore or omit those endings when reading texts or pronouncing them in communication with others.

The third challenge was '*having difficulty in breaking the stream of speech into separate chunks or words*', which is related to chunking in phonological knowledge. If students lack knowledge or awareness of the features of connected speech such as linking, assimilation, weak forms and reduction, they are unable to recognise the boundary between chunks or words or segment in streams of speech, which is one of the biggest obstacles

to fluent listening. Chunks are quite different from individual words because unstressed words or words with weak forms within a chunk may produce pronunciation variations of the individual words that make up the chunk.

‘Having difficulty in recognising words, even though I know them in written *form*’ was the fourth most common difficulty, which evidences the differences between listening vocabulary and vocabulary in written form. This will be further explained in the following section of the discussion.

The fifth difficulty was ‘having difficulty in holding a chunk of speech or *meaning in my memory*’, which exposes L2 learners’ limited working memory of holding a chunk of meaning when they listen to connected speech. More detailed discussion of this phenomenon will be given in the following section.

Finally, ‘*having difficulty in understanding the vocabulary in the passage*’, was ranked in sixth place by the participants. This reveals their difficulty in dealing with new or unfamiliar words. Unfamiliar vocabulary may refer to the new words that the participants had not acquired either in written or oral forms, or to the unfamiliar sounding words whose oral forms the participants were not able to recognise but whose meanings they already knew in writing. Unfamiliar words not only affected participants’ ability to make sense of the chunk they were listening to but also impeded the

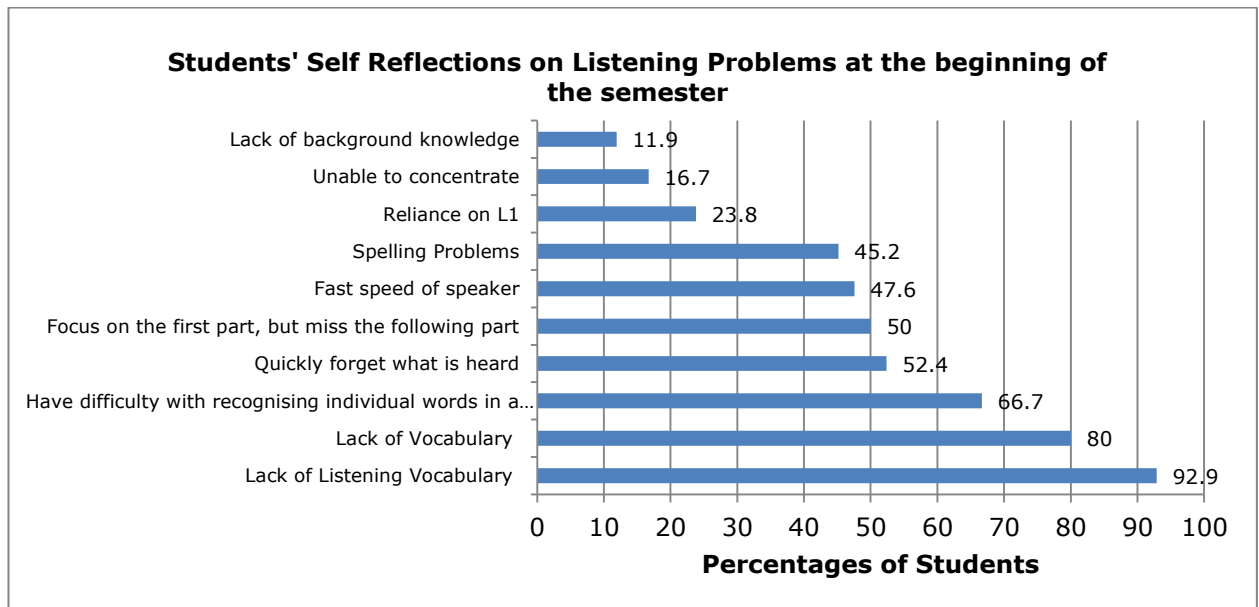
participants' understanding of the following parts of the stream of speech.

It appears that all the above listening difficulties are closely connected with the students' phonological knowledge and the different aspects of listening vocabulary such as recognising vocabulary in the sentences, chunks, and endings of vocabulary, the boundary of vocabulary in chunks and sentences, and the meaning of vocabulary. A more detailed consideration of these issues will be presented in the discussion section below.

5.3.2 Findings of students' self-reflection on their LPs

As for the findings of students' self-reflection reports on their LPs, I coded and categorized their answers into 10 LPs, as shown in Figure 5.1 and causes of these LP. (For details, please refer to Appendices I & J). Of the 10 problems identified through the students' self-reflection reports, five were reported by half or more of the students. The most common problem was 'lack of listening vocabulary', identified by an overwhelming majority (93%). The top three LPs 'lack of listening vocabulary', 'lack of vocabulary', and 'have difficulty in recognizing individual words in a connected speech' are closely related to bottom-up skills, especially to lexical and phonological knowledge.

Figure 5.1 Ten common LPs



5.3.3 Problems of LC related to the three-phase model: perception, parsing and utilisation

As discussed in Chapter 2, according to Anderson (1995) the three stages of LPs are perception, parsing and utilization. Goh (2000) offered a clear illustration of what the three stages suggest. According to her, the problems at the perception stage are mostly related to 'recognizing sounds as distinct words or groups of words'. The parsing stage is concerned with 'various difficulties with developing a coherent mental representation of words heard'. The difficulties experienced in the utilization stage are caused by 'either a lack of prior knowledge or inappropriate application' (p 59).

In other words, the problems with bottom-up skills occur at the perception stage, the difficulties in top-down strategies belong to the utilization stage,

and the problems of the interaction between the bottom-up skills and the top-down strategies are involved in the parsing stage, which includes the interaction between L1 and L2 for L2 learners at lower levels.

Table 5.3 is a summary of the LPs that participating students revealed. Anderson's three-phase model has been used to categorize these reported problems. The table reveals the listening difficulties that students identified in both a questionnaire survey and retrospective self-reflection report. The results of the questionnaire survey indicate that 10 of the reported processing problems belonged to the perception and parsing phases. Eight of them were reported at the lowest stage of perception, and there were only two LPs attributed to the parsing phase. Of the 10 problems, almost two-thirds of the students (62%) experienced the top four common LPs at the perception phase. This shows that the students at the intermediate level had more listening difficulties in the perception phase than the parsing phase (on average, 42% of the students reported difficulties in this phase).

Table 5.3 also reveals the problems the students had with LC in their retrospective self-reflection reports. Of the three phases, an average of more than three-fifths (61%) of the students had difficulties in the perception stage, over two-fifths (42.3%) had difficulties in the parsing phase, and only one-eighth of the participants (12 %) had difficulties in the utilisation phase. It seems the students lacked an awareness of the importance of the utilisation phase as they had not fully reached that stage.

The table shows that the findings of both the questionnaire survey and the students' self-reflection reports reveal an almost consistent trend in participants' LPs, following the three-phase model by Anderson (1995). Chinese university students at the intermediate level have more LPs in the perception phase. At this point, it would be interesting to compare the results of the present study with those of previous research so as to see what similar findings they share and what new findings the present study will be contributing to existing knowledge. This is the main aim of the next section.

Table 5.3 Comparison of Anderson’s three-phase model between a questionnaire survey & retrospective self-report on LPs

Three Phases of LC	A questionnaire survey on LPs	Retrospective self-reports on LPs
Perception	<p>D8: have difficulty in catching the next bit of speech, because I am still concentrating on what was just said (72.1%).</p> <p>D4: Have difficulty in catching the ends of words (69.8%).</p> <p>D1: have difficulty in breaking the stream of speech into separate words (58.1%).</p> <p>D5: have difficulty in recognising words, even though I know them in written form (51.2%).</p> <p>D9: have difficulty in understanding the vocabulary in the passage. (46.5%)</p> <p>D2: have difficulty in identifying which words the speaker emphasizes (32.5%)</p> <p>D7: have difficulty in identifying the sounds of the words correctly (32.5%).</p> <p>D6: have difficulty in recognising phrases (25.6%).</p>	<p>Lack of Listening Vocabulary (92.9%)</p> <p>Lack of Vocabulary (80.0%)</p> <p>Have difficulty with recognising individual words in a CS (66.7%)</p> <p>Focus on the first part, but miss the following part (50.0%)</p> <p>Unable to concentrate (16.7%)</p>
Parsing	<p>D3: have difficulty in holding a chunk of speech or meaning in my memory (48.8%).</p> <p>D10: have difficulty in making sense of the grammar (34.9%).</p>	<p>Quickly forget what is heard (52.4%).</p> <p>Fast speed of speaker (47.6%)</p> <p>Spelling Problems (45.2%)</p> <p>Reliance on L1 (23.8%)</p>
Utilisation		Lack of background knowledge (11.9%)

5.4 Data comparison and discussion

In this section, I will first analyse the difference between knowledge of listening vocabulary and written vocabulary. Next, I will discuss and compare, within the framework of Anderson's three-phase model, the four most common LC problems reported by the participating students in the questionnaire survey, and the five most common LC problems in their retrospective self-reflection reports, as these LPs have been identified and reported by more than half of the participants (see Table 5.4). Finally, I will elaborate on the similarities and differences between my research findings and those of Goh's (2000) concerning LC problems, while investigating the causes of these problems.

Table 5.4 Comparison of LPs prioritised between the questionnaire survey and the self- reflection reports

		A questionnaire survey on LPs	Retrospective self-reflection report on LPs
Problems in LC	1.	D8: have difficulty in catching the next bit of speech, because I am still concentrating on what was just said (72.1%).	Lack of Listening Vocabulary (92.9%)
	2.	D4: Have difficulty in catching the ends of words (69.8%).	Lack of Vocabulary (80.0%)
	3	D1: have difficulty in breaking the stream of speech into separate words (58.1%).	Have difficulty with recognising individual words in a CS (66.7%)
	4	D5: have difficulty in recognising words, even though I know them in written form (51.2%).	Quickly forget what is heard (52.4%).
	5		Focus on the first part, but miss the following part (50.0%)

Table 5.4 presents the LC problems reported by more than half of the students in the questionnaire survey and the self-reflection reports. It is interesting to notice that the problems that the students mentioned here were limited to the perception stage, which is closely related to ‘recognizing sounds as distinct words or groups of words’ (Goh, 2000, p59). This may imply that they lack listening vocabulary or knowledge of phonology.

The implications from the above finding about LPs will be further discussed in the remainder of this section. To illustrate and highlight the problems in a more concrete way, I will include excerpts from students’ reports².

5.4.1 Differences between listening vocabulary and vocabulary in written form

From the students’ self-reflection reports at the beginning of the semester shown in Table 5.4, we can observe that the overwhelming majority regarded their LPs as ‘lack of listening vocabulary’ and ‘lack of vocabulary in general’. Their reports indicate that they had some awareness of the differences between listening vocabulary and vocabulary, as well as some metalanguage to describe them.

Excerpt 1

² Participants’ names have been changed into numbers to ensure anonymity.

Student 14: I cannot write those words I seem to be very familiar with, so I have difficulties in listening vocabulary.

S15: Lack enough listening vocabulary and having difficulties in differentiating words of similar pronunciations.

S6: I am lack of enough listening vocabulary and I am often confused because of the words of similar pronunciation.

Excerpt 2

Student 12: I cannot catch some words or phrases as I am not familiar with those words, which makes me easily misunderstand the other words or phrases.

S17: I have Difficulty in catching the key words and then difficult to understand the whole sentence

S8: Lack of the knowledge of vocabulary and pronunciation, cannot differentiate linking words and words with similar pronunciation.

As can be seen from the two excerpts above (more excerpts please see appendix K), listening vocabulary in their minds refers to the words with which they are familiar or they know in their written forms, but words they do not recognise in their spoken forms and thus are not part of their listening vocabulary. Most of the students attributed their LPs to the lack of listening vocabulary (see Excerpt 1 for an example). That means they had some difficulties in identifying by sound the words they know in writing.

Coupled with this, four-fifths of the participants (80%) regarded ‘lack of vocabulary’ as one of the major reasons for their poor LC in connected speech. In this case, the participants had poor ability to decode acoustic input because there were some new words with which they were not familiar in either their spoken or written forms (see Excerpt 2).

In sum, the majority of the students (on average more than 85%) held that their LC broke down due to lack of vocabulary when they listened to connected speech. This includes both their listening vocabulary and vocabulary in a general sense. In other words, the biggest listening problem for them seemed to be their inadequate SWR, which hindered their full understanding of connected speech.

5.4.2 5.4.2 Comparison and contrast between the findings about LPs and Goh’s (2000) research findings

The integration of a questionnaire survey and self-reflection reports on LPs in this research, as discussed above, offered valid and complementary findings. As shown in Table 5.4, ‘Lack of listening vocabulary’, the most common problem in the self-reflection reports, is the same as that mentioned in the questionnaire survey, which is ranked as the fourth most common problem in the questionnaire survey (D5: have difficulty in recognising words, even though I know them in written form).

Similar findings in exposing Chinese students’ listening difficulties have

been reported by Goh (2000). In Goh's (2000) research, five common LC problems were identified. The most common one was 'quickly forget what is heard' in the parsing phase, and the next one was 'do not recognize words they know' in the perception phase, followed by 'understand the words but not the intended message' in the utilization phase. The fourth common one was 'neglect the next part when thinking about meaning' in the perception stage, followed by 'being unable to form a mental representation from words heard'.

There are some similarities and differences between the findings of the present research and those of Goh's (2000), mainly from a cognitive perspective. As displayed in Table 5.4 above, difficulty 5 (D5) 'have difficulty in recognising words, even though I know them in written form' in the survey questionnaire and 'lack of listening vocabulary' in the self-reflection reports roughly parallel Goh's second most common listening problem 'do not recognise words they know'. Difficulty 8 (D8), 'have difficulty in catching the next bit of speech, because I am still concentrating on what was just said' and 'Focus on the first part, but miss the following part' are the same as Goh's fourth most common problem 'neglect the next part when thinking about meaning'. Difficulty 1 (D1), 'have difficulty in breaking the stream of speech into separate words' and 'Have difficulty with recognising individual words in connected speech' is similar to Goh's 10th listening problem; the fourth most common problem in the self-reflection reports from this study is the same as Goh's most common problem, 'Quickly forget what is heard'.

There are also some differences between the findings of this study and those of Goh's (2000). In this study, the second most common problem is 'D4: Have difficulty in catching the ends of words' in the questionnaire survey and 'Lack of vocabulary' in the retrospective self-report which has not been reported in Goh's research findings. Similarly, Goh's reported difficulty 'Unable to form a mental representation from words heard' is absent from both the questionnaire survey and participants' self-reports in the present study.

As indicated above, there are similarities and differences between Goh's (2000) study and my research in terms of listening difficulties among Chinese university students. Some difficulties are commonly held by the students but ranked differently on the list of difficulties. These differences may be accounted for by the differences in the research backgrounds (e.g. general L2 context vs. higher education context) and the participants (e.g. students of L2 vs. students of academic English). However, both studies reveal that students' bottom-up skills need to be improved first. The reasons for such difficulties will be analysed in the following section.

5.5 Investigating the causes of LPs

In this section, a detailed analysis and discussion about the reasons for the LPs mentioned above will be presented.

5.5.1 Quickly forget what is heard

'Quickly forget what is heard' was the fourth difficulty on the list of LPs revealed from participants' self-reflection reports in this research,

and was also the biggest problem in Goh's (2000) study. This problem occurs at the parsing stage, which concerns the interaction between bottom-up and top-down processing. In cases when either of these two forms of processing breaks down, comprehension would then be unsuccessful. It seems that parsing is crucial to LC. However, without efficient SWR at the perception phase, parsing cannot or will not happen.

Goh's findings concur with my findings from the participants' self-reflection reports. Over half of the students in the present study reported that they easily forgot what they had just heard because of their poor short term memory, as indicated in the reports of Students 5 and 16.

S5: I know it will be better to write the whole sentence after I listen to it, but I often forget it soon and remember only a few words.

S16: Poor short-term memory

The findings above seem to echo those of some earlier studies. When attempting to account for the above listening failure, researchers have used the concept of short memory capacity (working memory) (Anderson, 1995; Goh, 2000; Field, 2008), as explained in Chapter 2. For instance, according to Goh (2000), although 'the students recognized words in the text and had apparently understood what they heard, they soon forgot the contents because of limited capacity of their short-term memory' (p60).

However, the limited capacity of the short-term memory does not seem to be able to explain fully why the listeners had not developed full understanding. To explore this, I will turn to Field's (2003) and Randall's (2007) notions of the capacity of working memory, as discussed in Chapter 2, which stresses the functional aspect of short-term memory. The working memory is temporary and limited. The memory of what has just been heard is fleeting, and can vanish anytime, or be replaced with a newly input spoken message. The notion of short-term memory, which is more like a store, would not be sufficiently dynamic to explain why listeners would soon forget what they have just heard. Actually, in the process of the interaction between the perception and parsing phases, various difficulties could have arisen.

In the case of soon forgetting what has just been heard, the difficulty can be attributed to learners' inadequate bottom-up processing abilities. Randall's (2007) interpretation offers convincing evidence. In the process of listening, the learners' previous processing capacity is occupied by their bottom-up processing at 'graphemic morphological and syntactical level'; as a result, there is no room in their working memory to accommodate new incoming textual information (p96). Similarly, Field (2008, p156) argues, 'If decoding is uncertain and makes heavy demands upon attention, then it leaves no memory resources spare for interpreting what has been heard or carrying forward a recall of what was said earlier.'

In other words, in second language learners' listening process, more capacity of the working memory is devoted to the perception phase, less capacity to the parsing phase, and even less to the utilisation phase. Listeners are so intensively preoccupied with language forms that there is not enough 'processing capacity to pay attention to wider features of topic and context (Randall, 2007, p96). In the final analysis, the listening difficulty of soon forgetting what has been heard can be attributed to the listeners' poor bottom-up processing skills.

It is therefore necessary to develop learners' working memory, which will, in turn, enhance their basic bottom-up processing capacity, especially in chunk recognition training. To achieve this aim, Randall recommends 'increasing the size of the language 'chunks' being held in the working memory and by helping the learner to comprehend larger chunks and transfer them into meaningful units' (Randall, 2007, p 100). This understanding contributed to my design for dictation as well as the plan for English training in the future, as will be shown in the following chapters.

5.5.2 Lack of listening vocabulary

This is the most common listening problem in the self-report, fourth in the questionnaire survey, but the second most common listening problem identified in Goh's (2000) study. This is fundamentally a problem at the perception phase, as Goh has noticed and a serious challenge and significant

problem for Chinese university students at the intermediate level of English. As English and Chinese have vastly different word forms and pronunciation systems, lack of listening vocabulary has consistently been an issue for learners of English. There are seven causes identified for this listening problem, based on the following findings of the questionnaire, as seen in Table 5.5.

Table 5.5 Reasons for Difficulty 5 in the questionnaire survey

D5. Have difficulty in recognising words, even though I know them in written form			
Often +always		Frequency	%
		22	51.2
Reasons (Yeah)		Frequency	%
1	don't have a large enough listening' vocabulary	30	69.8
2	am not familiar with different accents of English	28	65.1
3	don't know how the pronunciation of words changes in CS(e.g. linking, weak forms, assimilation)	25	58.1
4	don't know how the words should be pronounced correctly	24	55.8
5	Have not focus on pronunciation	17	39.5
6	Cannot concentrate when listening to English	16	37.2
7	Cannot identify the sounds that don't exist in Chinese	7	16.3

Table 5.5 shows that more than two-thirds of the students (70%) held that the difficulty in recognizing words was mainly caused by 'don't have a large enough listening vocabulary', which means they had enough written vocabulary but not sufficient listening vocabulary. The second reason is 'not familiar with different accents of English'. In this section, I will discuss how this difficulty arose mainly from two perspectives: the fundamental phonological differences between Chinese and English, and traditional English teaching practices in education in China.

There are many significant differences in phonology between Chinese characters and English words, which makes learning English a serious challenge for native Chinese speakers. Firstly, English is a stress-timed language, as has been reviewed in Chapter 2. English words are ‘the integration of letters and syllables that are processed according to their sound, meaning and syntax’ (Hill, 2005). In contrast, the Chinese language is a syllable-timed and tonal language in which the tones convey differences in meaning. The meanings of words vary from tone to tone. That is to say, it uses the pitch movement of a syllable to distinguish word meaning. This feature of the Chinese language can easily cause confusion in understanding connected speech in English.

Therefore, Chinese SWR depends on the tones in connected speech rather than pronunciation. Chinese English learners tend to focus on the visual forms and tones as the written forms of Chinese characters with different tones playing a very important role in the acquisition of Chinese. This is why, when they learn English, most Chinese learners put more emphasis on acquiring and developing written vocabulary rather than listening vocabulary, which evidences the influence of their L1.

In the participants’ English learning experience in high school, nearly two-thirds (see Table 5.1) reported that they had not gained phonological knowledge. Moreover, six of the seven reasons listed in Table 5.5 for

difficulty recognizing words are closely related to phonological knowledge. The indication is that the majority of the students have not received systematic phonological training. This might be one of the consequences from the examination-oriented teaching and learning style applied in traditional classrooms, especially in schools in rural areas. In big classes, as is usually the case in China, reading and writing are the focus of learning while oral skills do not receive enough attention in the curriculum of either junior or high schools, as was discussed in Chapter 3.

As Hill (2005) has observed, ‘in many Chinese classrooms, less emphasis is put on the spoken form of English words and more is given to reading and writing’. Zou (2005) and Cai (2007) also suggest that English classroom teaching in China is ‘test-oriented’ and therefore puts more emphasis on reading and writing. This would explain the students’ poor listening vocabulary and the lack of proper training in phonological knowledge, and their lack of listening vocabulary.

5.5.3 Difficulty in understanding the next part of speech

According to Table 5.6, the most common problem reported by over two-thirds of the students in the questionnaire and half of them in their self-reflection reports was that they did not understand the subsequent parts of the input due to an early problem such as one or more unknown or unfamiliar words by sound in connected speech. As Goh (2000) has suggested, this problem proves that the perception, parsing, and utilization in LC are recursive and overlap.

Table 5.6 Reasons of difficulty in the questionnaire survey

Often +always (N=43)		Frequency	%
		31	72.1
Reasons (Yes)		Frequency	%
1	translate from English to Chinese when listening	35	81.4
2	spend a long time trying to identify unfamiliar words or phrases	29	67.4
3	don't have enough background knowledge	27	62.8
4	don't have a large enough 'listening' vocabulary	25	58.1
5	don't have a good short-term memory for English	23	53.5
6	feel nervous when listening to English	13	30.2
7	Cannot concentrate when listening to English	10	23.3

As shown in Table 5.6, reasons two and four for this problem are associated with the perception stage, as some unknown or unfamiliar words in sound impeded students' full understanding, leading to the participants' being unable to process the following part. Reason two, 'have not enough background knowledge'—which belongs to the utilisation stage, was identified by almost two-thirds of the participants (63%). Reasons one and five contributed to the parsing stage as they involved interaction between L1 and L2 and working memory between the perception phase and the utilisation phase.

More than four-fifths of the participants (81%) thought this listening problem was caused mainly by the limited capacity of their working memory in translating from English into Chinese when they were listening. It seems that translation in the process of LC plays a very important role

despite the fact that ‘traditional word-for-word translation has rightly been criticized for its inefficiency as a method for text comprehension and language production’ (Randall, 2007, p165).

Two interesting findings for the causes of this problem should be mentioned here. One is that nearly one third of the students reported that it was closely related to affective factors like language anxiety (nervousness), while nearly one quarter of them gave the influence of their concentration in LC as an explanation. Therefore, this listening problem not only concerns the three phases of LC but also students’ affective factors.

In relation to the role of the unfamiliar words in the process of listening, Goh (2000) identified it as ‘neglect the next part when thinking about meaning’, the fourth most common problem in her study. She explained that the students reported they were missing the next part of a text when they stopped to think about unfamiliar words or the interpretation of a segment of text. However, the participants in this study missed the following part of the text when they were still involved in bottom-up skills such as word recognition of familiar words, which means that they knew the words by sight rather than by sound.

This implies that when students know a word by sight it does not necessarily mean they also know it by sound. Actually, Goh (2000) had already noticed this language learning phenomenon in her explanation for her second most

common problem, ‘Don’t recognize words they know’. Although students know certain words by sight, they cannot recognize them by sound. That is to say, their skill for recognizing spoken words or listening vocabulary is still underdeveloped, especially in the case of students at intermediate level. Hence, we should also bring our attention to the internal workings of familiar words into the discussion of why the students could have missed the next part when entangled in an attempt to understand a previous part of a stream of speech.

5.5.4 Difficulty in understanding the word endings

Table 5.7 Reasons for difficulty 4 in the questionnaire survey

D4. Have difficulty in catching the ends of words (-s, -ed, etc)			
Often +always		Frequency	%
		30	69.8
Reasons (Yes)		Frequency	%
1	can’t distinguish between sounds that don’t exist in Chinese and between similar sounds	36	83.7
2	don’t know how the pronunciation of words changes in CS (e.g. linking, weak forms, assimilation)	32	74.4
3	Have not realized the ends of words	21	48.8
4	Don’t know enough grammar	20	46.5
5	Cannot concentrate when listening to English	15	34.9
6	Have not learned the knowledge of word endings	9	20.9

The difficulty that Chinese students experience in catching word endings can be mainly attributed to the influence of their L1. As Pemberton (2004) noted, Chinese listeners have been found to have a comparatively reduced sensitivity to grammatical features because of an uninflected L1. Over two-thirds of the students found it difficult to catch word endings such as –s, -ing and -ed. As can be seen from Table 5.7 below, the students identified six reasons for this problem. Of the six reasons, over three-quarters of the students held that they could not ‘distinguish between sounds that don’t exist in Chinese, and between similar sounds’.

Rogerson-Revell (2011) has noted that learners of English may have difficulties in phonemes that do not exist in their own language. They may replace them by the ‘nearest’ phonemes in L1. In my teaching experience, I have found that Chinese students mispronounce phonemes which do not exist in their L1. For instance, they might mispronounce / θ / as in ‘think’ and pronounce the word ‘thin’ as ‘flink’ or ‘sink’, as the nearest familiar sounds such as /s/ or /f/ in this case. As a result, they would both hear and say /s/ or /f/ in ‘think’. Similarly, in English much information is conveyed by using auxiliaries and verb inflections. For example, the endings –s for the plural forms of nouns, or -s , -ed and -ing for verb endings play important roles in the knowledge of the syntax in English, and they stand for different grammatical meanings such as plurality, things happening in the past or things happening at the moment of speaking.

However, in Chinese there are no such syntactical features as they are

expressed by means of different Chinese characters. Combinations of characters, for example, ‘Guòqù’, or ‘Yíqián’ are used to express the past tense and ‘Hái méiyǒu’ to convey the present perfect tense. So, the concept of time expression in Chinese is not reflected by different tenses and verb forms, as Chinese is an uninflected language and carries meaning through word order. What is more, pronunciations of these endings in English tend to be unstressed as they are located at the ends of words, and in their weak forms, especially in connected speech. For these reasons, Chinese students usually find it difficult to recognize word endings in spoken English.

The second most common cause for this problem is ‘don’t know how the pronunciation of words changes in connected speech’, indicated by nearly three quarters of the respondents. In spoken English, some words have a weak form and a strong form in connected speech. For example, the strong form of the word ‘are’ is /ɑ: /, with its weak form being /ə/. The strong form of the word ‘and’ is /ænd/ with its weak form being / ə nd/ or / ə n/. In connected speech, weak forms are more frequent than strong forms. As a consequence, if learners are not very familiar with the pronunciation of the weak forms of the words, they will have difficulty understanding them in connected speech.

The other four reasons indicated by less than half of the research participants tend to reveal that they need to enhance their recognition of spoken word endings, as shown in the third ‘Have not realized the ends of

words', the fourth 'Don't know enough grammar' and the sixth reasons 'Have not learned the knowledge of word endings'. This seems to indicate that the cause for participants' difficulty in understanding word endings could be the result of their inadequate phonological awareness of word endings.

In sum, the six reasons for their difficulty in understanding word endings, especially the first two, which were indicated by over half of the research participants, are essentially related to phonological knowledge including pronunciation of endings, linking, weak form, reduction and assimilation.

5.5.5 Difficulty in breaking down the stream of speech

This problem is the third most common problem identified both in the questionnaire survey by nearly 60 per cent of respondents, and in the self-reflection reports by over two-thirds of them. They reported not being able to 'break stream of speech up into separate words or phrases when listening to English'. In other words, students could not 'chunk streams of speech into recognizable words or phrases', which was also mentioned in Goh's (2000) study.

Goh (2000) explained that this problem had to do with the students' attention. However, I think it is also related to bottom-up processing such as students' skills in word recognition. This observation has been also suggested by Vandergrift (2004), who stated that lexical segmentation and

word recognition skills are significantly related to bottom-up processing.

Table 5.8 Reasons of Difficulty One in the questionnaire survey

Often +always (N=43)		Frequency	%
		25	58.1
Reasons (N =43)Yeah		Frequency	%
1	Don't have a large enough vocabulary	36	83.7
2	Cannot understand the words I just listen to	36	83.7
3	Don't have enough listening vocabulary	35	82.6
4	The speaker's speed is too fast to catch	35	81.4
5	Don't know how the pronunciation of words changes in connected speech (e.g. linking, weak form & assimilation)	35	80.4
6	Practice little	33	76.7
7	Don't know the rules of sentence stress in English	18	41.9
8	Cannot concentrate when listening to English	12	27.9

As can be seen in Table 5.8 above, there were eight causes which, according to the respondents, contributed to this listening problem. Among them, the first three reasons concern their lack of vocabulary including those lexical items with which they are familiar by sight but unfamiliar with by sound (listening vocabulary) as well as new vocabulary, with which they are unfamiliar both by sight and by sound. The following excerpts from students' self-reflection reports can support this claim.

S3: I seem to be familiar with a word, but cannot identify its exact meaning.

S13: I find it difficult to understand the sentences, as I don't know the meanings of some words or phrases

S28: Sometimes I cannot catch the meaning of a sentence because of vocabulary or misunderstanding its meaning.

Therefore, findings from the first three reasons suggest that lexical knowledge may have a significant impact on LC in connected speech. These findings are consistent with those of other previous research (Kelly, 1991; Goh, 2000; Gao & Pemberton, 2011).

The fourth reason is 'the speaker's speed is too fast to catch' identified by over four-fifths (over 80%) of the students. This is actually because they did not have enough capacity of the working memory to deal with listening vocabulary or unknown words so that they felt, often wrongly, that the speed was too fast to make sense of the listening text.

Concerning the fifth most common reason for this problem 'Don't know how the pronunciation of words changes in connected speech (e.g. linking, weak form and assimilation)', over three quarters of the students referred to it. As the following students remarked upon the cause of this problem in their self-reflection reports, they could not distinguish the boundary between neighbouring words in connected speech. Even when they might recognise isolated words by sound, they still had difficulty in identifying them in connected speech because the pronunciation of isolated words might have undergone changes when put into connected speech.

S3: I have never learned any knowledge of linking in my high school, so I find it difficult to understand the linking words in the sentences.

S4: I often misunderstand or make some mistakes in weak forms or linking among words when I listen to common and authentic oral English, because I either misunderstand or do not know how to deal with them.

The sounds of isolated words can be changed through assimilation, weak form, and linking in chunk or group words such as linking between consonants, between vowels, between a consonant and a vowel. If the students have no or little knowledge of phonology, then they would find it difficult to recognise individual words in connected speech. They often mistake them for other words with similar pronunciations. Koster's findings (1987), for example, reveal that assimilation across word boundaries has a negative impact on non-native speakers' perception.

In addition, over two-fifths of the students (49%) thought 'Don't know the rules of sentence stress in English' could cause this listening problem, which was also closely related to phonological knowledge. If students have a good command of phonological knowledge such as the stressed syllable of a word and stressed words in sentences, they can save their working memory capacity. If they know how the words are grouped into phrases, how these phrases are structured into sentences and how these sentences are related to each other, they can then enhance their capacity for word recognition in connected speech.

Reasons six ‘practice little’ and eight ‘cannot concentrate when listening to English’ in the above table belong to the affective factors. Although this study did not look at affective factors in listening, I believe these problems can be minimized if students practice listening more frequently and are helped to pay more attention to features of CS.

In short, the main contributing factor to Chinese university students’ LPs is their inadequate phonological knowledge and word recognition capacity. When they focus on word recognition, especially unknown words or words familiar by sight, much of their processing capacity or working memory is taken up because of limited phonological knowledge. They do not have enough time to process the new and following input message, let alone use their prior knowledge to infer or guess the meaning of the words they are listening to (For participants’ more excerpts, please refer Appendix L).

5.6 Summary

Based on the above discussions, we can conclude that the common LPs are largely related to students’ poor phonological knowledge and insufficient word recognition in the context of bottom-up skills in connected speech. Accordingly, frequently known word recognition and phonological knowledge are the most important skills that need to be cultivated in both the teaching and the learning of the listening process in L2.

In this study, the LPs reported by Chinese university students at an intermediate level often occurred at these three phases: parsing, perception

and utilization. However, the most common problems belong to the bottom-up skills rather than top-down strategies, especially word recognition and phonological knowledge which are necessary for LC.

Therefore, both students and teachers should develop a greater in-depth understanding of the fact that phonological knowledge and word recognition are essential and important skills for LC, and should be the focus of both the teaching and the learning of listening as a skill, especially at the intermediate level.

Chapter 5 explored research participants' own perceptions of listening difficulties and the causes of these difficulties. However, their sense of listening difficulties might not necessarily reflect their real problems. For the sake of triangulation, Chapters 6 and 7 will integrate the results from dictations and their transcriptions with questionnaires, investigating how the students performed in real-time listening practice and how the dictation results differ from those deduced from questionnaires and self-reflection reports.

CHAPTER 6 EXPLORING THE EFFECTS AND IMPORTANCE OF SPOKEN WORD RECOGNITION ON LISTENING COMPREHENSION

6.1 Introduction

Chapter 5 explored the main listening problems (LPs) that the Chinese university students (CUS) participating in this study perceived in their previous learning experiences, and examined the possible causes of these problems through a questionnaire survey and students' self-reflection reports. The discussion revealed that the main LP concerned their limited listening vocabulary; that is to say, inadequate recognition of spoken words resulted in an incomplete understanding of connected speech. In addition, the findings suggest that a lack of phonological knowledge contributed to their insufficient spoken word recognition (SWR) in listening comprehension (LC).

However, students' perceptions of their LPs might not reflect their problems when listening to real-time connected speech. As Hasan (2000, p137) claims in her study, 'learners' perceptions of their LPs may or may not correspond to what actually happens as some factors which the listeners may not be aware of may interact and influence learners' perceptions'. In fact, students might not be aware of some problems, especially those that happen in the process of listening, as "the transitory nature of listening appears to be a major cause of L2 listener anxiety, leading to the often-expressed conviction

that native speakers ‘speak too fast’ or ‘swallow their words’ ” (Field, 2008:27). The transient and irretrievable process means that listeners do not have time to think over previous information or listen to it again to obtain a better understanding.

As discussed in Chapter 4, to compensate for this drawback I used dictation as a way to gain new insights into how students performed in SWR in real time CS. In recommending appropriate training for students’ word recognition, Field (2008) suggests the use of dictation, as it offers a chance for students to display their real ability in identifying words and is also convenient for instructors. As he argues, ‘The best resource at the teacher’s disposal is dictation.’ (p88). This idea encouraged me to employ dictation as one of my research tools to know more about the word recognition difficulties that CUS encounter in continuous speech.

In this chapter, I explore linguistic properties of the dictation texts and students’ specific LPs and the causes of these problems as measured by two dictation texts at different proficiency levels at the beginning of the semester.

6.2 linguistic properties of the dictation texts

My dictation texts are from a series of authorised NorthStar text books for L2 learners published by Pearson Education. There are two strands for students, ‘Reading and Writing, and Listening and Speaking, for each of the five levels, which provide a fully integrated approach for students and

teachers' from <http://www.pearsonlongman.com/ae/northstar3e/about.html>.

The reason I chose this book is that my students at intermediate level were using these two strands '*Reading and Writing, and Listening and Speaking*'. After having several discussions and consulting with my two supervisors about texts for dictation, we finally decided to choose three dictation texts of basic (lower than participants' actual proficiency level), intermediate (participants' actual level) and high intermediate levels (higher than participants' actual level) to examine the extent to which intermediate-level Chinese university students are able to recognise words in connected speech, particularly the most frequent words (K1: 1-1000 frequency band) which make up the vast majority of any spoken text. Based on the results, we decided which text would be appropriate to identify participants' online listening problems well at intermediate level.

The majority of K1 in these two texts are covered in the basic text and intermediate text. The reason for the choice of texts with one or two lexical chunks that have infrequent words or low reused words e.g. 'maggots' in the chunk of "Doctors are using maggots" is that we intended to measure the extent to which some infrequent words or unfamiliar words (K5+) have an impact on participants' frequent words recognition in their chunk understanding. In other words, it is to measure whether listeners focusing on the words with low reuse potential will miss part of the incoming input, made up of 1000 frequent words with which they are very familiar. If these most frequent words are not recognised, the question is whether they need

more training in recognition of these words until they can recognise them automatically.

After this pilot study, two dictation texts were finally selected in main study from this series of textbooks, *Listening and Speaking* respectively, including the texts at basic and intermediate levels as the online listening difficulties can be identified through these two texts. We cancelled the text at high intermediate level as it was too difficult to identify online listening problems. It revealed no clear differences in spoken word recognition between individuals. Most students recognised only a very limited number of similar words.

An analysis of the linguistic properties of the dictation text

These two listening texts are written with due consideration of spoken language as they are not lexically dense and grammatically complex, based on the following analysis. I will elaborate them in detail from the point of view of linguistic features. The following presents an analysis of the main linguistic features in the two listening passages: frequency of spoken words, grammatical patterns, text length and sentence length.

Table 6.26 the summary of linguistic properties of the dictation texts

Linguistic Properties		Basic Text	Intermediate Text
Total number of words		125	127
Word families		53	68
Frequency (BNC) Level			
	K1	90% (coverage of basic text)	80% (coverage of intermediate text)
	K2	5%	10%
	K3		1% (genetic, shine)
	K4	3% (nanny)	
	K5 +		4% (insects, maggots & fireflies)
Grammatical Forms		Simple present tense	Simple present tense; present progressive tense; passive voice; perfect past tense.
Number of simple sentences		12 simple sentences	11 simple sentences
The longest length of sentence		19 words	18 words
The shortest length of sentence		5 words	7 words

BNC = British National Corpora; K1 = 0- 1000 represents knowledge of the first thousand most frequent 1,000 words; K2 = 1001-2000 the next most frequent 1,000 word, and so on.

Vocabulary can be classified into three or four levels, mainly in terms of how often it occurs in the language (its frequency) and how widely it appears (its range) (Nation, 2008). ‘The most important group of words is the high frequency words of the language’ (Nation, 2008, p7). My research investigated how well the intermediate learners did in the recognition of singletons from the perspective of The British National Corpus (BNC), with a focus on the K1 area. Table 6.26 presents a summary of the linguistic features of these two dictation texts, including frequency levels of the BNC such as K1 (0-1000 word frequency); K2 (1001 - 2000 word frequency); K3

(2001 - 3000 word frequency); K4 (3001-4000 word frequency) and off lists of BNC word frequency.

After checking these two texts through Frequency Level Checkers to see which words are high frequency or low frequency in the following website <http://language.tiu.ac.jp/flc/> , we can see clearly from Table 6.26 that there are 12 sentences and 125 tokens or words altogether at basic text level, of which the vast majority are in the K1 frequency band (113 words). 4.8% of them belong to the K2 frequency band (6 words), 3.2% are K4 frequency words (4 words) and 1.6% of them are in the off-list (2 words). All the sentences use the present tense. While there are 11 sentences and 128 tokens or words altogether in the intermediate text, more than four-fifths fall into the K1 frequency band (103 words) and one tenth belong to the K2 frequency band (13 words). The rest of the words are scattered over the other bands. It indicates that the construction of these two texts matches intermediate level learners so well that, through these texts, we can identify the online listening problems of intermediate level CUS.

In summary, both these texts show clearly that they are made up of simple, rather than complex, sentences and grammar. They have a low “lexical density” and are grammatically simple. These passages were written with due consideration of the difference between written and spoken language. They mirror the linguistic features of spoken texts.

6.3 The importance of the recognition of chunks at the beginning of the semester

This section presents the findings of chunk recognition and the possible causes for failure of recognition in two dictation texts. It then discusses chunk recognition in both dictation texts. On this basis, I identify the importance and impact of chunk recognition on LC in connected speech for CUS at intermediate level. In the remainder of this section, I will elaborate on these issues.

6.3.1 Chunk recognition and its significance

As reviewed in Chapter 2, chunk recognition is different from individual word recognition or the understanding of a whole sentence, as a chunk has more stable meaning than an individual word. Accordingly, I designed chunk dictations at both basic and intermediate levels with the following two considerations. Firstly, chunk recognition is a complementary way to understand word recognition as it is concerned with the comprehension of a semantic unit rather than single word identification. Secondly, it contains most of the features of connected speech and may trace and identify the causes of participants' LPs. With this in mind, I proposed two texts at different levels in terms of material content, vocabulary selection and sentence structure in order to see how students would process listening tasks of different levels of difficulty.

6.3.2 Scoring criteria for chunk level

As for the marking criteria for the chunk dictation test, I scored the participants' transcriptions in terms of an understanding of a whole chunk rather than individual word. Understanding is more important than correct spelling of individual words as in real life we sometimes cannot understand or spell all the words correctly in a unit of spoken language, but we understand the main idea anyway. Dictations are not designed to test participants' spelling, so 'spelling mistakes should therefore be ignored in cases when it is obvious that the mistake is indeed a simple spelling mistake' (Buck, 2001, p75). Therefore, I would adopt a lenient scoring method to measure participants' chunk recognition, as illustrated below.

1 point was awarded:

- If the spelling of target word in chunks was correctly transcribed according to either UK or US conventions (e.g. center or centre).
- For correctly spelled abbreviations (e.g. United States → US)
- If compound nouns were separated into two words (e.g. firefly → fire fly) or separated words were merged into compound word (e.g. every day → everyday)
- If the words were correctly recognized, but in the wrong sequence (e.g. eat only → only eat).
- If the basic forms of words were correctly recognized, but just missing -s of plural forms (e.g. families → family).

0 point was awarded:

- If the word was not attempted
- For incorrect words (e.g. injury → injuries; interests; ingely; injure; injurey)
- If a word-final morpheme was incorrectly added, omitted or altered (e.g. used → using; use)

In order to arrive at a scoring system that was both fair and efficient, the data were scored twice.

6.3.3 Results of chunk recognition in the basic text level at the beginning of the semester

As mentioned in Chapter 4, the basic text consists of 18 chunks and is followed by a post-dictation questionnaire to establish the reasons for failure in the recognition of each chunk. I intended to examine how well students did in chunk recognition and why. To reach this goal, I combined findings from students' questionnaires relating to chunk access with the observation of their actual performance in chunk dictation, as different perspectives towards chunk recognition could reveal complementary interpretations. Table 6.1 presents a summary of the recognition of 18 chunks in the basic text and the three most common reasons given for failure in the recognition process.

As Table 6.1 indicates, the students recognised just over a quarter of the 18

chunks in the dictation. There are three main reasons for this low chunk recognition rate: ‘lack of listening vocabulary’, ‘lack of vocabulary knowledge’, and ‘lack of phonological knowledge’. The findings suggest that chunk recognition is closely connected with listening vocabulary, especially with content words as they carry the main meaning in chunks. Therefore, it appears that if students have a good level of recognition of content words, chunk recognition would correspondingly increase.

Table 6.1 Summary of the proportions of 18 chunk recognition and the reasons for chunk recognition problems at the basic text level

Basic text level	
18 Chunks & their Reasons	Average Valid %
18 Chunks	27.0
Lack of vocabulary knowledge	52.4
Lack of listening vocabulary	63.0
Lack of pronunciation	41.3

The above three reasons for chunk recognition difficulties are based on the participants’ perceptions. However, their own observations could be somewhat different from their actual performance in chunk recognition, and findings from alternative data collection methods could offer different observations. Thus, the analysis of chunk recognition in the dictation text will provide complementary findings, as displayed in Table 6.2 below.

According to Table 6.2, the chunk with the highest rate of recognition is Chunk 3. It indicates that the students are more confident in short chunks

made up of frequent words. By contrast, the chunks with the lowest rates of recognition are Chunks 1 and 16 with only a 2.4 per cent recognition rate, followed by Chunks 6 and 18 with a recognition rate of less than 5 per cent and, lastly, Chunks 8, 11, 12, and 13 whose recognition rates are slightly above 7 per cent, as demonstrated in Table 6.3 below.

Table 6.2 The first five highest rates of chunk recognition at the basic text level

Rank	Chunks	%
1	Chunk 3: Most people with young children work	85.7
2	Chunk 2: Today the topic is childcare.	73.8
3	Chunk 15: in the family's home every day	71.4
4	Chunk 5: In some families,	59.5
5	Chunk 17: to tell us about the job	40.5

Table 6.3 The five lowest rates of chunk recognition at the basic text level

Rank	Chunks	%
1	Chunk 1: Good afternoon and welcome to the Julie Jones show. Chunk 16: Today, we have an unusual nanny	2.4
3	Chunk 6: a relative can take care of the children. Chunk 18: Let's welcome our nanny ...	4.8
5	Chunk 8: more than fifty per cent of all families pay for child care Chunk 11: Some people hire a sitter to take care of the children. Chunk 12: And some families hire a nanny. Chunk 13: A nanny usually lives with a family	7.1

These low recognition rates mean that the students hardly understood any of such chunks, which seem to comprise either longer chunks or short chunks with one or two new or unfamiliar words. It seems that efficient chunk recognition is closely related to one's amount of listening vocabulary. In the next section, I will use the students' post-dictation questionnaires to find out how these lower recognition rates originated.

6.3.4. The causes of the five lowest chunk recognition cases at basic text level

Lower chunk recognition, according to the students' post-dictation questionnaires, was caused by multiple reasons but, surprisingly, the first three reasons for all 10 chunks of less than 10 per cent recognition rate relate to 'lack of listening vocabulary', 'lack of vocabulary knowledge' and 'lack of pronunciation knowledge', as indicated in Table 6.4 below.

Among the reasons given by the participants, four-fifths of the students (80%) attributed their poor chunk recognition to 'lack of listening vocabulary', just under two-thirds of them (65%) to 'lack of vocabulary knowledge' and nearly half of them to 'lack of pronunciation knowledge'. It seems that the low rate recognition is closely related to access to vocabulary by sound. This shows that the students had very poor understanding of the text as the average recognition rate for the 18 chunks is below 30 per cent, as shown in Table 6.1 above.

Table 6.4 The first three perceived reasons for the five chunks with the lowest rates of recognition among 18 chunks at the basic text level

Rank	Chunk	Valid % of Each Chunk	Lack of Vocabulary Knowledge (%)	Lack of Listening Vocabulary (%)	Lack of Pronunciation Knowledge (%)
1	Chunk 1	2.4	61.9	90.5	47.6
	Chunk 16	2.4	71.4	78.6	57.1
2	Chunk 6	4.8	61.9	73.8	23.8
	Chunk 18	4.8	71.4	90.5	47.6
3	Chunk 8	7.1	69.0	78.6	61.9
	Chunk 11	7.1	71.4	92.9	52.4
	Chunk 12	7.1	64.3	88.1	42.9
	Chunk 13	7.1	61.9	71.4	50.0
4	Chunk 10	11.9	76.2	71.4	54.8
5	Chunk 9	19.0	52.4	64.3	42.9
Average %	10 chunks	7.4	66.18	80.01	48.1

The findings above helped me realize the extent of the students' poor chunk recognition in the basic text dictation. My teaching and research experience in this area suggests that this phenomenon might have been caused by either some unfamiliar or new words existing in the chunks that causes low level of recognition or the chunk being too long to remember. Secondly, low recognition levels may have resulted from their poor knowledge of vocabulary, especially listening vocabulary, which has been negatively impacted by the participants' inadequate phonological knowledge of features of connected speech such features as linking,

assimilation, weak forms and reduction, especially the features of connected speech, as can be corroborated in their recognition of inflected forms. This will be further investigated later in the chapter.

6.3.5 Results of chunk recognition at intermediate text level

Like the basic text above, the intermediate text is also made up of 18 chunks, with each chunk followed by a post-dictation questionnaire exploring the reasons for poor chunk recognition. Table 6.5 summarises the recognition of all the chunks, and the three most common reasons for their recognition failure.

Table 6.5 Summary of reasons of chunk problems at intermediate text level

Intermediate text level	
18 chunks & their Reasons	Average valid %
18 Chunks	10.2
Lack of vocabulary knowledge	36.6
Lack of listening vocabulary	72.0
Lack of pronunciation	52.0

As Table 6.5 indicates, the average recognition rate is only a bit over 10 per cent for the 18 chunks. Three main reasons have contributed to this level of poor recognition. The most common one is ‘lack of listening vocabulary’ identified by almost three-quarters of the students (72%), followed by ‘lack of phonological knowledge’ by more than half of the students and ‘lack of vocabulary knowledge’ reported by more than one-third of them (35%).

The findings about the chunk recognition rates and their causes are based on the students' own perceptions, as presented in their post-dictation questionnaires. To compensate for any possible bias caused by the participants' perceptions, I encoded their actual performance in each chunk, as indicated in Table 6.6, which shows the five chunks with the highest recognition rates from the 18 chunks. The chunks with the highest recognition rate are Chunks 1 and 5, achieved by more than half of the participants, followed by Chunk 2 recognized by more than one-third and Chunks 10 and 12 by less than one-tenth.

Table 6.6 The five highest rates of chunk recognition at intermediate text level

Rank	Chunks	%
1	Chunk 1: Most people don't like insects very much.	60.0
2	Chunk 5: Believe it or not,	52.4
3	Chunk 2: But actually, some insects are very useful to people.	35.7
4	Chunk 10: so they make the injury very clean	9.5
5	Chunk 12: fireflies are also useful.	7.1

In contrast, Table 6.7 shows the seven chunks with the lowest recognition rates from the 18 chunks at intermediate text level. It can be seen that the recognition rates of all seven chunks fall below three per cent. Chunks 13, 16 and 18, with a zero recognition rate, were not recognized by any participants as they included some unfamiliar words in sound or some completely new words. Only one of the 42 participants could recognize chunks 3, 7, 9, and 14. As discussed before, new words or unfamiliar words

by sound may have contributed to these low recognition rates. In the following section, specific reasons for the low chunk recognition will be given on the basis of the students' perceptions recorded in their post-dictation questionnaires.

Table 6.7 the five lowest rates of chunk recognition at intermediate text level

Rank	Chunks	%
1	Chunk 13: Fireflies have a special chemical inside them Chunk 16: and used for medical tests. Chunk 18: also use this chemical in their experiments.	0
4	Chunk 3: Today, insects are being used in many surprising ways. Chunk 7: Doctors are using maggots Chunk 9: The doctors have found that maggots eat only the dead skin, Chunky 14: that makes their bodies shine like fire at night.	2.4

6.3.6 The causes of the five lowest rates of chunk recognition at intermediate text level

This section discusses the participants' perceived reasons for the lowest rates of chunk recognition mentioned above, as presented in Table 6.8. This table shows that over three-quarters of the participants (77%) attributed poor chunk recognition to 'lack of listening vocabulary', followed by 'lack of pronunciation knowledge' identified by more than half of them, with 'lack of vocabulary knowledge' being ranked as the third reason and perceived by more than one-third of them.

Interestingly, the findings in relation to all the chunks here seem to suggest that the first three listening barriers with which most of the students agreed

are: ‘lack of listening vocabulary’, ‘lack of pronunciation knowledge’, and ‘lack of vocabulary’. In other words, they need to prioritize the development of their bottom-up skills, which will be further discussed in Chapter 7.

Table 6.8 the students’ perceived reasons for low rates of chunk recognition

Rank	Chunks	Valid % of Each Chunk	Lack of Vocabulary Knowledge %	Average %	Lack of Listening Vocabulary %	Average %	Lack of Pronunciation Knowledge %	Average %
1	Chunk 13	0	33.3	42.8	71.4	75.4	52.4	53.2
	Chunk 16	0	47.6		71.4		47.6	
	Chunk 18	0	47.6		83.3		59.5	
2	Chunk 3	2.4	40.5	36.9	81	78.0	73.8	58.9
	Chunk 7	2.4	42.9		78.6		52.4	
	Chunk 9	2.4	31		83.3		52.4	
	Chunk 14	2.4	33.3		69		57.1	
3	Chunk 4	4.8	35.7	38.4	83.3	75.8	50	56.0
	Chunk 6	4.8	50		83.3		59.5	
	Chunk 8	4.8	38.1		73.8		54.8	
	Chunk 11	4.8	33.3		64.3		52.4	
	Chunk 15	4.8	26.2		73.8		54.8	
	Chunk 17	4.8	47.6		76.2		64.3	
4	Chunk 12	7.1	31	31	73.8	73.8	54.8	54.8
5	Chunk 10	9.5	38.1	38.1	85.7	85.7	45.2	45.2
Average %	14 chunks			36.9		76.9		53.0

6.3.7 Summary of the recognition of 36 chunks at two text levels

The results of chunk recognition at the basic and intermediate text levels are presented in Table 6.9, which shows the average rates of chunk recognition in the basic and the intermediate texts and the average rate for all 36 chunks in these two texts. It also shows the average percentages of the reasons for chunk recognition failure in both basic and intermediate texts respectively, and the average percentage of the reasons for 36-chunk recognition failure in these two dictation texts.

Table 6.9 Summary of chunk recognition and their reasons at basic and intermediate text levels

	Basic Text	intermediate Text	Average recognition of basic +intermediate texts
Chunks & their reasons	Average valid %	Average valid %	Average valid % of 36 chunks
18 Chunks	27.0	10.2	18.6
Lack of vocabulary knowledge	52.4	36.6	44.5
Lack of listening vocabulary	63.0	72.0	67.5
Lack of pronunciation knowledge	41.3	52.0	46.7

As displayed in Table 6.9, the average percentage of chunk recognition for the basic text is less than one third, which is higher than the average percentage of the intermediate text at only one tenth. The average recognition of the 36 chunks reached less than one-fifth. The rate of chunk recognition for these two proficiency texts was too low for the participants to make sense of the main ideas in the chunks. The next section will

examine the reasons for the low chunk recognition rates presented in Table 6.9.

6.3.8 The reasons for low chunk recognition rates

The findings of the post-dictation questionnaires which identified reasons for poor recognition of these 36 chunks highlighted three main reasons (see Table 6.9 above): ‘lack of listening vocabulary’ mentioned by above two-thirds of the participants, ‘lack of pronunciation knowledge’ reported by nearly half of the participants and ‘lack of vocabulary knowledge’ mentioned by nearly half (45%). It seems that all the reasons are closely related to bottom-up skills, which might support the hypothesis that it is the bottom-up skills that prevented participants from reaching a full understanding of connected speech. This supports the notion that only when students have developed enough bottom-up skills, especially the ability to recognize frequently spoken English words, can they use top-down strategies effectively such as predicting, guessing or inferring in their LC. More details of this aspect are presented in the discussion section. This understanding will shed light on how the teaching and learning of listening strategies can be further reformed, as will be discussed in Chapter 8.

6.4 The importance of the recognition of singletons and inflected forms for LC at basic text level within K1

The section above discussed recognition of chunks, or groups of words as a unit, and it was concerned to find out whether the listener was able to have a command of the meaning of a cluster of words. However, an examination of chunk recognition alone cannot show exactly if the listener has acquired full

understanding of the words within a chunk or a sentence. Hence, I intended to discover the extent of listeners' recognition of singletons as well as the inflected forms of singletons. To this aim, I collected samples from both the Basic and the Intermediate texts, as I did in the previous section on chunk recognition. In this research process, I will make use of The British National Corpus (BNC) and Bauer and Nation's list of affixes (Milton, 2009) to investigate the recognition of singletons and inflected forms in both texts.

As part of the examination of inflected forms, I will situate the study of vocabulary within the framework of the BNC. The words in both the basic and the intermediate texts are distributed across different frequency bands. In order to see how well the learners at intermediate level would do in their dictation tests, I limit my study to the K1 (1000 frequent words band) area. As for the exploration of inflected forms, I focus on the second level of the affixes, based on Bauer and Nation's five levels (Milton, 2009). The findings from this analysis will be discussed in the remainder of this section.

As for the diagnostic approach to decoding the dictation results in this chapter as well as in Chapter 7, I gained some inspiration from Field's (2008) research on the analysis of LPs at word level, with approximately six problems scattered across the whole SWR process, as mentioned in Chapter 2. In this chapter, I will follow Field's suggestions and locate where and how students' word recognition breaks down in their dictations.

I will focus particularly on the following aspects of words and links in the process of SWR: word difficulty level, the likely mismatch between a spoken word and its written form, the likely confusion of one word with another of similar pronunciation, the likely difficulty in identifying a word in connected speech, and the likely recognition of a spoken form without access to its meaning or misunderstanding its meaning. The above guiding points will enable the study of SWR to be more concentrated on participants' listening problems.

6.4.1 General vocabulary situation at basic text level in the BNC

As mentioned above, chunk recognition is mainly concerned with whether listeners are able to detect the general meaning of a chunk. This, however, may not accurately reflect their performance in singletons or inflected forms as the successful recognition of a chunk, although closely related to the recognition of all the words in it, does not mean the listener has understood all of the words.

With this in mind, I planned to investigate how well the listeners did in the recognition of singletons and inflected forms from the perspective of the BNC with a focus on the K1 area. My research purpose in this section is elucidated through a general survey of the vocabulary in the basic text in terms of the BNC followed by a discussion on the recognition of singletons

and inflected forms.

In order to clarify the specific situations of singleton and inflected form recognition in the basic text in terms of the K1 frequency band, I will give a general introduction to the allocation of words across all the bands. This is summarized in Table 6.10 below.

Table 6.10 Lexicon summary at the basic text level in BNC

Frequency level		Families	Tokens	Coverage (tokens)%	Repeated words	Singletons
K1 Words		48	113	90.4	72	41
K1 Words	Function words	X	53	47.0	39	14
	Content words	X	60	53.0	33	27
K2 Words		4	6	4.8	1	3
K3 Words		0	0	0.0	0	0
K4 Words		1	4	3.2	1	0
Off-List		X	2	1.6	0	2
Total		53	125	100	74	46

Table 6.10 presents a skeleton of the lexicon at basic text level, including frequency levels of the BNC such as K1 (0-1000 word frequency); K2 (1001 - 2000 word frequency); K3 (2001 - 3000 word frequency); K4 (3001-4000 word frequency) and off lists of BNC word frequency.

There are 125 tokens or words at basic text level, of which the vast majority are in the K1 frequency band (113 words), 4.8% of them belong to the K2

frequency band (6 words), 3.2% are K4 frequency words (4 words) and 1.6% is in the off-list (2 words). From another perspective, of all 41 singletons in K1, 14 words are function words, and 27 words are content words.

There exists some controversy whether ‘around’ and ‘inside’ should be function or content words. Nation (2001, p 430) takes them as function words, but the website Classic VP English v. 3 in Tom Cobb's Compleat Lexical Tutor puts these two words in the realm of content words. Following Nation (2001), I treat them as function words as they are prepositions, although they can function as adverbs as well but not in this text.

This research was focused on the recognition of singletons in K1. There are only three singletons in K2 and two singletons are on the off list (see Table 6.12, Table 6.13 & Table 6.14). Of the 113 words in K1, 72 are repeated words, and 41 are singletons. If the repeated words had been included in this research, the results would have been complex: I would have to take into account the different contexts of the repeated words. For example, the word ‘families’ appears three times in the text, but the recognition rate is different from time to time, as can be seen from Table 6.11 below. It would be difficult to identify the exact reasons for the recognition of ‘families.’

Table 6.11 The recognition rates of repeated word ‘families’ in the basic text

Target words ‘families’	Mean	Std. Deviation
① families	.634	.767
② families	.098	.735
③ families	.238	.958

On the other hand, a comparative study of singleton recognition in terms of content words and function words is also one of my perspectives in order to see whether there are any differences in SWR between function and content words, and what implications are contained in these differences. The general situation with regard to the content and function words in the basic text is shown in Table 6.12 below, while Table 6.14 is a summary of the singletons of function words and content words in K2 and those off list in this text.

Table 6.12 Function & content word singletons in K1 in the basic text

Function Words (14)			Content Words (27)					
an	Have	thei r	Afternoo n	family’ s	Let	Pay	Tell	Work
about	is	the y	All	Fifty	live s	Perce nt	United	Youn g
But	Our	us	Centre	Good	mor e	Show	Unusu al	
can	someon e	we	Every	Home	Mos t	Sitter	Use	
for	Than		Family	Job	nee d	Takes	Usuall y	

6.4.2 Singleton recognition in terms of function and content words at basic text level in K1

This section discusses how well the listeners did in singleton recognition in terms of function and content words at basic text level; it also demonstrates the pronunciation changes individual singletons might have had in connected speech, as well as the possible causes of the changes. The details are listed in the following tables, in which the sequence of singletons is arranged in an ascending order from the lowest mean score of recognition to the highest. Table 6.13 is focused on the singletons in the K1 frequency band and will be fully analysed below, while Table 6.14 on the other bands of singletons will not be discussed in depth, as it is not sufficiently representative of the majority of singletons.

Table 6.13 Results of singleton recognition in terms of function and content at the basic text in K1

	K1 function singleton	Mean scores	Std. Devia tion		K1 content singleton	Mean scores	Std. Deviation
1	Our	.17	.38		Sitter	.19	.40
2	us	.43	.50		All	.31	.47
3	an	.50	.51		Lives	.40	.50
4	for	.52	.51		Pay	.45	.50
5	can	.57	.50		Unusual	.48	.51
6	they	.81	.40		Use	.48	.51
7	about	.86	.35		Centre	.52	.51
8	Their	.88	.33		Fifty	.55	.50
9	is	.90	.30		United	.57	.50

10	Than	.90	.30		Need	.60	.50
11	Someone	.93	.26		Show	.67	.48
12	Have	.98	.15		Tell	.67	.48
13	But	1.00	.000		Percent	.69	.47
14	We	1.00	0.00		Let	.71	.46
15					Every	.74	.45
16					family's	.74	.45
17					Usually	.88	.33
18					Family	.93	.26
19					Job	.93	.26
20					Home	.93	.26
21					Takes	.93	.26
22					Work	.93	.27
23					More	.95	.22
24					Young	.95	.27
25					Good	1.00	0.00
26					Afternoon	1.00	.00
27					Most	1.00	.00
	Average mean	.75	.32			.71	.38
Average mean score of 41-singletons recognition		.73					

Table 6.14 Function & Content Singletons in K2 & off list from Basic Text level

	K2 (n=3)	Off list (n=2)
Function words (0)	0	0
Content words (5)	Relative, states & topic	Julie, Jones

Table 6.13 presents the mean and standard deviation for 41-singleton recognition in K1 at basic text level; it indicates that the average mean score of 41-singleton recognition, including function and content singletons, is almost three-quarters (73%).

As shown in this table, more than two-thirds of the function singletons and content singletons were recognised by the participants, though the recognition rate of function words was a little higher than that of content words. An analysis of the data above will help understand what contributed to the difficulties in word recognition and why this was so. In terms of singleton recognition, as discussed above, we will find that the main reason for the participants' difficulty in recognition was the lack of an ability to adapt to the pronunciation changes in connected speech due to the various elements involved, as discussed in Chapter 2.

When it comes to the recognition of function singletons, the lowest recognition mean score of 14 function words lies with the word 'our' with 0.17, while the highest lies with words such as 'but' and 'we' with a 1.00

mean score. That implies that all of the participants got them right as these two words were very common and familiar to them. The word 'our' received the lowest recognition level, which might have been related to the linking problem of consonant +diphthong. The pronunciation of 'our' changed in connected speech. Also, there were two unfamiliar words 'welcome' and 'nanny' before and after 'our', and this might have discouraged the students from listening to this detail, as the situation might have given an even weaker pronunciation form to 'our'. Besides, there were some frequent words such as 'can', 'for', 'an' and 'us' with under .60 mean scores. These four function words were all pronounced in their weak forms as they were located in the middle of chunks.

By contrast, the function words with higher scores are frequent words like 'is', 'than', 'someone', and 'have', with mean scores all above .90, which suggests that most of the students have achieved the correct recognition, and words like 'but' and 'we' with a score of 1.00, which indicates that all the students wrote them correctly. The last two words with a mean score of 1.00 were the easiest to identify; as they were located at the beginning of a chunk and also at the beginning of a sentence in this text, they did not experience much change in pronunciation when in connected speech as some other words might have done.

As for the content singleton words, of the 27 content words, the one with the lowest recognition rate was 'sitter' with a mean score 0.19. This might have

been a new or unfamiliar word by sound for the participants although it was in the category of K1. This word conveys a rather new meaning, as *sitter*, being a cultural phenomenon, is relatively unfamiliar to Chinese students. This seems to say that words of different frequencies can have different criteria for English learners of cultural backgrounds other than English. One word belonging to K1 according to British standards could be in another band for English learners in China. Moreover, there were also seven content words with less than .60 mean scores: ‘united’, ‘fifty’, ‘centre’, ‘use’, ‘pay’, ‘lives’, and ‘all’, which, except for the word ‘centre’, were all in the middle of sentences or chunks. This contributed to the formulation of the weak forms in pronunciation and various changes in connected speech.

By contrast, there were seven content words: ‘family’, ‘job’, ‘home’, ‘takes’, ‘work’, ‘more’ and ‘young’, whose mean scores of recognition were above .90. All these words were frequent words and very familiar to the students as they had learned them from the very beginning stage at primary school. As a result, the students were familiar with both their pronunciations and written forms. The words with the highest recognition rate were ‘good’, ‘afternoon’ and ‘most’ with a mean score of 1.00. That means that all of the participants recognised them correctly, as in the case of function word recognition mentioned above. These three words were located at the beginning of a sentence or a chunk, which means that they did not assume weak forms. This reduced the participants’ difficulties in perceiving them in connected speech.

6.4.3 Summary of singleton recognition in terms of function and content words in K1 at basic text level

The discussion above suggests that there are various causes contributing to difficulties in singleton recognition. Firstly, concerning the recognition comparison between function word singletons and content word singletons, some interesting findings are exhibited in Table 6.15.

Table 6.15 Comparison of the recognition mean scores between function singletons and content singletons in K1 at basic text level

Participants N (42)	K1 function singletons (n=14)	K1 content singletons (n=27)
Average mean score	0.75	0.71
Average Std. deviation	0.32	0.38

Table 6.15 shows that participants recognised the function singletons slightly better than content words. There might be several reasons for this. One is that the participants were more familiar with the function words than content words in this text, although all of them were in the 1000 frequency level. Those function words were very basic words that participants must have known since they started to learn English. They could recognise the function words more easily than the content words. Another reason might be that the function words were shorter than the content words (Please see Table 6.11 for details). In sum, function words would be easier to recognize than content words, based on the rules of short-term memory.

6.4.4 The importance of inflected form recognition within singletons for LC at basic text level

The above discussion focused on general singleton recognition. The recognition of inflected forms is both similar and different, as it involves identifying the ending changes attached to the basic forms of words. Inflected forms recognition will test listeners' ability to identify ending phonemes, which are usually very weak, and also their ability to use grammar knowledge intuitively and logically. In the analysis of inflected form recognition I will, as mentioned above, follow Bauer and Nation's list of affixes (Milton, 2009). However, this research focus is on Level 2 of affixes (see Table 6.16), that is, inflected forms or inflexions such as plural, 3rd person singular present tense, past tense and -ing, as shown in detail in Table 6.16 below.

Table 6.16 Summary of Bauer and Nation's list of affixes

Level	Affix
1	n/a different form is a different word
2	Regularly inflections: plural, 3 rd person singular present tense, past tense, past participle, -ing, comparative, superlative, possessive
3	-able, -er, -ish, -less, -ly, -ness, -th, -y, non, un- (all with restricted uses)
4	-al, -ation, -ess, -ful, -ism, -ist, ity, ize, -ment, -ous, in- (all with restricted uses)
5	-age, -al, -ally, -an, -ance, -ant, -ary, -atory, -dom, -eer, -en, -ence, -ent, -ery, -ese, eque, -ette, -hood, -I, -ian, -ite, -let, -ling, -ly, -most, -ory, -anti-, ante-, arch-, bi-, circum-, counter-, en-, ex-, fore-, hyper-, inter-, mid-, mis-, ne-, post-, pro-, semi-, sub-, un-
6	-able, -ee, -ic, -ify, -ion, -ist, -ition, -ive, -th, -y, pre-, re-
7	Classical roots and affixes

Source (Milton 200, p 104)

In light of the principles above, I then charted the students' recognition of inflected forms in the basic text within K1 frequency level, as shown in Table 6.17.

Table 6.17 Comparing & contrasting recognition between basic forms and their inflections in the basic text

Basic form + inflection & Basic form	Basic Text (Participant N=42)	
	Right Count	Valid Percent
1. takes	36	86.7
Take	5	12.9
2. family's	31	73.8
Family	10	23.8
3. States	26	61.9
State	14	33.3
4. United	24	57.1
Unite	17	40.5
5. lives	17	40.5
Live	15	35.7

The above table counts up the recognition of basic forms + inflections and basic forms in the basic text. In fact, basic forms + inflections were the targeted or desired words in the dictation text. That is to say, if participants understood them correct, then they could recognise the inflections. In this text, there were four singleton words with –s endings and only one singleton word with an –ed ending.

A comparison of the above results shows that the majority of the participants (87%) recognised 'takes' followed by 'family's', recognized by

almost three-quarters of them (74%) and ‘lives’ with the lowest score of less than a half of them. As for the –ed ending, more than half of the participants got it correct. This analysis seems to suggest that the participants had difficulty in perceiving the correct forms of inflected words, as none of the inflected forms received full recognition from the listeners. However, the valid percentages of the basic forms of all the inflected forms prove that the participants would have achieved very high rates of word recognition in all the inflected forms if we had counted in the successful recognition of the basic forms. This implies that the major difficulty of the participants in recognizing inflected forms lies in their lack of ability to discern their ending phonemes. Hence, identifying inflected forms is a more complicated process than recognizing singletons without inflections. This seems to suggest that CUS will need to raise their awareness of inflected forms not only as a grammatical phenomenon but also as a listening issue in the teaching and learning of SWR, and they will need to receive intensive training in the recognition of inflected forms in order to enhance their SWR.

6.5 The importance of the recognition of singletons and inflected forms for LC at intermediate text level within K1

Section 6.3 above discussed singleton recognition as well as the recognition of inflected forms among the singletons in the basic text. This section will discuss the recognition of singletons and the inflected forms in the intermediate text by following the general guidelines in the above section about the basic text. In other words, I will mainly concentrate on the K1 in

the BNC, in an attempt to expose the similarities and differences between the two texts in various aspects of word recognition.

6.5.1 General vocabulary situation at intermediate text level in the BNC

There are 128 tokens or words in the intermediate text, more than four-fifths of which fall into the K1 frequency band (103 words) and one tenth belong to the K2 frequency band (13 words). The rest of the words are scattered over the other bands.

My first research focus is on the study of the singletons of K1. Secondly, discussion from the perspective of the distinction between function and content words remains one of my concerns. As in the case of the basic text, I will not include repeated words in the table, as their recognition rates can change with their locations in the text, as can be seen in Table 6.18 with the word ‘insects’ as an example. Accordingly, there are 46 singletons in K1, of which 20 words are function words and 26 words are content words.

Table 6.18 General vocabulary situation of intermediate dictation text in BNC

Frequency level		Families	Tokens	Coverage (tokens)%	Repeated words	Singletons
K1 Words		55	103	80.5	57	46
K1 Words	Function words	X	55	53.4	35	20
	Content words	X	48	46.6	22	26
K2 Words		8	13	10.2	4	4
K3 Words		1	1	0.8	0	1

K4 Words	0	0	0.0	0	0
K5 Words	1	4	3.1	0	1
K6 Words	1	1	0.8	0	1
K7 Words	1	3	2.3	1	0
K12 Words	1	3	2.3	1	0
Off-List	0	0	0.0	0	0
Total	68	128	100	63	53

Table 6.19 The recognition rates of repeated word ‘insects’ at intermediate text level

Target words ‘insects’	Mean	Std. Deviation
1 insects	.098	.736
2 insects	.317	.521
3 insects	.146	.654
4 insects	.220	.571

Table 6.20 Function & content singletons in K1 of the intermediate text

Function Words (20)			Content Words (26)		
1	An	Many	actually	Hospitals	Special
2	*around	Much	believe	make	Surprising
3	At	Who	bodies	Makes	Tests
4	Be	Of	Body	Most	Today
5	Being	Or	Clean	Night	Use
6	But	So	engineering	Now	Using
7	Can	Some	example	Only	Ways
8	From	Them	Fire	Science	World
9	*inside	They	Found	Scientists	
10	It	This			

6.5.2 Singleton recognition at intermediate text level in K1

Similar to the study of singleton recognition in the basic text, this section attempts to display how the singleton recognition in the intermediate text was going, with the focus on the singleton words in K1, and to discover the general features of the singleton words including some comparison between function and content words. The details of the singleton recognition in this text in K1 are offered in Table 6.21 below, while the recognition of the singletons in other bands of the BNC is listed in Table 6.22, but will not be discussed in detail.

Table 6.21 Results of singletons recognition at intermediate text in K1

	K1 function singletons	Mean scores	Std. Deviation	K1 content singletons	Mean scores	Std. Deviation
1	An	.00	.00	Bodies	.02	.15
2	Around	.05	.22	Makes	.07	.26
3	From	.07	.26	Hospitals	.10	.30
4	Them	.10	.30	Tests	.17	.38
5	Of	.14	.35	Fire	.24	.43
6	Inside	.17	.38	Only	.24	.43
7	This	.40	.50	Body	.29	.46
8	Being	.43	.50	Engineering	.29	.46
9	Who	.43	.50	Surprising	.38	.49
10	At	.45	.50	Ways	.40	.50
11	It	.50	.51	Clean	.45	.50
12	Many	.60	.50	make	.45	.50
13	They	.71	.46	Night	.50	.51

14	Or	.74	.45	Believe	.52	.51
15	Be	.81	.40	Scientists	.55	.50
16	Can	.83	.38	Special	.55	.50
17	So	.93	.26	World	.61	.49
18	Much	.98	.15	Actually	.62	.49
19	Some	.98	.15	Use	.62	.49
20	But	1.00	.00	Science	.64	.49
21				Using	.71	.46
22				Now	.74	.45
23				Found	.83	.38
24				Example	.98	.15
25				Most	1.00	.00
26				Today	1.00	.00
Average scores		.52	.34		.50	.40
Average mean score of 46 singletons recognition		.51				

Table 6.21 above describes the mean and standard deviation for 46-singleton recognition in K1 at intermediate text level. The average mean score of 46-singleton recognition including function and content singletons is .51. That is to say, the participants recognised half of the singletons in K1. It seems that the recognition rates of the singletons are closely related to their location in chunks or sentences; usually, a singleton word is easier to identify if in a prominent position in a sentence, like the beginning of chunk or the first part of a sentence. Also, the recognition of a targeted singleton

can be affected if situated in a chunk with unfamiliar words. The participants had greater difficulties in gaining a proper understanding of the whole passage than they did at basic text level, in which they achieved .73 as the mean score. Interestingly, similar to the case of function word recognition versus content word recognition at basic text level, as discussed above, the recognition rate of function words (.52) is slightly higher than that of content words (.50) at intermediate level.

Table 6.22 Singletons in K2, K3, K6 & K12 of BNC

K2 words (n=5)	Mean scores	Std. Deviation	K3, K6 & K12	Mean scores	Std. Deviation
Chemicals	.00	.00	Shine (K3)	.24	.44
Experiments	.07	.26	Genetic (K6)	.00	.00
Medical	.35	.48	Firefly (K12)	.07	.42
Regularly	.07	.26			
Removed	.24	.44			
Average scores	.15	.40		.10	.29

Concerning the recognition of function singletons, the lowest recognition mean score among 20 function words was the word ‘an’ with a mean score 0.00. This implies that nobody could recognise the indefinite article ‘an’. The words like ‘it’, ‘at’, ‘who’ and ‘being’, ‘this’, ‘of’, ‘them’, ‘from’, and ‘around’ had recognition rates below .60. On the other hand, the one with the highest recognition rate was ‘but’ with a 1.00 mean score, which indicates that every participant identified it. Three function words, ‘so’, ‘much’ and ‘some’, had recognition rates of over .90.

The most typical word with a low level of recognition was ‘an’ with 0 recognition rate, being in a rather weak pronunciation form, as it appeared in ‘around an injury’. In this case, ‘an’ was in the middle of a chunk consisting of two strong pronunciation forms. An added difficulty was the feature of connected speech we call ‘linking’. In this chunk, there were two instances of linking, with one being ‘aroundan’, and the other ‘an injury’. Results show that the students had very limited knowledge of the features of connected speech, which hindered their understanding of this chunk.

As for the most typical example with a high recognition rate, ‘but’ with a 1.00 mean score was located at the very beginning of a sentence, thus retaining its full pronunciation form. Also it was very familiar to the students as well as short and easy to remember. All the other function singletons experienced variations in pronunciation to some degree.

Similar to function word recognition, of the content singleton words in K1, the one with the lowest recognition rate is ‘bodies’ with 0.02 mean score in the chunk ‘that makes their bodies shine like fire at night’. This word appeared in the middle of a long sentence, which means it was placed in a minor pronunciation position; as a result, its pronunciation was shorter than that when being read individually. Another reason for its low recognition level is that there are no such features in Chinese with –s ending words, so students had no awareness of –s ending words when listening to connected

speech, as discussed in the previous chapter. Based on my teaching experience and observation, students often omit the pronunciation of –s endings, which seems to have been affected by their mother tongue.

There were 15 words recognised by the participants with the rates of below .60 per cent, such as ‘makes’, ‘hospitals’, ‘tests’, ‘fire’, ‘only’, ‘body’, ‘engineering’, and ‘surprising’. On the other hand, the words with the highest recognition rate out of 26 content words were ‘most’ and ‘today’ with a mean score of 1.00, which were located at the very beginning of a sentence. This helped retain their full pronunciation. The word ‘example’ was recognised with a rate of 90 per cent, as it was almost at the beginning of a sentence and in the stronger position of the chunk ‘for example’. This made it easier to perceive. In addition, the above three words were very frequent words with which students are familiar by both sight and sound.

Unlike the basic text, the intermediate one has more singletons from other frequency levels. As shown in Table 6.22, all the words from frequencies other than K1 had rather low recognition rates. This seems to imply that less frequent words, new words or unfamiliar words by sound were naturally more difficult to identify. What is more, the existence of unfamiliar words in a chunk could have made it equally or more difficult to identify other easier words. Words like ‘makes’ (0.07), ‘bodies’ (0.02) ‘shine’ (0.24) are cases in point. As presented, ‘bodies’ with a recognition rate of 0.02 and ‘makes’ with 0.07, which were words from K1, appeared in the chunk ‘that

makes their bodies shine like fire at night’. As I mentioned earlier, Chinese students are not quite aware of word ending –s as such a feature does not exist in their native language. When they read those words with s-endings, the pronunciation of ‘s’ is often silent. Therefore, ‘makes’ and ‘bodies’ were regarded by the students as unfamiliar words. They were present in the same chunk at the same time, which created more difficulties in recognizing that chunk as they had an even lower recognition rate than ‘shine’ (.24). In connected speech, the participants may have been distracted from easier words while concentrating on difficult ones.

6.5.3 The results of the inflected form recognition within K1 frequency level in the intermediate text

This section examines the recognition of the inflected forms such as –ing and –s endings within the singletons of K1 in the intermediate text, as a further description of singleton perception, as listed in Table 6.23 below.

Table 6.23 illustrates the recognition of basic form + inflections and basic forms in intermediate text. It presents four singleton words with –ing endings and six singleton words with –s endings. Furthermore, it indicates that the participants could recognise –ing endings (49%) more proficiently than –s endings (22%).

Table 6.23 Comparing & contrasting recognition between basic forms and their inflections at intermediate text level

Basic form + inflection & basic form	Intermediate text (N=42)		
(Participant N=42)	Right Count	Valid Per cent	Average percentage of right forms
1. being	24	57.1	48.6
Be	1	2.4	
2. surprising	16	37.2	
Surprise	7	16.7	
3. using	30	71.4	
Use	5	12.2	
4. engineering	12	28.6	
Engineer	1	2.4	
Ing	0	0	
5. ways	17	40.5	21.6
Way	11	26.2	
S	0	0	
6. hospitals	4	9.5	
Hospital	34	81.0	
7. makes	3	7.1	
Make	23	54.8	
8. bodies	1	2.4	
Body	23	54.8	
9. tests	7	16.7	
Test	14	33.3	
10. scientists	23	53.5	
Scientist	8	19.5	

As for the -ing endings, the words with only two syllables 'being' and

'using' had better recognition rates than the other words with -ing endings. In between, the word 'using' reached the highest percentage of more than two third, which suggests that 30 participants got it correct. It seems that the participants were more familiar with 'using' than 'being'. Therefore, 'being' is an unfamiliar word for the students, which creates some difficulties for them to understand it well.

The most difficult to recognize is the three-syllable word 'surprising' as only one-third of the participants could recognise it. While the four syllables 'engineering' got the lowest recognition rate as only 12 participants were able to identify it. This might have been related to the number of syllables, as the words with fewer syllables were easier to recognise than those with more syllables.

Concerning -s ending recognition, we can easily notice that the participants encountered big barriers as only under one-third of them succeeded in recognizing it. The word with the lowest recognition percentage was 'bodies', as only one person could identify it, followed by the words 'makes' and 'hospitals', the recognition rates of which were below 10 per cent. The highest recognition rate was for the word 'scientists' as half of the participants could recognise it. It might have been connected with the degree of familiarity the participants had with these words. The more familiar the participants were with the target words, the easier it was to recognise them.

Table 6.23 shows that the participants could recognise –ing endings (49%) much better than –s endings (22%) although neither feature of speech exists in the Chinese language. However, if we take into account the right counts of the basic forms of the words with ‘-s’ endings, then the right counts of the words with ‘-s’ endings by including the inflected forms and the basic forms, there will not be much difference from the right counts of the words with ‘-ing’ endings in terms of their successful recognition rates. This seems to suggest that it was easier for the participants to perceive some phonemes with stronger sounds like ‘-ing’ endings than other phonemes with weaker sounds like ‘-s’ endings. This is all the more salient if they are combined into chunks or chunk combinations; in chunks more variations of syllables can occur.

6.6 Recognition of chunks, singletons and inflected forms at both basic and intermediate text levels

As seen above, Chapter 6 has explored the word recognition process in terms of the recognition of chunks, singletons and inflected forms of singletons in two texts at different levels. I attempted to uncover how the listening process progressed by focusing on word recognition as a starting point. In order to achieve this goal, I expanded word recognition to its neighbouring areas: chunk recognition and inflected form recognition. In this way, I wished to see how individual word recognition underwent variations in pronunciation, and how the findings could reform or inform

teaching and learning.

In the rest of this section, I will summarize and discuss my findings in terms of singleton (function and content) recognition, inflected form recognition and chunk recognition, including the words confused in pronunciation discovered in my study

6.6.1 Singleton recognition and its implications

Firstly, regarding singleton recognition, I have differentiated between function and content words. The following table is a data summary of all the function and content words within K1 at basic and intermediate text levels. Altogether, there are 34 K1 function singletons and 43 K1 content words.

Table 6.24 Comparison between recognition mean scores of function and content words in K1 at two text levels

Participants N (42)	K1 function singletons (n=34)	K1 content singletons (n=43)	Average Total singletons
Average mean score	0.64	0.61	0.63
Average Std. Deviation	0.33	0.39	0.36

As reviewed in Chapter 2, there have been discrepant ideas on which are easier to identify, content or function words. Researchers such as Milton (2009) identify function words as the most frequent words, which seems to

imply that function words are easier to identify, while other researchers like Eastman (1993) and Schmitt (2010) argue that function words are more difficult to learn and identify, although acknowledging that function words are more frequently used than content words.

This suggestion does not agree with my findings. The data analysis of the above table reveals that the identification of function words in both texts is slightly better than that of content words at least in Chinese learners at intermediate level. This finding seems to contradict the explanations offered by Schmitt and Eastman. So there should be some other explanation for function word recognition and content word recognition. The differentiation of function and content might not be the most appropriate one to explain recognition difficulties. The following finding provides support for this suggestion. Following the specific methods suggested on the Lextutor website, all the function and content words in this study were entered, and the results demonstrated that all the function words in these two texts are within the first 500 frequency level. From the point of view of familiarity, the participants might be more familiar with the first 500 function words than the second 500 function or content words. By this, I would argue that familiarity with words decided the participants' chances of identifying the singletons. This will be further discussed in Chapter 7.

Secondly, the degree of familiarity with a content or function word undoubtedly decides the probability of success in word recognition, as

revealed by the different recognition rates in the basic and the intermediate texts. Besides, if set around new or difficult words, even an easy singleton can be hard to identify as the new words can shift the listener's attention away from the targeted singleton, or cause phonological variation in the targeted word.

Thirdly, I noticed that the efficient recognition of singletons depends on the pronunciation variations of words when combined with other words or other chunks. Generally, if a singleton is located at the beginning or sometimes even near the end of a sentence or a chunk, it can be easier to identify; however, if located in the middle, it can be more difficult as pronunciation variations may have occurred.

Fourthly, it can be difficult to summarise the recognition tendencies of the singletons effectively. I focused on the singletons by dismissing repeated ones like the word 'families' which appears three times in the basic text; the recognition rate of this word varies according to its different contexts and chunks. However, I am not denying the enlightening aspect of repeated words, as the significance of the context of the targeted word can be corroborated. The investigation of individual word recognition in isolation can be misleading. This may inform of the importance of learning listening and speaking skills in the unit of a chunk or several chunks, rather than in the unit of a word.

In both texts, I explored inflected form recognition, which is actually a part of singleton recognition. An examination of both texts reveals that the right counts of the inflected forms of some words can be much higher if the right counts of their basic forms are included as valid recognition. This seems to suggest that the key to perceiving the correct inflected forms very often lies in one's ability to recognize their inflections, which frequently have variations due to the features of connected speech within their contexts or chunks, as the case of '-s' endings and '-ing' endings in both the basic and the intermediate texts.

6.6.2 Words often confused at two dictation text levels

Chinese learners often confuse some spoken words when they listen to the words in connected speech because they sound or look alike. Although they know the differences between the confused words in their written forms, they tend to make some mistakes when they listen to them and then write them down: for example, 'to', 'too', and 'two', or 'world' and 'word'.

Table 6.25 Words Confused at basic and intermediate text levels

Participant N=42	Basic Text		Participant N=42	Intermediate Text	
	Count	Valid Percent		Count	Valid Percent
1. Julie	1	2.4	1. world	25	58.1
July	11	26.2	Word	9	21.4
2. Jones	2	4.8	2. tests	7	17.1
John	5	11.9	text	9	22.0
3. relative	10	23.8			

*lot of	12	28.6			
4. ①the	23	54.8			
*their	7	16.7			
5.fifty	23	54.8			
*fifteen	10	23.8			
6.(1)hire	38	90.5			
*hair	4	9.5			
7. ②the	18	42.9			
*their	14	33.3			
8. their	37	88.1			
*the	3	7.1			
9. (2)hire	37	88.1			
*hair	5	11.9			
10. sitter	8	19.0			
*sister	12	28.6			
11. ③the	19	45.2			
*their	20	47.6			
12. (3)hire	38	90.5			
*hair	3	7.1			
13. ④the	36	85.7			
*their	4	9.5			
14. an	21	50.0			
*a	18	42.9			

Notes: 1. * refers to the wrong words in the two text levels. 2. The number refers to the occurrence of the word appearing in the texts.

Table 6.25 reveals that the parts of the singletons the most easily confused are the vowel phonemes, although they can sometimes be consonants if located in the middle of singletons. This is understandable as vowels may experience more variations including pronunciation length, intonation and

stress. This phenomenon reflects English learners' 'over-reliance on phonetic cues' (Liu, 2002, p216). In other words, when they are not sure about what they have heard, they would simply make a random guess. However, Liu attributed this practice to the learners' inadequacy in syntactical and lexical knowledge. I would argue that the main reason is that the learners have not developed enough capacity to perceive variations of the phonemes. They need to cultivate their skills in differentiating phonological features in connected speech. This understanding points to the necessity of further training of the learners in their phoneme differentiation and correction, which will be reiterated and further elaborated in the following section.

6.6.3 Chunk recognition and its implication

Chunk recognition is not the same as singleton recognition, as it provides a context for singletons. Successful chunk recognition does not necessarily mean successful singleton recognition, whereas adequate singleton recognition is a necessary condition for successful chunk recognition.

The average chunk recognition for the two texts is a little above 18 per cent, while the average singleton recognition is above 60 per cent. This indicates that there are still many gaps to fill in between individual singletons and their chunks before full chunk recognition is successful. It would be problematic in understanding whole passage. As Bonk (2000) found, if a student transcribe less than 80% of a dictation correctly, then s/h is

impossible to achieve fluent understanding, although correct aural word recognition does not ensure comprehension. The gaps are caused by various factors like new words, sounds changes and grammatical connections. This also implies that Miller (1956)'s notion of chunk, as discussed in Chapter 2, which was intended to promote one's short-term memory, could be difficult for L2 learners to use, as they would need to enhance their SWR fully before chunking can be used to process input messages more efficiently.

As for the reasons for the difficulties, three major ones are revealed in the students' questionnaire survey: lack of listening vocabulary, lack of phonological knowledge and lack of vocabulary. These three reasons are in agreement with these findings in singleton recognition and inflected form recognition.

6.7 Summary

The exploration of linguistic properties of dictation texts, chunk recognition, singleton recognition and inflected form recognition in this chapter made me reflect on what measures to take to keep students with word recognition.

Findings suggest that the biggest LP for CUS at intermediate level is a lack of phonological knowledge, especially the features of connected speech, and a lack of listening vocabulary. Pemberton's (2002) findings confirm that Chinese learners have difficulty in recognising very frequent English words in connected speech. His results point to the importance of a skill that is crucial for any L2 learners: the ability to recognise words (and especially

frequent words) in continuous speech.

My starting concern, therefore, for the coming intervention is listening vocabulary and phonological knowledge, for these aspects promise to be improved if an appropriate teaching focus is to be taken. Thus, my teaching would focus on the features of connected speech such as word stress, strong and weak forms of words, elision, assimilation, and transition, and frequent SWR. In Chapter 7, I will explore how far my teaching would help improve learners' phonological knowledge, enlarge their listening vocabulary, and enhance their LC.

CHAPTER 7 REPORTS ON TWO-STAGE TESTS AND REFLECTIONS ON LISTENING PROBLEMS FROM BOTH PARTICIPANTS AND A RESEARCHER

7.1 Introduction

In chapters 5 and 6, the participants' main listening difficulties were identified from the results of a questionnaire survey, students' self-reflections at the very beginning and the end of the semester, and two dictation tests on English spoken word recognition (SWR) at basic and intermediate levels. Results indicated that the most significant listening problems (LPs) participants encountered were: (1) inadequate listening vocabulary, (2) inadequate vocabulary, and (3) inadequate phonological knowledge. Further findings of SWR in the two dictation texts suggested that students' LPs are closely related to the features of connected speech (CS). In other words, participating students had no adequate awareness or phonological knowledge of the features of CS such as word stress, sentence stress, strong and weak forms of words, elision, assimilation, and transition (junction).

To improve students' awareness of these features and increase their spoken word recognition in connected speech, I spent 30 minutes in my English class each week instructing them on the features of speech. The purpose of this was to determine whether further exploration of the features with the students would promote SWR in CS.

In this chapter, the reflection on listening difficulties and the causes of these difficulties will be presented from participants and me, their English teacher as well as a researcher. A detailed discussion will be elaborated upon the underlying reasons for the LPs remaining unresolved at the end of the semester. My reflection as a researcher on the process of validating qualitative data will also be presented through the procedures for translation, transcription, coding and selecting of participants' self-reflection.

7.2 Participants' reflection after the semester's work

7.2.1 Participants' reflection on listening problems at the end of semester

Although participants had made progress in some aspects of CS, they still had some difficulties in reaching a fluent understanding of CS. In order to reveal what difficulties remained with the participants after one semester learning, I coded and categorized the findings of the students' self-reflection on listening problems into 10 listening problems. Table 7.1 presents the summary of these problems.

As shown below, ten LPs were identified through students' self-reflection reports. For more details, please refer to Appendix O & P. The average percentage of listening difficulty is 30 per cent, which is 9.4 per cent lower than that of listening difficulty identified at the beginning of semester. The ten LPs range from 'lack of listening vocabulary', a belief on the top of the

list of the ten problems and held by more than two-thirds of the participants, to ‘language anxiety’, an opinion given by only three participants reporting on the psychological pressure when taking dictation. Overall, there are five major LPs that one-third of the research participants still identified as listening difficulties after the end of semester. In the remainder of this section, I will elaborate on these remaining difficulties.

Table 7.1 Summary of LPs at the end of semester

Problems (N= 41)	Frequency	Per cent %
1. Lack of listening vocabulary	30	73.1
2. Focus on the first part, missing the following part	18	43.9
3. Poor recognition of linking or weak form	16	39.0
4. Inadequate spelling ability	15	36.6
5. Mismatch between the speakers’ and the listeners’ incorrect pronunciation	14	34.2
6. Poor memory or inadequate ability to integrate words into proper and logical message	13	31.7
7. The speaker’s fast speaking speed	6	14.6
8. Lack of grammar knowledge	4	9.8
9. Lack of background knowledge	4	9.8
10. Language anxiety	3	7.3
Average %	30%	

Lack of listening vocabulary

As mentioned above, among the 10 LPs identified, the most common one was ‘lack of listening vocabulary’. This was also a conclusion from the self-reflection reports. The only difference is that the overwhelming majority of participants held this claim at the beginning of the semester, while the percentage was reduced to 70 per cent at the end of semester. From this, we can see that my purposely teaching on the features of connected speech in my class works well as it enlarged the students’ listening vocabulary to

some extent. However, more than half of the participants still considered ‘lack of listening vocabulary’ as one of their LPs. Here are some of the participants’ reports in their reflection, which are kept as they were in their original transcript form, without much editing in diction or grammar. To show emphasis, some of the phrases are in bold type.

Student 17

*When I take a dictation, I often feel confused and nervous in the long sentences of unknown words. I have no idea how to deal with them. Because of long sentences, I have no good short-term memory, and unknown listening vocabulary will add to my listening difficulties. **Some words I know but cannot spell right***

Student 18

*I lack listening vocabulary. Sometimes I am familiar with the word, **but cannot catch its meaning.***

Student 22

*Sometimes I cannot catch enough vocabulary in one sentence, so I have **difficulty in understanding the whole sentence.***

Student 25

*I lack listening vocabulary and often **forget those very familiar words.***

These excerpts from the reports above reveal that the one-semester instruction seems to have instilled some theoretical ideas into the students’

minds. They now have a better awareness of the distinctions between vocabulary by sound and by sight at the end of the semester. They have started to develop a clearer picture about one of their main LPs, that is, lack of listening vocabulary rather than vocabulary by sight.

Focus on the first part, missing the following part

More than two-fifths of the participants still found that they would ‘focus on the first part, missing the following part’ after one semester learning, while around half of them suggested they had this difficulty in the pre self-reflection at the beginning of semester. This means that the participants have made some achievements in this aspect, but my teaching obviously did not have a significant effect on this listening problem. The following are selections from the reflections of the participants.

Student 2

In listening, if I meet some new words or words I cannot spell well, I will concentrate on those words and ignore the following part, and then I cannot have enough time and energy to write those words or sentences I am very familiar with.

Student 4

When I listen to a sentence, I often catch the stressed words but not clear about those unstressed words. Sometimes I cannot recite the sentence I just heard (poor memory). Sometimes I was often entangled with those seemingly familiar but unfamiliar words, which leads me to miss the

***following part.** Most of the time I feel the speakers speak so fast that I cannot respond to them soon.*

Student 5

*My attention **focuses on unfamiliar words and thus I often miss the following part.** I often feel confused when I listen to the long sentences.*

Student 33

*When I meet some unfamiliar words, I always stop to think over its meaning, **and then miss the following part.***

As described above, lack of listening vocabulary often causes participants to use more processing capacity to understand those unfamiliar words by sound, thus missing the following part, which is not uncommon, especially among intermediate level students. In other words, while I am not denying the psychological elements of the individual listeners, the fundamental reason for this listening problem is actually lack of familiarity with the listening vocabulary.

Poor recognition of linking or weak forms

In the recognition of linking or weak forms, nearly 40 per cent of the participants mentioned that they had poor recognition of linking of words and words' weak forms. It shows that students had a better awareness of their LPs compared with their self-reflections at the beginning of semester.

This result suggests that my teaching is positively related to the students' identification of weak or linking forms, as the following participants' reflections show.

Student 1

*I easily miss the words in some long sentences when I take dictation. For example, I often cannot recognize the **-ed endings**, so I often cannot recognize the linking, especially when the speakers speak so fast. I have poor memory as I often focus on those unfamiliar words, and then miss the other key words.*

Student 11

*As I lack the **phonological knowledge**. I cannot catch the linking words.*

Student 12

*Sometimes my listening skills are good and sometimes poor because I **have not received systematic training in learning phonology in my middle school, especially IPA. In my experiences, I learned IPA** from learning to reading individual words, and then infer the pronunciation of letters. So **I have not solid foundation of phonology.** In one sentence, I try to remember the first part but miss the following part.*

Student 23

*I am not clear about the **linking words**, which makes me misunderstand the new words.*

The above quotations indicate that the students have come to realize the significance of linking or weak forms in CS, and have promoted their understanding of how weak forms or linking forms may change in the communication process. At the same time, they are learning to overcome this listening difficulty.

Inadequate spelling ability

More than one-third of the participants still perceived inadequate spelling ability as their listening difficulty in the process of dictation. By contrast, almost half of the participants recognized this point at the beginning of semester as their listening difficulty. This means that the students have made progress in spelling ability through my teaching. This seems to suggest that Chinese students have spelling problems when they take dictation of English as English spelling is quite different from their mother tongue. As dictation of two texts was an important data collection instrument, spelling was naturally a way of reflecting the participants' level of listening comprehension, although sometimes they complained they understood but could not write the correct words. The following are some of the participants' reflections.

Student 2

*In listening, **if I meet some new words or words I cannot spell well,** I will concentrate on those words and ignore the following*

part, and then I cannot have enough time and energy to write those words or sentences I am very familiar with.

Student 17

*When I take a dictation, I often feel confused and nervous in the long sentences of unknown words. I have no idea to deal with them. Because of long sentence, I have no good short-term memory, and unknown listening vocabulary will add to my listening difficulties. **Some words I know but cannot spell right***

Student 26

*I have difficulty in vocabulary with linking. I can recognize very simple one but cannot catch the others in most time. I can catch the meaning of **words but cannot spell them.***

Student 13

*I am lacking in listening vocabulary. Sometimes I can understand the meaning **but cannot write down. Also sometimes I cannot write those words I know in reading.***

In light of the reports above, I can realize that the spelling problem is a disturbance factor that affects the precise measurement of students' understanding of CS: they mentioned they understood some words but could not write them down. This implies that the students' exact ability in listening could have been underestimated as their understanding might not

have been fully exhibited through their writing. This also reflects a weakness in the research instrument by using dictation to explore student's LPs. To remedy this defect, I did not take spelling exactness as a rigorous criterion with which to assess participants' listening levels, but took a lenient scoring attitude throughout my research.

Poor memory or inadequate ability to integrate words into a proper and logical message

Nearly one-third of the participants identified their poor memory or ability to convert words into proper messages as one of their major listening difficulties. Most of them seem to have insufficient processing capacity when they listen to incoming information, especially when they meet some features of CS, or unfamiliar or unknown words. The following are the participants' reflections on their LPs in relation to this aspect.

Student 1

*I easily miss the words in some long sentences when I take dictation. For example, I often cannot recognize the -ed endings, so I often cannot recognize the linking, especially when the speakers speak so fast. I **have poor memory** as I often focus on those unfamiliar words, and then miss the other key words.*

Student 5

***My short-term memory is too poor.** I can write the first part but miss the following part.*

Student 17

*When I take a dictation, I often feel confused and nervous in the long sentences of unknown words. I have no idea to deal with them. Because of long sentence, **I have not good short-term memory**, and unknown listening vocabulary will increase my listening difficulties. Some words I know but cannot spell right.*

The above reflections lend some evidence to the argument that the poor short-term memory of the participants increases the difficulties in their understanding of CS as they needed more capacity and concentration to process incoming information. However, as this study has shown, semester's work could provide some support in this respect. If they practice more in their own time, then they will become more familiar with frequent words. Familiarity with the frequently used words enabled listeners not to rely on word for word recognition but on chunk recognition, which would then improve their ability to listen and comprehend CS. This familiarizing process will help the learners become more proficient listeners. In a similar vein, semester's work in phonological knowledge in CS helped the learners to improve their working memory for processing input information more efficiently, thus avoiding the problem of concentrating on the previous part while missing the following part.

To summarise, the discussions concerning the listening difficulties of the research participants after one-semester learning presented above are mainly

focused on the five major listening difficulties identified from the students' self-reflection reports. The difficulties are various: some are concerned with the details in CS like 'lack of listening vocabulary' and poor ability to recognize weak or linking forms, while some others are more cognitively related like 'focusing on the first part but missing the following part'. Fundamentally, the major difficulties of the research participants lie with their bottom-up skills, or their word recognition ability. If their lexical segmentation ability is improved, their listening comprehension will be promoted.

7.2.2 Participants' reflection on the causes of these LPs at the end of semester

To identify the causes of participants' LPs from their self-reflection reports at the end of semester, I coded and categorized their answers into 15 reasons (For details, please refer to Appendix Q).

Table 7.14 Summary of the causes of LPs

Types of Reasons (N=41)		Frequency	Percent
1	Little listening practice out of class	40	97.6
2	Lack of listening vocabulary	36	87.8
3	Lack of phonological knowledge	28	68.3
4	To guess one or two new words, resulting in missing the following part	27	65.9
5	Poor Memory	18	43.9
6	New words & spelling	15	36.6
7	Non-intelligence factors	12	29.3
8	Learning environment	10	24.4
9	Grammar	6	14.6
10	Context knowledge	4	9.8
11	Speaker	3	7.3
12	hand writing	2	4.9
13	Understanding passage partly	1	2.4

14	Proper names and people's name	1	2.4
15	Listening tips	1	2.4

Table 7.14 presents a summary of the reasons. The first four main reasons will be elaborated as their percentages are near two-thirds (65%), as the following table exhibits.

Little listening practice out of class

Nearly all participants attributed their poor listening to lack of practice in their spare time. The following are typical participants' reports:

Student 1

I did not spend much time in practicing, led to some mistakes in grammar and spelling mistakes.

Student 11

I lack more practice. Although the teacher had put listening exercises into the virtual classroom, I just downloaded them and spent little time on it.

Student 14

I seldom practice in listening

Student 27

I spent much time in writing and reading, while ignoring practice of listening-- Lack of practice in listening

Student 36

I cannot catch the place where the linking is located because of lack of long-term listening practice.

As shown in the above excerpts, participants had developed some LPs because of their lack of practice outside the classroom, even though enough exercises were provided through the Visual classroom. This suggests that teachers will need to think about how to motivate students to practice listening more, and it also means that the students have achieved a good sense of practice on their own.

Lack of listening vocabulary

This factor was also the first listening problem remaining unresolved after one-semester learning. An overwhelming majority of the participants (nearly 90%) considered ‘lack of listening vocabulary’ to be their second most common causes. The following are a few of typical reports they provided.

Student 29

Not familiar with the usage of some known words

Student 30

Lacking enough listening vocabulary causes my limited understanding of the whole passage.

Student 32

My command of listening to English is poor and lack of phonological knowledge and listening vocabulary.

Student 36

*Lack of listening vocabulary, so I cannot write the words like
'maggot & genetic'*

Student 38

Limited listening vocabulary makes me not write them down.

Student 41

*All in all, it is the size of listening vocabulary that influences
my listening as the sentence is made up of words. Since I
cannot catch the vocabulary, how can I get the whole sentence?*

The participants' identification of the reasons for LPs shows that recognition of listening vocabulary is a crucial step for students to reach a fluent understanding of CS. The acquisition of listening vocabulary is concerned with numerous factors ranging from being familiar with verbal pronunciation, understanding meanings and writing them down, to being familiar with the features of listening vocabulary in CS. That is to say, students should also be familiar with the lexical variations in pronunciation when words are put together. Therefore, further semester's work in the features of CS is essential for students to understand verbal communication fluently.

Lack of phonological knowledge

Almost two-thirds of the participants regarded 'lack of phonological knowledge' as one of the main reasons for their listening difficulties. They

expressed their ideas from diverse perspectives and in various ways, as the following extracts from the students' self-reflection reports prove. I will start my analysis with the following excerpt on the participant's sense of rhythm in CS.

Student 11

I lack good sense of rhythm.

Eighteen participants believed that they lacked a good sense of rhythm, as exemplified in the excerpt above, which played a very important role in understanding CS. As has been discussed in Chapter 2, the English language is a stress-timed language, and the stressed syllables occur regularly (Avery & Ehrlich, 2004). Besides, stress-timing causes linking, assimilation and reduction (Rost, 2001); so stress plays a key role in understanding other phonological features in CS. English as a stress-timed language is thus quite different from Chinese, which, as a tonal language, employs different syllables and tones to convey different meanings.

As stress played a central role in causing diverse phonological variations, it would not be difficult to account for some of the participants' typical self-reflection reports below, which expose a number of listening difficulties in relation to various features of CS.

Student 19

Sometimes I take it for granted with my familiar words. For example in basic dictation text No 13 chunk, it should be 'with a family' but I thought it as 'with families'.

This quote reveals that the participant easily mismatched seemingly familiar pronunciation of words with other words that are similar in pronunciation.

Student 20

I cannot catch the linking words such as 'in the world of science and medicine', 'world of 'cannot catch the linking word.

Student 25

Having not mastered the pronunciation of vocabulary in linking causes break-down in catching main ideas.

Student 31

I cannot recognize some words with linking.

As evidenced in the above excerpts from the students' self-reflection reports, the students identified various listening difficulties in relation to features in CS, such as linking, and mismatching one word with another of similar pronunciation.

The difficulty in recognizing variations in lexical pronunciation, as mentioned in the self-reflection reports above, is actually a very common listening problem among Chinese students as this feature of CS does not

exist in Chinese CS. As English is stressed-timed, the pronunciation of individual words will change when they link together with each other in CS. However, this is difficult for most Chinese students at intermediate level, as they tend to pronounce each word as though it were isolated from the CS.

Guessing new words results in missing the following part

This reason was also a main listening problem that the students reported. Almost two-thirds of the participants thought of it as one of the major causes of their failure in catching CS. The following are their descriptions:

Student 2

*When I listen to a sentence, sometimes I concentrate on those unfamiliar words, **which leads to missing the rest of them.***

Student 4

*As for the long sentence, if listening carefully and there are no new words, then I have no difficulties in understanding it without new words. But if there are new words, I would focus on them and **miss the following part, while being unable to write them down.***

Student 6

*I am unable to concentrate on my listening **when I focus on some unfamiliar words, and then miss the following part.***

Student 7

*Most of the time if I **cannot catch one or two words**, all my LC will be affected.*

Student 9

*If I **cannot recognize one or two words in the middle of a sentence**, then I have no interests in finishing listening, especially when the speaker speaks faster.*

The above reports suggest that one or two new or unfamiliar sounding words would definitely cause a breakdown in understanding CS fluently. This observation is actually in agreement with the dictation results, as has been discussed earlier in this chapter. Therefore, familiarity with frequently used listening vocabulary and a good command of the features of CS are vital skills for students at intermediate level, because they are conducive to the enhancement of their SWR in CS.

The above discussions about the causes of students' listening difficulties can be finally summarised in terms of the four major ones illustrated above. The students listed lack of practice in listening outside the classroom as the main problem, which indicates that they have realized the need for self-autonomy in learning English listening skills. The other three are all closely linked to the importance of listening vocabulary and phonological knowledge for efficient listening.

7.2.3 Participants' reflection on the aspects that they would need to focus on to improve their listening skills further

Based on the survey of the LP remaining unresolved after one-semester instruction and study, a number of teaching and learning activities can be identified. In the following section, I will elaborate on this issue by combining students' reflections and my understandings as both a researcher and a practitioner.

Based on the findings of students' self-reflections on the aspects to be strengthened to improve their understanding CS, I coded and categorized their answers with my colleague into seven aspects for future study (For details please refer to Appendix R). Table 7.14 summarises the seven major points. However, I will focus on the first four aspects as one-third or more of the participants held these opinions. These aspects should be participants' needs in their LC.

Table 7.14 Summaries of strengthening aspects to improve understanding of CS

Types of Aspects (N=41)		Frequency	Per cent
1	Enlarge listening vocabulary	37	90.24
2	Focus on my phonological knowledge	35	85.37
3	Short-term memory	18	43.90
4	Background knowledge	15	36.59
5	Grammar	4	9.76
6	Non-intelligent factors	3	7.32
7	Practice more	2	4.88

Enlarge my vocabulary

The overwhelming majority of the participants referred to enlarging

listening vocabulary as the most necessary approach to improving their listening comprehension for their studies in English. This also supports the claim that SWR or bottom-up recognition is crucial for students at intermediate level to strengthen their skills in listening comprehension.

Student 2

Memorize more frequent listening vocabulary to improve my ability to deal with CS of faster pace. On one hand, I will enlarge listening vocabulary. On the other hand, I will train my English rhythm and short-term memory to strengthen my phonological knowledge.

Student 3

I think I should focus on the following three aspects: phonology, vocabulary and memory.

Student 19

If people have limited listening vocabulary, it will never reach the good standard of listening even if he/she has a good command of grammar. Anyway I will mainly focus on the listening vocabulary and sentence structure is my minor focus.

The descriptions above about the students' focus on listening vocabulary reveal that the participants have acquired a better awareness of their weaknesses in understanding CS after one-semester instruction. This suggestion is also in line with the listening difficulties perceived in the students' self-reflection reports and indicated in their dictation tests.

Focus on phonological knowledge

The majority of the participants (85%) put forward the idea that learners should focus on the acquisition of phonological knowledge, which indicates that they have come to realize that phonological knowledge plays an important role in improving their understanding of CS, as can be seen from the following descriptions by the participants.

Student 4

Focus on my pronunciation and phonological knowledge.

Student 12

I don't think one-semester study is very interesting but I really made progress in linking and sentence rhythm. Actually this semester's study has improved my awareness of linking and sentence rhythm. I will strengthen these two parts.

Student 21

Focus on the pace of speaker and syllables_and try to know the important information in various listening passages

Student 9

Focus on recognize those words which contain weak form or linking.

Student 14

Continue to solve my linking problems, esp recognition of -ed endings and s in plural forms.

Student 31

Try to be familiar with rules of linking and reduced form

Student 33

Get familiar with stressed and unstressed words and sentences.

The students' reflections enabled me to realize that they had a strong desire to strengthen the features of CS such as linking, reduction, weak form, -ending, elision, and stressed and unstressed rhythm. Meanwhile, their eagerness to learn more of these kinds of language features showed that one-semester instruction promoted their awareness of the significance of phonological knowledge. However, their opinions indicate that the features of CS form part of their inadequacy in understanding it and they will need to continue their phonological practice.

Short-term memory

More than two-fifths of the participants (above 40%) maintained that they should pay more attention to promoting their short-term memory, as evidenced by some of the following reports:

Student 1

Improve my ability of short-memory.

Student 2

Memorize more frequent listening vocabulary to improve my ability to deal with CS of faster pace. On one hand, I will enlarge my vocabulary. On the other hand, I will train my English rhythm

and short-term memory to strengthen my phonological knowledge.

Student 6

Improve my ability of remembering whole sentences.

The above quotations suggest that the participants have acquired a certain awareness of CS and the importance of chunking in promoting information processing when listening to English. The teaching of listening in the future should be focused on frequent formulaic language and chunking listening training. The purpose is to make formulaic language and chunking as one connected unit, as one single word is processed in CS. The ability to recognise frequently used formulaic language automatically, as if it were one big word, will help the listener become a fluent listener, and greatly strengthen his/her processing capacity when listening to connected English speech.

Background knowledge

Over one-third of the participants thought they needed to acquire more background knowledge to improve their listening comprehension. The following are their statements:

Student 39

Improve my background knowledge of listening

Student 41

Background: more reading to enrich my world knowledge.

Student 5

Try to create a real context in our daily life to communicate with people in English. Student 14

Pay more attention to the context knowledge

The above excerpts helped me understand the importance of background knowledge in students' understanding of CS, and reminded me that, in teaching listening courses in future, we might design different listening contexts which involve different and common topics in CS. This design will familiarise students with common listening vocabulary pertaining to those topics while enriching and enlarging their world knowledge.

Effective learning strategies in listening acquisition from participants

After one-semester instruction, students were also asked to reflect on their perceived effective learning strategies in listening acquisition. Based on the answers of an open-ended questionnaire survey, I summarise and categorise all the learning strategies into three main items: listening vocabulary, phonology, and short-term memory (see Table 7.15 below).

Table 7.15 Helpful listening strategies participants found in phonology, vocabulary & memory

Listening Vocabulary	Frequ ency /%	Phonology	Frequ ency %	Short-term Memory	Frequ ency %
1. Spend at least 15 minutes every day to listen to interesting stories to enlarge more listening	39 95.1%	1. Listen to more English songs to be familiar with the pronunciation of words	31 75.6 %	1. Learn to recite good listening articles &	18 43.9%

vocabulary				sentences	
2. Listen to some humorous and amusing articles which contains exercises of filling in frequent words in blanks	18 43.9%	3. Improve my ability to deal with CS of faster pace	15 36.6%	2. Train the short-term memory by more memory work	10 24.4%
3. Practice dictation more	16 39.0%	3. Improve my pronunciation and knowledge of linking, stressed and weak forms.	7 17.1%	3. Improve my ability to remember the whole sentence	5 12.2%
4. Make a list of frequent listening vocabulary to remember every day	12 29.3%	4. See English movies with subtitles, watch funny cartoons and imitate the situation dialogues	5 12.2%		
5. Practice some similar sounds of vocabularies or phrases are very helpful.	6 14.6%	5. Grasp chances to participate in extra-curriculum activities such as English speeches and experts' talk in English	4 9.8%		

As shown in Table 7.15, the students mainly wanted to improve their English LC in the above three main areas. To make improvement on listening vocabulary, more than 90 per cent of the participants were determined to spend at least 15 minutes each day in enlarging their listening vocabulary by listening to interesting English stories. Still above one-third of them would focus on humorous and amusing stories containing exercises with blanks to be filled in with frequent words. As to the aspect of

phonological knowledge, above two-thirds of the participants wanted to improve their extent of familiarity with frequent listening vocabulary through listening to English songs, which was a very popular practice among students. Another strategy they wanted to emphasize was to see English films and imitate some situations to become familiar with the features of CS such as linking, weak forms, stressed and unstressed words. Concerning short-term memory, they suggested reciting or remembering more articles or sentences. All these point to the effectiveness of one-semester instruction in raising the participants' awareness of the role and importance of SWR in listening comprehension.

7.3 My reflections as an English teacher and a researcher

7.3.1 My reflection on the recognition of function and content words

As shown in Table 7.7, at the dictation tests of beginning of semester, the participants did slightly better in function word recognition than in content word recognition. In addition, they achieved better function word recognition than content word recognition in the post-test of the intermediate text. These results are in line with the findings presented earlier in that successful recognition of a singleton word mainly lies with the listener's familiarity with the word, rather than with its being a function word or a content word. This, however, does not echo the claims of Eastman (1993) and Schmitt (2010) that function word parsing and learning is a more difficult skill. A result from the present study that seems to fall in line with their suggestion is that the improvement of content word recognition was somewhat better than function word recognition in the post-test of the basic

text.

Although content words tend to be more stressed than function words in CS , I believe Grosjean and Gee's (1987, p151) suggestion is helpful in that there is no need to break the continuum of word forms into two classes of function and content, because 'in context, any form can be destressed or stressed'. Actually, as this study proves, the major factor influencing the success of lexical segmentation and SWR is related to the properties and frequency of the function words or content words. Please see Table 7.8 demonstrating the most frequent 50 word forms in the BNC (Leech, Rayson & Wilson, 2001, p 120).

Table 7.8: The most frequent 50 word forms in English

1	The	11	I	21	<i>Have</i>	31	She	41	Do
2	<u>Of</u>	12	<i>For</i>	22	Are	32	That	42	Been
3	<i>And</i>	13	That	23	Not	33	Which	43	Their
4	A	14	You	24	<u>This</u>	34	<u>Or</u>	44	Has
5	In	15	He	25	's ^b	35	<i>We</i>	45	Would
6	To	16	<u>Be</u>	26	<u>But</u>	36	's ^c	46	There
7	<u>It</u>	17	With	27	Had	37	<u>An</u>	47	What
8	<i>Is</i>	18	On	28	<u>They</u>	38	'n't	48	<i>Will</i>
9	To	19	By	29	His	39	Were	49	All
10	Was	20	<u>at</u>	30	<u>from</u>	40	As	50	<i>It</i>

Note: The underlined bold function words are from the basic text, the italic red bold words are from the intermediate text, and the three circled bold words are from both the basic and the intermediate texts.

Ten of the fourteen function singleton words in the two dictation texts are within the first 50 frequently used words in the spoken texts. That is to say,

of the first 50 frequently used words, more than two-thirds are function singleton words (above 70%) in the basic text and half are function singleton words in the intermediate text. Interestingly, all the first 50 words are function words. Among the 10 function words both from the basic text and the intermediate text respectively, there are three words ‘but’, ‘they’ and ‘an’, appearing in both of the two proficiency texts.

Students’ familiarity with the words in listening material seems to have affected their word recognition more than any other factor. By this, I am not dismissing Schmitt’s or Eastman’s idea as wrong. I am just trying to contextualize the present study among the intermediate levels of Chinese university students. For this group of L2 learners, content words within the learners’ command are still very basic. That is to say, they are almost as familiar with the content words as with the function words. That was why the participants achieved better recognition of function words than content words regardless of the pronunciation features of function words in weak forms.

The impact of the level of difficulty of content words in CS

In discussing the relationship between function word and content word recognition, the level of difficulty of content words could be an influential factor. This idea is in agreement with the analysis presented above in that it is the frequency band of the words that affects word recognition more than the category to which a word belongs, that is, function or content.

This suggestion can gain support from the cases of ‘now’ and ‘found’ in the intermediate text, whose mean scores of end of the semester are even lower than those at the test of beginning of the semester. Difficult or unfamiliar content words near the function words seem to have affected listeners’ recognition of the function words either before or after the content words as function words are spoken in their weak forms. In these cases the difficult word ‘maggots’ seems to have affected the participants’ level of recognition.

In the process of identifying the two words, the listeners could have used inappropriate listening strategy and insisted on, in Eastman’s (1993, p 499) words, ‘stressing all syllables— or avoiding distressing them— while speaking that they may have attempted to reconstitute unstressed syllables to their full salient form while listening, in order to be able to deal with them as content words’. The equal attention to both stressed and unstressed syllables might have led to the recognition of neighbouring words instead of the targeted word itself. However, the basic cause for this result could mainly be ascribed to the existence of difficult content words like ‘maggots’.

The significance of the positions of function and content words in CS

The positions of function words and content words within a sentence could make a difference to their recognition rates. For instance, in the intermediate text, the following content words: ‘most’, ‘today’, ‘example’, and the following functional words like ‘much’, ‘but’, ‘some’, and ‘so’ achieved a

high recognition rate. Based on the data above, when located at the sentential beginning or end, or at least after or before an obvious pause, both function and content words seem to be easier to be recognised.

Transformations of singletons in pronunciation

What is also important to notice is the fact that, in CS, some very common words such as ‘are’, ‘a’, ‘of’, ‘and’, ‘an’, ‘have’ are pronounced differently from their pronunciation in isolation because of features such as word linking and assimilation. Many frequent function words in English have a strong form and a weak form, but they are often pronounced in their weak forms when used in uninterrupted speech. In addition, most function words are short sounds that are easily missed out in CS, which makes it more difficult for learners to achieve high levels of recognition of such words. This is particularly so in the case of Chinese university students as their L1 does not exhibit such features, as previously discussed.

The above analysis of content and function word recognition indicates that one-semester instruction on the features of CS, and the lexical segmentation in both content and function words were positively co-related. However, there exist some discrepancies, imbalances and limitations in different aspects of word recognition. This implies that it is not always a straightforward process to find coherent criteria to say which category of words is easier to identify, content words or function words.

It would therefore be helpful to take into account various other factors, rather than merely the contrast between content and function words. I would argue that the word frequency band is one of these vital factors. That is to say, SWR depends more heavily upon students' familiarity with the variations of listening vocabulary or general vocabulary in CS.

Mismatch between speakers' and listeners' incorrect pronunciation

Above one-third of the participants identified the mismatch between the speakers' and the listeners' incorrect pronunciation as one of their major LP after one-semester instruction and study, as indicated in their self-reflection reports such as the following one.

Student 10

I cannot differentiate from articles such as 'an' & 'the' often misspelled as the other words when I listen to CS.

Table 7.10 the result of T-test of mismatch 'an' as 'a' in the basic dictation text

(Participant N=42)	Basic Text <i>Take care of <u>the</u> children</i>								
	Test at beginning of the semester		Test at the end of the semester		Paired Differences				
	Count	Valid Percent	Right Count	Valid Percent	Post-Pretest	Mean	Std. Deviation	T	Sig (2-tailed)
①the	23	54.8	22	52.4	①the	-.02	.3	-.6	.6
*their	7	16.7	9	21.4	*their	.05	.2	1.4	.2
②the	18	42.9	17	40.5	②the	-.02	.2	-1.0	.3

*their	14	33.3	15	35.7	*their	.02	.2	1.0	.3
③the	19	45.2	16	38.1	③the	-.07	.3	- 1.8	.1
*their	20	47.6	22	52.4	*their	.05	.2	1.4	.2
④the	36	85.7	35	83.3	④the	-.02	.2	- 1.0	.3
*their	4	9.5	5	11.9	*their	.02	.2	1.0	.3
An	21	50.0	23	54.8	An	.1	.4	.8	.4
*a	18	42.9	18	42.9	*a	.0	.3	.0	1.0

Notes: the numbered words are target words in the dictation text, the words with * represents students' wrong transcription; the number in superscript of target words is the repeated times appearing in the dictation text.

This listening difficulty also surfaces in Table 7.10, as the participants failed to recognize 'the' because quite a number of them misinterpreted it as 'their'. The mismatch between speaker's and listener's pronunciation seems to be a common and recurrent problem for Chinese university students, as evidenced by the table below.

In fact, the phrase 'take care of the *children*' appears in the basic dictation text four times. Participants had trouble in recognizing it in these four cases in both at the beginning and at the end of the semester tests. However, more participants had this problem at the end of the semester than at the beginning of the semester. In this case, one-semester instruction and study did not seem to have had any positive effect on this aspect of listening comprehension.

At the test of the beginning semester, seven participants misrecognized ‘the’ as ‘their’ when they listened to this phrase for the first time, while in their second listening, 14 of them committed such errors, and 20 made the same mistake when they listened to the phrase a third time. This seems to suggest that students need to be exposed to a given form a certain number of times before they are able to achieve full comprehension of such a form. Therefore, when it came to the fourth time of listening, only four people made such a mistake. The outcome might be a result from their accumulated familiarity with this language phenomenon after their three previous ‘trials and errors’.

In the post-test, this situation seemed to be similar to that in the pre-test. Nine participants made such mistakes when they listened to the phrase for the first time. When they listened to it the second time, 15 of them committed such errors, and 22 for their third time. This changing pattern is similar to that of the test at the very beginning of the semester; in other words, the more they listened, the more mistakes they made until they reached a point at which, in their fourth listening, only five people made such a mismatch. They seem to have needed exposure to this form on a number of occasions to be able to reach full comprehension. What is puzzling is the fact that there seem to be no significant differences between the tests of beginning semester and end of the semester. This suggests that the identification of ‘the’ was more context dependant than one-semester instruction had anticipated. The following extracts from the students’ self-reflection reports will offer more clues to this difficulty.

Student 18

I made mistakes in dictation as I mismatch target words into similar words in sounds.

Student 40

I often misspelled the target words into my familiar words.

Chinese learners often find it confusing when listening to some spoken words in CS. Although they know the differences between these easily-be-confused words in written forms, they often tend to make mistakes when they listen to them. This holds true for some written forms. These mistakes often make Chinese non-native speakers of English feel frustrated and lose their confidence in listening comprehension.

Chapter 6 has shown the words that were confused by research participants in the pre-test dictation. To present a clearer picture, Table 7.11 and Table 7.12 show lists of the words the participants misunderstood in both at the beginning and at the end of the semester.

Table 7.11 results of T-test of words confused at the beginning and at the end of the semester

(Participant N=42)	Basic Text								
	Beginning of the semester		End of the semester		Paired Differences				
	Count	Valid Percent	Right Count	Valid Percent	Post-Pretest	Mean	Std. Deviation	T	Sig (2-tailed)
1. Julie	1	2.4	2	4.8	1. Julie	.02	.15	1.00	.32
*July	11	26.2	17	40.5	*July	.14	.35	2.61	.01
2. Jones	2	4.8	3	7.1	2. Jones	.02	.27	.57	.57
*John	5	11.9	16	4.8	*John	.26	.45	3.81	.00
3. relative	10	23.8	11	26.2	3. relative	.02	.15	1.00	.32
*lot of	12	28.6	14	33.3	*lot of	.05	.22	1.13	.16
4 .fifty	23	54.8	31	73.8	5.fifty	.19	.40	3.11	.00
*fifteen	10	23.8	8	19.0	*fifteen	-.05	.31	-1.00	.32
5. (1)hire	38	90.5	39	92.9	6.(1)hire	.02	.15	1.00	.32
*hair	4	9.5	1	2.4	*hair	.00	.31	.00	1.00
6. their	37	88.1	37	88.1	8. their	0	0	0	0
*the	3	7.1	3	7.1	*the	0	0	0	0
7. (2)hire	37	88.1	39	92.9	9. (2)hire	.05	.22	1.43	.16
*hair	5	11.9	4	9.5	*hair	-.02	.15	-1.00	.32
8. sitter	8	19.0	6	14.3	10. sitter	-.05	.31	-1.00	.32
*sister	12	28.6	9	21.4	*sister	-.07	.26	-1.78	.08
9. (3)hire	38	90.5	39	92.9	12. (3)hire	.02	.15	1.00	.32
*hair	3	7.1	2	4.8	*hair	-.02	.15	-1.00	.32

Notes: the numbered words are target words in the dictation text, the words with * represents students' wrong transcription; the number in superscript of target words is the repeated times appearing in the dictation text.

Table 7.12 result of t-test of words confused at the beginning and at the end of the semester for the intermediate dictation text

(Participant N=42)	Intermediate Text								
	Beginning of the semester		End of the semester		Paired Differences				
	Right Count	Valid Percent	Right Count	Valid Percent	Post - Pretest	Mean	Std. Deviation	T	Sig (2-tailed)
1. world	25	58.1	33	80.5	1. world	.2	.5	2.5	.0
Word*	9	21.4	5	12.2	word	-.1	.5	-1.2	.3
2. tests	7	17.1	19	46.3	2. tests	.3	.6	3.1	.0
text*	9	22.0	5	12.2	text	-.1	.5	-1.3	.2

Notes: the numbered words are target words in the dictation text, the words with * represents students' wrong transcription; the number in superscript of target words is the repeated times appearing in the dictation text.

7.3.2 My reflection on validating qualitative data

The procedures for translation and transcription

In order to elicit reflections of listening difficulties clearly at the end of the semester, participants were allowed to answer the reflecting questions in Chinese to express themselves clearly, as most of them could not find the appropriate English words to express themselves because of their lower proficiency level. I then translated their reflections into English. To ensure the reliability of the results, I checked them again to ensure the accuracy of their opinions. Finally, one of my colleagues, an associate professor in translation, confirmed whether my translations really reflected the students' reports on their listening problems and the reasons for their listening problems. The purpose of this was to check whether I had put my anticipated thoughts into the translation as a researcher. My colleague's results were similar to mine, with only a little discrepancy in the variation of

synonyms.

The coding issues

After being satisfied with the translation of the students' reflections, I began to code the collected data carefully and tried to search for any description of problems in their learning experiences of listening. Firstly, individual listening problems and causes were identified as listening problems and the causes of these problems. Once these listening problems and causes had been identified, further terms were used to categorise them. I presented all the different descriptions of their listening problems, except those that were similar or the same. After several revisions, I categorised their descriptions as 12 listening problems, according to their similarities in representing listening problems. The total number of occurrences for each listening problem and cause were tallied. Any item reported more than once by the same student counted as one occurrence for each student so as not to exaggerate the final total.

After that, I gave each of the 12 listening problems a brief coding label. During the coding, I also noted the number of times each problem was mentioned, made a list of listening problems and ranked them according to the frequencies of occurrences. I then examined each problem for the features that linked it to Anderson's (1985) three-phase process of listening, identified as perception, parsing and utilisation. After that, the problems were classified into these phases of comprehension.

In the data analysis on participants' self-reflection at the very beginning and at the end of the semester in the main study, I coded and categorised the data with my colleague to check data consistency. The qualitative data were then 'quantised' (Teddlie & Tshakkori, 2009, p343) because of the 'big' size sample of 42, counting the total number of coded themes of listening problems and causes of listening problems in order to calculate the percentage of each theme.

Dependability is reliability in qualitative research. In this study, two measurements of dependability were carried out on participants' self-report data analysis at the very beginning and at the end of the semester. One is an 'inter-coder reliability' check which refers to the extent to which two persons agree with the coding of the data (Bryman, 2004, Domyei, 2007). Another one is an 'intra-coder reliability' check, which means the consistency of coding over time (Bryman, 2004).

Using Dörnyei's (2007) guidelines, one of my colleagues was asked to code participants' self-reports on their listening problems and causes separately at the very beginning and at the end of the semester. The Perreault and Leigh (1989) reliability index was used to calculate inter-coder reliability between coders. This reliability index accounts for differences in reliabilities when there are a number of categories. It focuses on the whole coding process. The inter-coder reliability of participants' self-reflection at the beginning of

the semester was 0.88 and 0.89 at the end of the semester. The inter-coder reliabilities were high and acceptable (Gremler, 2004). The minor differences identified were in the wording of categories.

The intro-coder reliability check was conducted three months after the initial coding of participants' self-report at the start of the semester, and again two months from the initial coding of participants' self-reflection at the end of the semester. The coding was redrawn and checked for the level of consistency with the initial coding. The Perreault and Leigh (1989) reliability index at the beginning of the semester was 0.90 and 0.91 at the end of the semester showing that the data was consistently categorised into the same or very similar categories. There were no major inconsistencies with the original categories.

7.4 Summary

It is a good way for learners to reflect on their listening problems, the causes of these problems and their learning strategies of improving LC. It is also a better way for the researcher to reflect on the issues that appeared in the whole process of research from data collecting, data coding, and translation to data analysis. The approach helped me interpret the research data in various ways and compare the possible discrepancies between data collection methods. This practice of interpretation was intended to see what general conclusions could be drawn, what discrepancies emerged and why they had arisen, as summarised below.

Firstly, a close analysis of the data from the research participants' self-reports helped to shed light on the following points: students' listening difficulties and their perceived causes, in addition to students' perceived strategies and methods for teaching and learning. Some of the suggestions are intuitive and others are more theoretical, especially after one-semester of learning. Having been interpreted and summarized, all the data seem to highlight the importance of teaching bottom-up skills to intermediate level students, especially in listening vocabulary, phonological knowledge and short term memory. This aim should be attained by offering semester's study not only in identifying singletons, but also in recognizing chunks and formulaic expressions.

Secondly, the findings of this study suggest that students' awareness of self-autonomy in the learning of listening skills has been greatly enhanced. As the retrospective self-reports after one-semester of learning indicate, the students no longer attributed their difficulty to a lack of listening vocabulary as the first reason, but nearly every one of them mentioned lack of practice out of the classroom as the first reason for listening difficulty. The overwhelming majority of them (over 97%) mentioned this point, although hardly anybody had done so at the very beginning of the semester. This most probably means that the students had gained some awareness that they should take more initiative and practise on their own in order to improve their listening. Lack of practice could have also been derived from external

sources: for example, not enough opportunities for practice due to the limitations of time, material, access, and practice partners. However, adequate practice should be more of one's own responsibility as a learner. This makes both the teacher and the student reflect upon the role the learner should play in acquiring adequate listening skills.

Thirdly, according to the retrospective self-reflection reports after one-semester of learning, "lack of listening vocabulary" remained the top listening difficulty for students. A lack of phonology knowledge also seems to be a problem both at the very beginning of the semester and after one-semester of learning. However, results from the Aural-Lex survey and the tests involving two levels of texts suggest that my instruction in the classroom played an effective role in increasing students' phonological vocabulary. This mismatch is thought provoking as the students were not satisfied with the progress they had made. Admittedly, my teaching could not have changed their word recognition ability dramatically as semester's time was limited and, therefore, the learners needed to devote sufficient time to listening practice on their own. At the same time, the instructors needed to be confident in their teaching practice and continue providing similar exercises for the students.

Fourthly, as the above point indicates, students thought that lack of listening vocabulary remained one of their top difficulties in reaching a fluent understanding of CS at the end of one-semester of study. This, however,

does not mean that they did not make any progress. Actually, and more importantly, they gained more awareness of phonological knowledge. As shown above in the participants' suggestions on the aspects to become the focus for listening learning, the participants realised the importance of the features of CS.

Finally, I would argue that, sometimes, the cause of listening difficulty and the listening difficulty itself can be the same thing. This has been a consistent dilemma in the process of categorizing listening difficulties and the causes of these difficulties. This is also reflected in many of the participants' self-reflection reports, which show that vocabulary is both a listening difficulty and a cause of listening difficulty. Vocabulary could have posed a barrier to their successful understanding, so it was a cause of their listening difficulty. Meanwhile, when the learners failed to recognize words in CS, the vocabulary was a difficulty for them.

'LC is anything but passive process' (Vandergrift, 2009. P3). It is an integrative and interactive process happening in listeners' brains, involving both bottom-up and top-down processes. In a word, the nature of LC is complex on account of the interdependent processes of encoding, segmentation, working memory, background knowledge and strategies. In real life, we cannot track back the previous input information to confirm certainty, which makes L2 learners feel that listening is, in reality, more difficult than reading.

In the next chapter, I will focus on the salient findings relating to the research questions, the theoretical and practical implications in researching and teaching listening, some limitations of this study and future research.

CHAPTER 8 IMPLICATIONS AND CONCLUSION

8.1 Introduction

This chapter provides a brief summary of the answers to the research questions and discusses the theoretical and pedagogical implications in the context of Chinese learners at an intermediate level. The generalizability of the findings to other contexts, such as learners from different proficiency levels and L1 backgrounds, are also discussed. The contributions and limitations of this research are also presented. Finally, I make suggestions for future research and for the teaching of listening in English for teachers and researchers, curriculum designers and developers of teaching and learning materials, with a special focus on Chinese university students (CUS).

8.2 Brief summary of research findings

To summarise the major findings from my research, I consider the whole process of this research project, such as the research aims and research questions. On this basis, I present the following findings and reflections.

What are the major difficulties in LC experienced by Chinese university learners at intermediate level? What causes such difficulties?

To understand students' listening difficulties, I used students' self-perception and online listening dictation tests to explore their actual listening difficulties at the very beginning and at the end of the semester.

The findings are summarised in Table 8.1 below, showing learners' listening difficulties identified through different means. However, each method of measurement shows something from its own particular perspective. This means there could be different and even contradictory findings and results from different measurement tools. Thus, in eliciting participants' listening difficulties, I realised that the three methods (see Table 8.1) did not present exactly the same results, let alone in exactly the same order of difficulty. We may therefore find there are some discrepancies between the results, along with different research instruments. This, however, reflects the complexity of listening as a skill.

A comprehensive analysis of Table 8.1 suggests that the major listening difficulties are concentrated on the following aspects: 1) the inadequate size of listening vocabulary, especially a frequently used listening vocabulary within the 1,000 word frequency; 2) poor phonological knowledge, which is mainly related to the features in connected speech; 3) poor ability to segment continuous speech into singletons, or to identify inflections within

Table 8.1 Comparison of LPs among three research instruments at the beginning of the semester

Research instruments	Rank	1) A questionnaire on listening problems	2) Retrospective self-reflection reports on LPs	3) Online processing LPs
Problems in listening comprehension	1.	Have difficulty in catching the next bit of speech, because I am still concentrating on what was just said (72.1%).	Lack of listening vocabulary (92.9%)	Participants had poor chunk recognition (18.6%)

	2.	Have difficulty in catching the ends of words (69.8%).	Lack of vocabulary (80.0%)	Inadequate spoken singletons (within 1000 frequent words) recognition (62.5%)
	3	Have difficulty breaking the stream of speech into separate words (58.1%).	Have difficulty recognising individual words in connected speech (66.7%)	Lack of phonological knowledge, such as linking (60.8%)
	4	Have difficulty in recognising words, even though I know them in written form (51.2%).	Quickly forget what has been heard (52.4%)	
	5		Focus on the first part, but miss the following part (50.0%)	

singletons; and 4) inadequate competency in identifying chunks as semantic units. All the listening difficulties listed in Table 8.1 occurred in the perception phase, a very fundamental processing phase during which incoming information entered L2 learners' minds. Students had serious difficulties in understanding fully connected speech as they achieved a very low percentage in terms of chunk recognition. This means that they lacked knowledge of the features of speech, which affected their listening comprehension. To put it another way, they did not have a clear picture of the fundamental rules of the sound changes of individual words in connected speech. In the present study, I devoted much space to the identification of chunks and took chunks as basic units for study.

As Table 8.1 shows, the first difficulty ‘Have difficulty in catching the next bit of speech, because I am still concentrating on what was just said’ on the ranking list in the general questionnaire survey, and the fifth ranked difficulty ‘Focus on the first part, but miss the following part’ in the self-reflection report are essentially related to chunk recognition. Both ‘next bit’ and ‘the first part’ or ‘the following part’, as they appear in the above statements, representing ways of grouping words rather than singletons. The findings show that students had a poor command of chunk recognition and their chunk recognition rate was even lower than their recognition rate of individual words.

The problem was caused by students’ limited phonological knowledge related to the features of connected speech, such as word variations in pronunciation, sound changes and grammatical connections. It had been intended that chunking would be an innovative way of enhancing short-term memory, which could assist L1 learners’ processing of input information and acquisition of knowledge, as has been reviewed in Chapter 2. The findings suggest, however, that chunking could be difficult for L2 listeners to employ, especially when they have a low capacity for individual word recognition.

This finding alerted me to the difficulty of chunking for the students. Subsequently, chunking was explored through singletons, inflections attached to singletons, other lexical endings, and linking parts. In this way,

various difficulties were presented, which were attributed to the inadequacy of the students' bottom-up skills.

What is the content and function words recognition of singletons in K1 after one semester of English study?

In one-semester's work, I spent 30 minutes focusing on promoting participants' ability to recognize certain language phenomena, especially the variations of sounds in connected speech like assimilation, weak forms, linking and phrases.

The research instruments used either at the beginning or at the end of the semester suggest that the students had their word recognition ability enhanced to some degree, indicating that this program was effective on the whole. However, some results seem to contradict previously held beliefs, the most important being related to the differentiation between content and function words. Schmitt (2010), for instance, argues that the parsing of function words is more difficult than that of content words.

This study reveals that there is not much distinctive significance in lexical segmentation, at least for the participating Chinese university students at intermediate level, in the identification of function and content words in K1. Successful English SWR is more closely related to the properties and frequency of function or content words. Therefore, the changing rhythm of words in continuous speech is better described and illustrated in the

combination of stressed and unstressed syllables than that of content and function words. As Grosjean and Gee (1987, p151) assert, any form, including content and function words, 'can be destressed or stressed.'

My research findings in this study can be generalised to the majority of first-year Chinese undergraduates in China, as more than three-quarters (75%) of the first-year undergraduates are placed at intermediate level based on their results of the placement test at the very beginning of their university life; the sample of participants in the present study represents the majority of the first-year undergraduates at intermediate level.

As for the learners from high intermediate and advanced levels or L1, the findings of LPs in this study may not be generalised to them as their listening problems may be different from those at intermediate levels. The findings of the causes cannot be applied to learners from different proficiency levels as the causes may also differ on account of different proficiency levels, different styles of learning acquisition, different background knowledge and a different focus on processing input information. Concerning the findings of AuralLex vocabulary at intermediate level, they definitely cannot be applied to the learners from different proficiency levels and L1. In terms of the findings of spoken word recognition in the two proficiency texts, they absolutely cannot be applied to L1 learners but, to some extent, they may be partly generalised to L2 learners from different proficiency levels, especially learners from the same

learning context with similar learning experiences. In a word, my research findings can be safely generalised to L2 learners at intermediate levels, specifically to learners in the Chinese context.

As reviewed in Chapter 2, English is a stress-timed language, while Chinese is syllable-timed. This means that the central point in learning uninterrupted English speech for Chinese university students relates to the changing rhythms of stresses, rather than whether they are content words or function words. This is not to deny the fact that function words tend to be unstressed while content words to be stressed, but just to emphasise that the stresses play a fundamental role in SWR.

What are the major listening problems that Chinese university learners at intermediate level still experience after a one-semester shared learning? What causes such difficulties?

In relation to this second research question, findings show that students still had difficulties in listening after they had completed a whole semester of focusing on their challenges and needs, as identified by the various research instruments described in Chapter 4 above.

Table 8.2 indicates the similarities and differences in LPs at the beginning of the semester and the end of the semester. Comparatively, there are some improvements in listening competence with respect to ‘lack of listening

vocabulary’ and ‘lack of phonological knowledge such as linking’. At the end of this semester, the students also had more awareness of their LPs than before. Quite a number of students perceived their LPs not only in connection with the size of their listening vocabulary but also in relation to SWR. The main reason for these problems is learners’ lack of knowledge of the features of connected speech.

Table 8.2 Summary of students’ LPs from self-reflection at the beginning of the semester and the end of the semester

At the beginning of the semester	After the end of the semester
<ul style="list-style-type: none"> ➤ Lack of listening vocabulary (92.9%) ➤ Lack of vocabulary (80.0%) ➤ Have difficulty in catching the next bit of speech, because I am still concentrating on what was just said (72.1%). ➤ Have difficulty in catching the ends of words (69.8%). ➤ Have difficulty recognising individual words in connected speech (66.7%) ➤ Inadequate spoken singletons (within 1000 frequent words) recognition (62.5%) ➤ Lack of phonological knowledge such as linking (60.8%) 	<ul style="list-style-type: none"> ➤ Lack of listening vocabulary (73.1%) ➤ Focus on the first part, missing the following part (43.9%) ➤ Poor recognition of linking or weak forms (39.0%) ➤ Inadequate spelling ability (36.6%) ➤ Mismatch between speakers’ and listeners’ incorrect pronunciation (34.2%) ➤ Poor memory or inadequate ability to integrate words into a proper and logical message (31.7%)

The main LPs of most of the students at the end of the semester are closely related to SWR. The main cause for this problem is that learners have little

listening practice out of class (see Table 7.13). Besides, ‘lack of listening vocabulary’ and ‘lack of phonology knowledge’ were mentioned both at the beginning and the end of the semester. The reporting of these two causes above proves that the participants had good awareness of the differences between listening vocabulary and vocabulary in general.

Finally, in describing participants’ listening difficulties, I noticed that the causes for listening difficulties are equally complex. It was hard to attribute specific causes to the difficulties. My central point is that the essential difficulty, or rather, what causes the assorted difficulties in listening for Chinese university students, was their unfamiliarity with the changes and variations in the pronunciation of words in continuous speech; in other words, what they needed to prioritise for improvement was knowledge of the features of connected speech.

Listening is a very complex mental process in language acquisition. To identify and understand L2 learners’ listening problems and the causes for these problems, we need to explore them in a holistic way. That is to say, we need to identify them through L2 learners’ perceptions, their listening performance such as phonological vocabulary tests, and dictation transcription. Learners sometimes cannot find the exact cause of their listening problems because of nature of listening, which is a transient and temporary phenomenon. Therefore, it is proper and good to explore it through mixed methods research, both in specific and general terms.

8.3 Research Implications

8.3.1. Theoretical implications

As the literature review shows, SWR in English as well as general listening comprehension is thought to be a dynamic and interactive process. In treating lexical segmentation as a process, I tried to attend to every link constituting the whole range, from the listeners' prior knowledge, through the listening process to the final results from the listening comprehension. Correspondingly, different research instruments were proposed, designed, modified and employed for different stages of the research. On the other hand, this project was also a process in which I had been thinking about how to analyse the research data, rather than taking research as a static practice. This theoretical understanding motivated me to complete my research project flexibly and efficiently in dealing with various research issues.

The results suggest that listening performance of L2 learners requires phonological knowledge. English connected speech contains quite a number of features typical of flowing speech; the knowledge of these features plays a very important role in L2 learners' attainment of fluent listening. It is crucial for L2 English teachers and learners to have a better awareness of the importance of listening vocabulary that includes SWR, chunk recognition and automatic recognition in formulaic language of connected speech.

This study intends to increase awareness of those L2 learners who are found to have more difficulties with bottom-up processing skills, especially in SWR and chunk recognition in connected speech. Moreover, it hopes to promote L2 learners' awareness of the differences between listening vocabulary and vocabulary in general. This study wishes to make English teachers of Chinese students realize the importance of teaching the features of connected speech in an English listening course, especially at an intermediate level of proficiency.

8.3.2 Methodological implications

Seeing English SWR as a dynamic and interactive process, I adopted a mixed methods approach for the present study. My research demonstrates the validity of the approach employed in identifying students' English learning difficulties and the causes of these difficulties. What must be stressed is the innovative use of text dictations, with each chunk followed immediately by a questionnaire, as a data collection method.

Firstly, the methods noted above of general questionnaires, self-reflection reports and dictation tests helped to investigate the listening difficulties but to different effects, as they had different survey methods and focuses. The design of the questionnaires actually drew on the students' own perceptions of their listening difficulties in the preliminary stage. Students' self-reflection reports were similar to the questionnaires in this respect, but they

revealed more of the students' attempts, either conscious or unconscious, to track down their listening difficulties as well as the causes of the difficulties. The dictation results helped interpret how well the students did in their listening tasks. The dictation was intended to expose students' listening difficulties by analysing their own dictation products rather than by their own narratives.

On the other hand, the innovative design and employment of text dictations of different difficulty levels is another significant aspect of this research. Unlike Goh (2000), who used mainly students' diaries and interview, in this research project dictations were followed immediately by a questionnaire after each chunk dictation. This approach involved a series of trialling phases before being finalized as a research tool for the main study. The method actually offered two instruments (a chunk transcription followed by a questionnaire) for the participants' listening practice and provided complementary data for interpreting their word recognition difficulties as well as the reasons for the difficulties.

Finally, what must be emphasized are my experiences of adopting the pre pilot and pilot study, which turned out to be necessary in finding out whether the research instruments to be used would reach the standards of validity, reliability and objectivity. In this process, students' self-reflections in the pre and the pilot study were the foundation on which to design a better questionnaire for the main study. On this basis, the other survey

methods were designed, modified and adopted and all of them together helped complete the research.

8.3.3 Pedagogical implications

As mentioned above, the teaching of listening as a social practice involves a number of fundamental elements: diagnosing LPs, curriculum design, proper and effective teaching and learning materials, effective and interesting exercises, classroom facilitating, effective teaching and learning strategies; taking into account the context and the actors that are involved in such a practice.

My research suggests that the major listening difficulties of Chinese intermediate students lie in their inadequacy in bottom-up skills, such as lack of listening vocabulary and poor phonological knowledge. In the future, teaching needs to take this finding into account. However, how to make improvements in English listening teaching and learning is an issue that needs to be addressed. As the theoretical implication of this study suggests, conducting research is a dynamic and interactive process. Likewise, English teaching should be a changing process, too. Students' feedback needs to be incorporated in order to adjust and diversify teaching methods and teaching materials, as has been discussed in Chapter 7. The teaching content and teaching methods need to be authentic, academic and entertaining.

The remainder of this section discusses the detailed implications for the English education of China's university students, mainly at intermediate level.

8.4.3.1 Raising the phonological awareness of connected speech

The findings of this research study suggest that listening performance of L2 learners, especially of CUS at an intermediate level, is closely related to their phonological knowledge. It is important to enhance students' awareness of phonological knowledge in their listening comprehension. Previous research (e.g. Goh, 1999; Goh, 2000; Pemberton, 2009) has shown the intimate relationship between lexical knowledge and listening performance, as was reviewed in Chapter 2. These studies take lexical knowledge as the main factor that influences students' understanding of connected speech.

The participants' reflections on the semester's work program, as well as the reasons from the dictations, reveal that teaching students the features of connected speech in terms of phonological knowledge systematically contributes to the improvement of their listening comprehension. This teaching practice promotes a good command of phonological knowledge including weak forms, linking, and assimilations.

Therefore, it is advisable for teachers of English to provide intensive

training for their students and extend their exposition to include frequently used groups of words or formulaic language from spoken texts so that they can become more familiar with the features of connected speech. As Field (2008, p27) points out, ‘teaching programmes need to give much more attention than they do at present to the features that make listening distinctive’. Besides, when students are ready to learn new words, an effective approach for teachers could be to familiarise students not only with the written forms and meanings of the words, but with their spoken forms and weak forms in chunks and sentences. Hopefully, this will raise their awareness of learning English words not only by sight but also by sound, including the words’ pronunciation in both weak and strong forms.

8.4.3.2 Developing teaching materials on phonological knowledge

In light of the findings of students’ listening difficulties as well as the reasons for these difficulties, we might as well consider how to design corresponding listening materials both in teaching content and form. Firstly, teaching materials to develop listening skills can be focused on the most frequently spoken words, ranging from 1000 to 2000. The purpose is to enable learners to have a good command of those frequently used words in connected speech as they constitute most of the dialogues, conversations and lectures in daily life. Meanwhile, emphasis should be placed on enlarging learners’ knowledge of phonological features; accordingly, the listening material is to include most frequently used groups of words or formulaic languages in connected speech so as to increase students’ ability

to segment words in uninterrupted speech.

Thirdly, teaching materials for listening can be presented in a variety of contexts to capture diverse spoken styles such as daily conversations, dialogues, and in a range of formats short passages, short video or audio clips and at different proficiency levels. This would help meet students' expectations as suggested by the participants' responses to questionnaires on teaching materials. They reported that they expect varied, flexible teaching contents and formats.

The materials can be purposely designed to focus on the features of connected speech such as assimilation, reduction and linking across neighbouring words. Besides, each dialogue or passage could contain some functional words to improve L2 learners' phonological knowledge so that they can observe and practice the rhythmic and stress-timed changes in continuous speech. Designing of audio or video clips is likely to offer some help, as these materials are focused on frequent formulaic languages or frequent chunks, which will help L2 learners achieve automatic recognition in connected speech.

8.4.3.3 Implications of curriculum design for teachers of English

As mentioned above, the phonological awareness of students may need to be further increased and the teaching materials should be accordingly

adjusted in order to improve listening comprehension. Curriculum design for English teaching should also be properly modified. The present research shows that students were familiar with the written forms of words but unfamiliar with their spoken forms; that is to say, the pronunciation of the words was their major obstacle to understanding spoken information. Therefore, the following suggestions are presented.

Firstly, it is significant to establish the teaching of the features of connected speech as one of the key objectives of listening courses, as this objective is not only crucial for improving students' listening comprehension, but also practicable, as research proves that 'connected speech can be taught to non-native speakers of English' from an early stage of the learning process (Brown, 2006, p6).

Secondly, it is necessary to develop L2 learners' automatic recognition of groups of words, especially groups of frequently used words or formulaic language to the point that the learners will understand the words in units rather than in isolation or as isolated syllables without any internal connection. This means that the design of the English curriculum should encourage learners to become familiar with word chunking. In this way, learners can improve their capacity to process efficiently the chunking of incoming information in connected speech and enhance their short-term memory, or working memory.

Thirdly, it is advisable to consider how the English curriculum could include ‘outside the classroom’ learning opportunities so as to help increase L2 learners’ access to different learning resources such as online listening exercises, movies, radios and videos in their spare time. Learning English in the classroom is not enough for L2 learners to acquire fluent listening skills, so it would be desirable for teachers to recommend good online listening resources to their students. The other effective way is to assign tangible things such as compulsory homework for students to finish. As a result, learners will have a better sense of sense of responsibility for implementing these tasks. As the findings of participants’ questionnaires show, they attributed the main cause of listening difficulties to lack of practice outside the classroom.

8.4 Contributions of the present study

The main contributions of this research project to listening comprehension in L2 in general and in the Chinese university context in particular are multi-fold. They are related to its research subject, research methodology, the practical significance at both academic and personal levels, and the pedagogy of teaching listening.

As Chapters 2 and 3 shows, in the last ten years, there have been drastic changes in English education in Chinese universities. The teaching of

listening has been elevated to an unprecedentedly high level. However, there has been a discrepancy between English teaching and social and government expectations. Also, English teaching practice and research are not as closely related as they could be. In this sense, the present research would provide some references for teaching English in the context of Chinese higher education.

Academically speaking, this study has filled the void in the literature on the effect of SWR on Chinese L2 learners' listening comprehension on the 1000 frequently spoken words band. In this respect, no previous study had examined the relationship of SWR and listening comprehension of CUS at an intermediate level. Similarly, no study in this area had previously employed dictation transcription and questionnaires as key data collection instruments.

Secondly, this research has employed a mixed methods approach involving both quantitative research and qualitative research. This whole design incorporated a pre-pilot study and a pilot study. These phases were extremely helpful to the final version of the research design. This proves that a well-designed research approach should not be ready-made, as it needs a process with ongoing adjustments to suit the specific needs of the research context in an ecological manner. The questionnaire survey on L2 learners' awareness of LPs and the causes of these problems is a new contribution to research as it employed closed questions, while combining

listening difficulties and the causes of these difficulties. Besides, the design process of this questionnaire included a series of phases with a large number of participants, such as interview, retrospection, introspection and group discussion, which helped avoid the weaknesses of the general questionnaire, while enhancing its validity, objectivity and reliability.

Moreover, this research contends that there is a need to differentiate between listening vocabulary and vocabulary in general in the teaching of listening in Chinese universities. In this differentiation, the importance of teaching phonological knowledge becomes all the more obvious. Also, there seems to be a need to stress the importance of English as a stress-timed language, as Chinese is a syllable-timed language. Accordingly, this research encourages English teachers to teach the features of connected speech in the teaching of listening and enable students to improve their listening comprehension of continuous speech effectively.

At a personal level, my important gain from this study is that my teaching practice regarding phonology instruction has become research-informed. As Kemmis and McTaggart (1982, cited in Thorne & Qiang, 1996) state, action research is a ‘means of improvement and increasing knowledge about the curriculum, teaching and learning’. This research has helped me ‘adopt a reflective approach to teaching’ (Richard & Lockhart, 1994,ix) by rethinking my teaching assumptions and beliefs about phonology. Meanwhile, I have also gained personal growth through conducting

academic research; I have learned how to think logically and reflexively and how to manage large amounts of data of a varied nature.

8.5 Limitations of this research and suggestions for future research

8.5.1 Limitations of this research

Although the present study has yielded findings that have both theoretical and practical value, it does have some limitations because of the nature of the research itself and of the limited duration of a PhD study. The theoretical and methodological limitations are acknowledged below.

Firstly, the time period for this study was not sufficiently long to show the real effects of one-semester instruction on listening comprehension. In addition, the students were open to other learning sources at the same time, which indicates that changes in the listening comprehension of the research participants could not be solely attributed to one-semester instruction. This implies that it would be desirable to consider multiple causes for the improvement of the SWR of the research participants along a longer period of time.

The second limitation is correlated to certain phonemes that had not received sufficient attention in my research. The most typical case was a lack of sample forms of third singular verb and verb + ed endings, which

means it was very difficult for me to make comments and come to conclusions about the recognition of the third singular verb ending ‘-s’ and past verb ending ‘-ed’, in terms of the differences between them. Another case was the inadequate uses of ‘th’ in the dictation texts. The participating students seemed to have found the pronunciation of ‘th’ rather difficult to perceive, no matter whether it was in the initial or ending syllables of words. This suggests that dictation texts could be more properly selected and even modified to include certain phonemes or syllables so as to suit the research purposes.

The third limitation to be discussed is the use of the dictation texts. While acknowledging the innovative approach of dictation plus immediate questionnaires in integrating strengths from qualitative and quantitative research, the following three aspects could have been more carefully addressed. Firstly, the use of dictation as a way of exploring students’ listening realities failed to fully reveal students’ listening skills. As the analysis in Chapter 7 indicates, understanding a spoken word in English does not necessarily include the ability to write it down exactly. Students may be impeded by inadequate spelling ability. The second aspect is that the dictation texts could have been recorded under more authentic conditions, with some background noise, for example. Those used in this research had any background noise deleted and audio-taped with Standard English intonation and pronunciation in an artificial environment. This practice helps focus on the language comprehension only. However, a realistic

English language background is not that pure and would present a number of different distractions around. Thirdly, the dictation texts could have been at different levels, rather than two texts at two levels as used in this study.

Another limitation in my data collection concerns the time provided for the participants to complete the questionnaires conducted after the chunk dictations. It seems that they did not have enough time to complete the closed questions following each chunk as they were too busy doing their dictation.

The last limitation for my data collection is the lack of interaction between the participants and the researcher in the process of data collection, especially after the self-reflection reports had been completed. This meant that the researcher did not always have the opportunity to ask the participants to expand on the answers to the open-ended questions they had provided.

8.5.2 Suggestions for further research

Suggestions for future research relevant to SWR and listening comprehension are based on my reflection on the limitations of this research project as well as on what I could have done differently. The first suggestion is that future studies could enlarge the variety of syllables or syllable clusters to be identified in connected speech. For example, the study of ‘th,’ verbal endings like ‘ed’ and ‘s’ could be given more attention, as the

previous section suggests.

Secondly, the initial and middle syllables or syllable clusters could be explored in the future, as the present research mainly addressed the ending inflections with limited words.

Thirdly, this research only studied the singleton recognition of content and function words within a frequency band of 1000 spoken words at basic and intermediate levels. In future studies, the differentiation at an advanced level could be probed further.

Fourthly, a semester's work could be conducted to examine L2 learners' communicative competence by integrating listening comprehension and oral skills as listening and speaking are two inseparable components in a communicative context. They can be mutually influential. Therefore, in future research, listening and speaking could be put together to make more significant contributions to listening in L2 contexts.

Moreover, research can address SWR as a longitudinal study; I mainly focused my study on SWR as a linguistic phenomenon. A research project over a period of time in an open society, such as the present research, means that there are multiple causes for listening difficulties and listening enhancement. In other words, the semester's work could not have been the only reason for changes in students' listening comprehension in relation to

their SWR; they might have had access to other learning resources and practice, either on their own or through other media. Therefore, a longitudinal research study could further ascertain the outcomes from one-semester instruction and help to assess its exact effectiveness in relation to L2 learners' LC. This would offer new perspectives for SWR in relation to LC and would possibly generate new findings.

The final suggestion relates to the research design. In an attempt to keep this study as ecological as possible, I tailored my research design to my own purposes and conditions. For example, the dictation texts had the background noise cancelled, with clear English presented. I included both non-native and native speakers as research participants in my pilot study, but did not include native speakers in the formal data collection. In future research, the perceptions or awareness of local and native English teachers and students of LPs and the features of connected speech could be elicited so that findings could be applied more generally. In order to investigate the causes of LPs from other perspectives, several participants could be selected to gain data through verbal protocols, such as introspective and retrospective reports, along with dictation transcription. This would provide a more nuanced picture of listening as an interactive process. This suggestion, together with other suggestions above, will contribute to further research in the field of SWR in L2 contexts in general and in the context of Chinese higher education in particular.

8.6 Conclusions

This research project has been a dynamic, challenging but rewarding process. I began by identifying the major difficulties in LC and the causes of these difficulties for Chinese university learners at an intermediate level, and then decided to make SWR its focus as I discovered how important SWR is for learners to become fluent listeners. After this, I explored the effects of a one-semester instruction on SWR in connected speech by a group of participating CUS. To reach this aim, I adopted a mixed methods approach in an attempt to describe, analyse, and discuss the complexities of LC in the context of L2 in general and Chinese higher education in particular.

I hope this study will contribute to bringing the attention of teachers and researchers in SLA to the vital roles of bottom-up skills and SWR in the teaching of listening. More locally, I hope the study will help raise awareness in both Chinese teachers and learners of the importance of these skills and of the features of connected speech in LC which have been neglected in English teaching in Chinese universities.

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APPENDICES

Appendix A: University Learners' Awareness of Listening Difficulties & Causes Survey

Section 1: Tell us about you...

Gender:	Age:
County:	Major:
City:	Department:
Province:	College:
<p>Prior English Learning Experience</p> <p>1. When did you <u>start</u> learning English? Please tick <input type="checkbox"/> <u>one</u> type of school only:</p> <p>(a) Primary School _____ (If so, say which grade: _____)</p> <p>(b) Junior School _____, (c) Middle School:</p> <p>Key Middle School _____ General Middle School _____</p> <p>2. Did you learn phonological knowledge such as linking, elision, reduction, sentence stress, assimilation in the past? (Please tick <input type="checkbox"/>)</p> <p>(a) Yes _____ (b) No _____</p>	

Section 2: Tell us what you think about listening to English

1. How important is listening to English for you?

Please rate the importance of listening to English for you, according to the scale:

1 = Very important, 2 = Quite important, 3 = 50/50 (neither important nor unimportant); 4 = Of little importance, 5 = Not important at all

For each of the statements below, tick one box to indicate how important listening to English is for you:

	1	2	3	4	5
--	---	---	---	---	---

	Tick one box in each row				
(a) For my university study , Listening to English is					
(b) For my future needs , Listening to English is ...					
(c) In the process of listening , pronunciation is ...					
(d) In the process of listening , listening vocabulary is ...					
(e) In the process of listening , the skill of translating from English into Chinese is ...					

2. How difficult do you find listening to English?

Please rate the difficulty of listening to English, according to the scale:

1 = Very difficult, 2 = Quite difficult, 3 = 50/50 (neither difficult nor easy),

4 = Quite easy, 5 = Very easy

	1	2	3	4	5
	Tick one box only				
In my English course, I find listening to English is ...					
In my English course, I find understanding my teacher's spoken English is ...					
In my English course, I find understanding my peers' spoken English is ...					
In my English course, I find pronunciation is ...					

3. Which English skill do you find the most difficult?

Please rank the following English skills, in order of difficulty from 1 to 4, according to the scale: 1 = Most difficult for me, 4 = Least difficult for me. Make sure that each of the numbers 1, 2, 3, 4 are used once only.

	Ranking (from 1 to 4)
--	------------------------------

(a) Listening	
(b) Reading	
(c) Speaking	
(d) Writing	

4. What causes you the greatest difficulty in listening to English?

Please **rank** the following causes of listening difficulty, in order of difficulty from 1 to 5, according to the scale: 1 = Most problematic, 5 = least problematic. Make sure that each of the numbers 1, 2, 3, 4, 5 are used **once only**.

	Ranking (from 1 to 5)
(a) Background knowledge	
(b) Grammar	
(c) Memory	
(d) Pronunciation	
e) Vocabulary	

Section 3 –Tell us about your listening difficulties ...

<p>(a) How often do you experience difficulties with each of these 10 aspects of listening comprehension?</p> <p>Tick each statement below as appropriate, according to the scale:</p> <p>1=Never,2=Seldom,3=Sometimes, 4=Often, 5=Always</p>						<p>(b) What’s the reason for each (lack of) difficulty?</p> <p>Explain each statement on the left, by ticking all the reasons that apply:</p>						
<p>When I listen to spoken English I ...</p>		1	2	3	4	5	<p>Because I ...</p>					
		<p>Tick one box in each row</p>					<p>Tick as many boxes as apply for each statement</p>					
1	<p>have difficulty in breaking the stream of speech into separate chunks and words ...</p>						<p><input type="checkbox"/> don’t know the rules of sentence stress in English</p> <p><input type="checkbox"/> don’t have a large enough ‘listening’ vocabulary</p> <p><input type="checkbox"/> don’t have a large enough vocabulary</p> <p><input type="checkbox"/> don’t know how the pronunciation of words changes in connected speech (e.g. linking, weak forms, assimilation)</p> <p><input type="checkbox"/> Don’t know <input type="checkbox"/> Other: _____</p>					

	When I listen to spoken English I ...	1	2	3	4	5		Because I ...
--	---------------------------------------	----------	----------	----------	----------	----------	--	----------------------

	1=Never,2=Seldom,3=Sometimes, 4=Often, 5=Always	Tick one box in each row					Tick as many boxes as apply for each statement
2	have difficulty in identifying which words the speaker emphasize						<input type="checkbox"/> don't know the rules of sentence stress in English <input type="checkbox"/> don't know how the pronunciation of words changes in connected speech (e.g. linking, weak forms, assimilation) <input type="checkbox"/> don't have a large enough 'listening' vocabulary <input type="checkbox"/> am not familiar with different accents of English <input type="checkbox"/> Don't know <input type="checkbox"/> Other: _____
3	have difficulty in holding a chunk of speech or meaning in my memory						<input type="checkbox"/> don't have a good short-term memory for English <input type="checkbox"/> can't distinguish between sounds that don't exist in Chinese and similar sounds (e.g. /θ/-/f/-/s/; /ʃ/-/s/; /ð/-/d/; /s/; /v/-/w/; /l/-/n/-/r/; /e/- /æ/-/eɪ/; etc.) <input type="checkbox"/> can't concentrate when listening to English <input type="checkbox"/> feel nervous when listening to English <input type="checkbox"/> can't identify where the chunk starts and finishes <input type="checkbox"/> am not familiar with English phrases <input type="checkbox"/> Don't know <input type="checkbox"/> Other: _____ _____

When I listen to spoken English I ...		1	2	3	4	5	Because I ...	
		Tick one box in each row					Tick as many boxes as apply for each statement	
4	have difficulty in catching the ends of words (-s, -ed etc)						<input type="checkbox"/> can't identify the sounds that don't exist in Chinese <input type="checkbox"/> don't know enough grammar <input type="checkbox"/> can't concentrate when listening to English <input type="checkbox"/> don't know how the pronunciation of words changes in connected speech (e.g. linking, weak forms, assimilation) <input type="checkbox"/> Don't know <input type="checkbox"/> Other: _____	
	have difficulty in recognising words, even though I know them in written form						<input type="checkbox"/> can't identify the sounds that don't exist in Chinese <input type="checkbox"/> don't have a large enough 'listening' vocabulary <input type="checkbox"/> don't know how the words should be pronounced correctly <input type="checkbox"/> don't know how the pronunciation of words changes in connected speech (e.g. linking, weak forms, assimilation) <input type="checkbox"/> am not familiar with different accents of English <input type="checkbox"/> Don't know <input type="checkbox"/> Other: _____	

When I listen to spoken English I ...		1	2	3	4	5	Because I ...	
		Tick one box in each row						
6	have difficulty in recognising phrases (e.g. catch up with)						<input type="checkbox"/> don't have a large enough vocabulary <input type="checkbox"/> don't know how the phrases should be pronounced correctly <input type="checkbox"/> can't identify the sounds that don't exist in Chinese <input type="checkbox"/> don't know how the pronunciation of words changes in connected speech (e.g. linking, weak forms, assimilation) <input type="checkbox"/> don't have a large enough 'listening' vocabulary <input type="checkbox"/> don't have a good short-term memory for English <input type="checkbox"/> Don't know <input type="checkbox"/> Other: _____	

When I listen to spoken English I 1=Never,2=Seldom,3=Sometimes, 4=Often, 5=Always		1	2	3	4	5	Because I ...
		Tick one box in each row					
7	have difficulty in identifying the sounds of the words correctly						Tick as many boxes as apply for each statement <input type="checkbox"/> don't know how the pronunciation of words changes in connected speech (e.g. linking, weak forms, assimilation) <input type="checkbox"/> can't identify the sounds that don't exist in Chinese <input type="checkbox"/> am not familiar with different accents of English <input type="checkbox"/> don't have a large enough 'listening' vocabulary <input type="checkbox"/> don't know how the words should be pronounced correctly <input type="checkbox"/> Don't know <input type="checkbox"/> other _____
8	have difficulty in catching the next bit of speech, because I'm still concentrating on what was just said						<input type="checkbox"/> spend a long time trying to identify unfamiliar words or phrases <input type="checkbox"/> don't have a large enough 'listening' vocabulary <input type="checkbox"/> feel nervous when listening to English <input type="checkbox"/> translate from English to Chinese when listening <input type="checkbox"/> don't have enough background knowledge <input type="checkbox"/> don't have a good short-term memory for English <input type="checkbox"/> Don't know <input type="checkbox"/> Other: _____
When I listen to spoken English I		1	2	3	4	5	Because I ...

	...	Tick one box in each row					Tick as many boxes as apply for each statement	
1=Never,2=Seldom,3=Sometimes, 4 = Often, 5 = Always								
9	having difficulty in making sense of the grammar						<input type="checkbox"/> am not familiar with English phrases <input type="checkbox"/> don't know enough grammar <input type="checkbox"/> can't concentrate when listening to English <input type="checkbox"/> don't have a good short-term memory for English <input type="checkbox"/> Don't know <input type="checkbox"/> Other: _____	

Appendix C: Findings of LP of students' retrospective self-report at the beginning of semester

Rank	Quotation from the Answers to open-ended Question 1: Listening Problems	Coding Theme	Frequency	%
1	<p>S1: Lack of listening vocabulary</p> <p>S2: I am not familiar with the listening vocabulary and fixed phrases.</p> <p>S3: lack of enough listening vocabulary</p> <p>S6: I am lack of enough listening vocabulary and I am often confused because of the words of similar pronunciation.</p> <p>S10: My poor listening vocabulary is my biggest problem.</p> <p>S14: I cannot write those words I am very familiar with, so I have difficulties in listening vocabulary</p> <p>S15: Lack enough listening vocabulary and having difficulties in differentiating words of similar pronunciations.</p>	Lack of listening vocabulary	39	92.9
2	<p>S2: When I listen for the first time, I can get the main idea but not very clear about the details, which causes the difficulties</p> <p>S4: I have problem in the size of vocabulary</p> <p>S8: Lack of the knowledge of vocabulary and pronunciation, cannot differentiate linking words and words with similar pronunciation.</p> <p>S9: I cannot catch the whole meaning of sentence because of failure to get one or two words.</p> <p>S11: Not familiar with some new words</p> <p>S12: I cannot catch some words or phrases as I am not familiar with those words, which makes me easily misunderstand the other words or phrases.</p> <p>S17: I have Difficulty in catching the key words and then difficult to understand the whole sentence</p>	Lack of vocabulary	34	80.0
3	<p>S8: Lack of the knowledge of vocabulary and pronunciation, I cannot differentiate linking words and words with similar pronunciation</p> <p>S32: I cannot catch the meaning because of my poor pronunciation</p>	Have difficulty with recognising individual words	28	66.7

	<p>S10: Lack of phonological knowledge, and especially no ability to differentiate those linking words.</p> <p>S11: Lack of phonological knowledge: I often catch the wrong meaning or misunderstand the sentence because I am not very clear about the rules of linking or weak forms.</p> <p>S12: I cannot catch some words or phrases as I am not familiar with those words or linking words, which makes me easily misunderstand the other words or phrases.</p> <p>S13: I cannot pronounce some words rightly</p> <p>S14: I have difficulties in understanding the sentences, as I cannot differentiate linking words in phrases or sentences.</p> <p>S19: I cannot finish the whole dictation because I fail to differentiate the linking words.</p> <p>S28: I cannot understand because of linking words</p> <p>S8: Lacking in the knowledge of vocabulary and pronunciation, I cannot differentiate linking words and words with similar</p> <p>S9: My wrong pronunciation of some word leads to my poor understanding of the sentence.</p> <p>S11: I often catch the wrong meaning or misunderstand the sentence because I am not very clear rules of linking or weak forms.</p> <p>S15: Lack enough listening vocabulary and having difficulties in differentiating words of similar pronunciations.</p> <p>S20: I find some combination of phrases or special word difficult to catch such as the words ‘of’ ‘the’ & ‘their’, I am often confused them.</p>	in a CS		
4	<p>S5: I know it will be better to write the whole sentence after I listen to it, but I often forget it soon and remember only a few words</p> <p>S8: Poor memory</p> <p>S16: Poor short-term memory</p> <p>S17: Slow response, sometimes cannot remember some vocabulary soon</p> <p>S25: I cannot respond quickly enough to catch the meaning, I have to take longer time to digest and translate what I hear into my language in my mind</p>	Quickly forget what is heard	22	52.4
5	<p>S6: I Often remember only the first part of sentence but miss the next part because of poor memory and less practice, and sometimes I can only remember one or two words.</p> <p>S8: For the long sentence, I often catch the first part but miss the last part, thus unable to get the main idea of the sentence.</p> <p>S10: I often catch the first part but miss the following part.</p> <p>S14: When I meet some new words, I would stop to think over the meaning and miss the</p>	Focus on the first part, but miss the following part	21	50

	following parts.			
6	S6: Due to the speaking is so fast that I cannot catch it as I seldom practice my listening in my spare time. S8: The speakers speak too fast for me to keep pace with them S13: The speed of reading is too fast. S15: The speed is too fast.	Fast speed of speaker	20	47.6
7	S1: Sometimes I can understand the meaning of the words, but I don't know how to write them. S8: I can catch the meaning of some vocabulary but cannot write them down. S11: I Can catch some key words but cannot write them down. S23: I can catch the meaning of some words, but cannot write them down.	Spelling problems	19	45.2
8	S19: When I listen to the words, I cannot find their corresponding Chinese translations to match them.	Reliance on L1	10	23.8
9	S18: I cannot concentrate on listening S33: Because I cannot concentrate on the listening, I miss much information.	Unable to concentrate	7	16.7
10	S1: Lack of enough background knowledge , poor ability of prediction S14: Lack of background knowledge	Lack of background knowledge	5	11.9

S1=Student1

Appendix D: Students' Reflection on their causes for LP at the beginning of the semester

Rank	Quotation on the Answers of open-ended Question 2: The Causes of Listening problems	Coding Theme	Frequency	%
1	<p>S3: Not spending much time in practicing, led to some mistakes in grammar and spelling mistakes.</p> <p>S6: Less practice in my spare time</p> <p>S7: Lack of more practice in my spare time</p> <p>S8: Lack of more practice. Although the teacher had put listening exercises into the virtual classroom, I just downloaded them and spent little time on it.</p> <p>S12: Seldom practice in listening</p> <p>S16: Seldom practiced in my oral skills in my spare time</p> <p>S21: Spent much time in writing and reading, while ignoring practice of listening-- Lack of practice in listening</p> <p>S25: I am lazy</p>	Less practice out of class	40	90.9
2	<p>S2: Lack of enough listening vocabulary</p> <p>S4: Lack of frequent listening vocabulary</p> <p>S10: Less enough listening vocabulary</p> <p>S11: Not familiar with the usage of some known words</p> <p>S18: Lacking enough vocabulary causes my limited understanding of the whole passage.</p>	Lack of listening vocabulary	36	81.8
3	<p>S1: Cannot pronounce words correctly</p> <p>S17: No good sense of rhythm</p> <p>S20: Not skilled in marking the rhythm</p> <p>S23: Lack of good sense of rhythm</p> <p>S28: Not familiar with linked words</p> <p>S30: Cannot recognise some words with linking. My pronunciation is poor and I have not enough confidence and determine to learn it well.</p> <p>S35: Cannot mark the pause in the sentences to understand.</p> <p>S36: The pronunciation of listening vocabulary is quite different from mine, so I cannot catch the meaning.</p> <p>S39: Lack of phonological knowledge.</p> <p>S41: Having not mastered the pronunciation of vocabulary in linking causes break-down in catching main ideas.</p>	Pronunciation	28	63.6

	S42: Not very familiar with some phrases of linking as it was my first time to be exposed to linking. S44: Linking problems and lateral nasal sound.			
4	S1: When I listen to a sentence, sometimes I concentrate on those unfamiliar words, which leads to missing the rest of them. S34: As for the long sentence, if listening carefully and there are no new words, then I have no difficulties in understanding it without new words. But if there are new words, I would focus on them and miss the following part, while being unable to write them down. S14: The lack of enough listening vocabulary hindered me from writing down many words because of spending not much time on remembering vocabulary. S22: I am unable to concentrate on my listening when I focus on some unfamiliar words, and then miss the following part. S28: Most of the time if I cannot catch one or two words, all my LC will be affected. S29: If I cannot recognize one or two words in the middle of a CS, then I have no interests in finishing listening, especially when the speaker speaks faster.	To guess one or two words, resulting in missing the following part	27	61.4
5	S5: Poor short memory S8: Easily forget the vocabulary having been heard.	Poor Memory	18	4 40.9
6	S3: Met some new words or words I could not spell. S6: I knew some words, yet could not spell them well. S7: I think the size of vocabulary is the big problem as in most of the time I can understand 70% passage or sentences, but it is very difficult to write them down. In addition, I was stuck in spelling, I could not write down many sentences. S10: There are quite a number of words I am familiar with when I read, but I could not catch the linking, as I could not confirm the correct pronunciation. Knowing the meaning but could not spell them right.	New words & spelling	15	34.1
7	S11: Have not taken listening seriously S20: Often cannot concentrate on listening S26: Have no confidence in my listening. S30: Cannot concentrate on listening S38: Seldom reading to remember vocabulary S40: Apt to be nervous when I cannot catch one word or sentence.	Non-intelligence factors	12	27.3

8	<p>S12: There is no English language environment. S15: No chances to get familiar with various accents around the world.</p> <p>S21: I am not used to transferring the meaning from English into Chinese quickly in my mind when I listen to English. Therefore, I often have a blank mind. I think it was the lack atmosphere of English speaking in our daily life that caused this situation. Even if we practice oral skills in our daily life, we still lack actual experience of talking to the native speakers. I think this is the most important reason for listening difficulties.</p>	Lack of Learning environment	10	22.7
9	<p>S35: Ignoring some details of grammar S44: Lack of grammar knowledge</p>	Grammar	4	9.1
10	S33: Lack of background knowledge	Context knowledge	2	4.5
11	S6: The speaker speaks too fast.	Speaker	1	2.3

Note:

S

=

Student

Appendix E: Pre-pilot Study

Version A

With thousands of people travelling every day //as a part of their jobs,// there is great concern// about the effect of jet lag on business travellers.// In the world of international business,// many men and women have trouble performing their jobs //because they feel tired and sick// from all their travelling.// Businesspeople are not the only professionals //who suffer from jet lag.// Professional sports players also find //that jet lag affects their performance.// In today's health report, //Jim Hernandez looks at the problem// of jet lag in professional baseball.// Baseball and jet lag, what's the connection, Jim?//

Well, Kate, this news may be of interest //to all of us, not just baseball fans. //You see, researchers have wondered about// how jet lag affects the job performance //of people who travel for a living.// The problem is that it is very difficult//to measure exactly how jet lag affects most travellers//---how can we measure the performance of, say,// an executive who travels to another country// to make a business deal? //This is where the idea// of looking at baseball comes in.// We can measure the performance of baseball players,// so by looking at // whether baseball teams win or lose games, // researchers believe that we can see// how jet lag affects performance// in sports, business, and other jobs.

Version B

With thousands of people travelling every day //as a part of their jobs,// there is great concern about the effect of jet lag on business travellers. // In the world of international business,// many men and women have trouble performing their jobs //because they feel tired and sick from all their travelling. // Businesspeople are not the only professionals //who suffer from jet lag.// Professional sports players also find that jet lag affects their performance. // In today's health report, //Jim Hernandez looks at the problem of jet lag in professional baseball. // Baseball and jet lag, what's the connection, Jim?//

Well, Kate, this news may be of interest to //all of us, not just baseball fans. //You see, researchers have wondered about// how jet lag affects the job performance of people who travel for a living. // The problem is that it is very difficult to measure exactly // how jet lag affects most travellers//--- how can we measure the performance of, say,// an executive who travels to another country// to make a business deal? //This is where the idea of looking at baseball comes in. // We can measure the performance of baseball players,// so by looking at whether baseball teams win or lose games, // researchers believe //that we can see how jet lag affects performance // in sports, business, and other jobs.

Appendix F: What the scores mean

To be honest, this test is relatively new so we're still working out what phonological vocabulary size means within the big picture of a person's language learning. With the written version of this test (X-Lex) we know that the scores rise with increasing language knowledge overall and predict writing ability, reading comprehension, grammatical test scores and overall language level. Phonological scores (Aural-Lex), however, seem to plateau at around 3000 or 3500 at which point a learners have the lexis they need for general conversation and LC (though not, presumably, for highly technical or complex interactions of this kind). However I can explain what the list of scores saved in the file are. The file saves this:

jimbo

20 20 20 20 20 20 5000 0

jimbo is the name of the testee obviously.

The first 20 (or number) is the number of words out of the 20 from the 1 - 1000 word frequency band the testee identified.

The second 20 is the number of words out of the 20 from the 1001 - 2000 word frequency band the testee identified.

The third 20 is the number of words out of the 20 from the 2001 - 3000 word frequency band the testee identified.

The fourth 20 is the number of words out of the 20 from the 3001 - 4000 word frequency band the testee identified.

The fifth 20 is the number of words out of the 20 from the 4001 - 5000 word frequency band the testee identified.

The sixth 20 is the number of false words out of 20 the testee identified.

The 5000 (or other number) is the raw score (the number of hits x 50).

The final number, 0 in this case, is the adjusted score (raw score - (false alarms x 250))

Appendix G: Texts for dictation (Adapted from Northstar Textbooks)

BASIC

Unit 6, 3A, p. 169: Who's taking care of the children?

Good afternoon and welcome to the Julie Jones show. Today the topic is child care. Most people with young children work and need to use child care. In some families, a relative can take care of the children. But, in the United States, more than fifty percent of all families pay for child care – they hire someone to take care of the children. Some people take their children to a day-care center. Some people hire a sitter to take care of the children. And some families hire a nanny. A nanny usually lives with a family and takes care of the children in the family's home every day. Today, we have an unusual nanny to tell us about the job. Let's welcome our nanny ...

125 words, 53 word families BNC: 90% K1, 5% K2, 3% K4 (nanny)

INTERMEDIATE

Unit 4, Listening Two, p. 218: Useful insects

Most people don't like insects very much. But actually, some insects are very useful to people. Today, insects are being used in many surprising ways.

For example, insects are very useful in medicine. Believe it or not, maggots are now used regularly in hospitals. Doctors are using maggots to eat the dead skin around an injury. The doctors have found that maggots eat only the dead skin, so they make the injury very clean.

In the world of medicine and science, fireflies are also useful. Fireflies have a special chemical inside them that makes their bodies shine like fire at night. The chemicals can be removed from a firefly's body and used for medical tests. Scientists who do genetic engineering also use this chemical in their experiments.

127 words, 68 word families

BNC: 80% K1, 10% K2, 1% K3 (genetic, shine), 3% K5 (insects), 2% K7 (maggots), 2% K12 (fireflies)

HIGH INTERMEDIATE

Unit 1, 3B, p. 237: A new approach to the news

A lot of people are pretty fed up with the news. It's not the quality so much that bothers them, but the content. It's just all bad news, or so it sometimes seems. So they tune it all out. One person who couldn't take it any more went a step further. He founded his own newspaper, and publishes only good news.

Now I want you to think about this for a minute if you will. Think about the old saying "no news is good news". One way of interpreting that line is that real news is bad news. So if someone comes along with a newspaper that promises to deliver only good news, is that really news? And is that really a newspaper?

122 words, 69 word families

BNC: 92% K1, 7% K2, 1% K3 (founded)

Texts chunked for reading

BASIC

1. Good afternoon and welcome to the Julie Jones show.
2. Today the topic is child care.
3. Most people with young children work
4. and need to use child care.
5. In some families,
6. a relative can take care of the children.

7. But, in the United States,
8. more than fifty percent of all families pay for child care
9. they hire someone to take care of the children.
10. Some people take their children to a day-care center.
11. Some people hire a sitter to take care of the children.
12. And some families hire a nanny.
13. A nanny usually lives with a family
14. and takes care of the children
15. in the family's home every day.
16. Today, we have an unusual nanny
17. to tell us about the job.
18. Let's welcome our nanny ...

[18 chunks]

INTERMEDIATE

1. Most people don't like insects very much.
2. But actually, some insects are very useful to people.
3. Today, insects are being used in many surprising ways.
4. For example, insects are very useful in medicine.
5. Believe it or not,
6. maggots are now used regularly in hospitals.
7. Doctors are using maggots

8. to eat the dead skin around an injury.
9. The doctors have found that maggots eat only the dead skin,
10. so they make the injury very clean.
11. In the world of medicine and science,
12. fireflies are also useful.
13. Fireflies have a special chemical inside them
14. that makes their bodies shine like fire at night.
15. The chemicals can be removed from a firefly's body
16. and used for medical tests.
17. Scientists who do genetic engineering
18. also use this chemical in their experiments.

[18 chunks]

HIGH INTERMEDIATE

1. A lot of people are pretty fed up with the news.
2. It's not the quality so much that bothers them,
3. but the content.
4. It's just all bad news,
5. or so it sometimes seems.
6. So they tune it all out.
7. One person who couldn't take it anymore
8. went a step further.

9. He founded his own newspaper,
 10. and publishes only good news.
 11. Now I want you to think about this for a minute
 12. if you will.
 13. Think about the old saying
 14. “no news is good news”.
 15. One way of interpreting that line
 16. is that real news is bad news.
 17. So if someone comes along with a newspaper
 18. that promises to deliver only good news,
 19. is that really news?
 20. And is that really a newspaper?
- [20 chunks]

Appendix H: Dictation Survey

This questionnaire survey applies to the following 18 chunks.

Chunk 1: _____

Do you think you have written down this chunk accurately?

If **YES**, please move on to the next section.

If **NOT**, for the parts you are unsure about or missed, please tick the boxes below to indicate what you think is/are the cause(s) of the problem

In the section above, the reason for my problem was (tick any that apply):

1. Lack of vocabulary knowledge
- 2 Lack of listening vocabulary
- 3 Lack of background knowledge
- 4 Lack of pronunciation knowledge
- 5 Poor memory
6. I understand the meaning but cannot spell them out
7. Miss the following part as I focus on the unfamiliar or new word of the first part
8. Lack of grammatical knowledge
9. The problems of joining words
10. The speed of speaker is too fast
11. Cannot catch the word endings
12. Other (Please specify)

Appendix I: The results of Aural lexical test

The table below demonstrates the results of the phonological vocabulary test. There are clear differences between mean scores of adjusted scores among students, non-native English teachers and native speaker English teachers. The tendency took positive trend in terms of the distinct proficiency levels in English; therefore, the Aural-Lex test tool is valid.

The results of Aural lexical test

	Students (Mean value)	NNS Teachers (Mean value)	NS Teachers (Mean value)
N	69	4	3
1000 Frequent words	18.97	19.50	20.00
2000 Frequent words	17.14	19.70	20.00
3000 Frequent words	15.68	19.00	19.67
4000 Frequent words	12.78	17.50	19.67
5000 Frequent words	11.51	17.75	20.00
Error words	6.04	6.50	4.00
Raw score	3804.35	4675.00	4966.67
Adjusted score	2293.48	3050.00	3966.67

NNS = non-native speaker; NS = native speaker

Appendix J: Results of University Learners' Awareness of Listening Difficulties & Causes Survey: Section III

D1. have difficulty in breaking the stream of speech into separate words			
Often +always (N=43)	Frequency	Percent	Valid Percent
		25	58.1
Reasons (N =43)			
Yeah	Frequency	Percent	Valid Percent
Don't have a large enough vocabulary	36	83.7	83.7
Cannot concentrate when listening to English	12	27.9	27.9
Don't have enough listening vocabulary	35	81.4	81.4
The speaker's speed is too fast to catch	35	81.4	81.4
Don't know how the pronunciation of words changes in CS (e.g. linking, weak forms & assimilation)	35	81.4	81.4
Don't know the rules of sentence stress in English	18	41.9	41.9
Don't know how the pronunciation of words changes in CS (e.g. linking, weak forms & assimilation)	19	44.2	44.2
Cannot understand the words I just listen to	36	83.7	83.7
Practice little	33	76.7	76.7
D2. Have difficulty in identifying which words the speaker emphasises			
Often +always (N=43)	Frequency	Percent	Valid Percent
		14	32.5
Reasons (N =43)			
Yeah	Frequency	Percent	Valid Percent
Don't have a large enough vocabulary	27	62.8	62.8
Don't have enough listening vocabulary	29	67.4	67.4
Don't know how the pronunciation of words changes in CS (e.g. linking, weak forms & assimilation)	30	69.8	69.8
Don't know the rules of sentence stress in English	17	39.5	39.5
The speaker's speed is too fast to catch	26	60.5	60.5
am not familiar with different accents of English	29	67.4	67.4
D3. Have difficulty in holding a chunk of speech or meaning in my memory			
Often +always	Frequency	Percent	Valid Percent

	21	48.8	48.8
Reasons (N= 43)			
Yeah	Frequency	Percent	Valid Percent
Don't have a good short-term memory for English	27	62.8	62.8
Cannot concentrate when listening to English	19	44.2	44.2
Feel nervous when listening to English	15	34.9	34.9
Am not familiar with English phrases	23	53.5	53.5
Cannot identify where the chunk starts and finishes	20	46.5	46.5
can't distinguish between sounds that don't exist in Chinese and similar sounds	30	69.8	69.8
D4. Have difficulty in catching the ends of words (-s, -ed etc)			
Often +always	Frequency	Percent	Valid Percent
	30	69.8	69.8
Reasons			
Yeah	Frequency	Percent	Valid Percent
can't distinguish between sounds that don't exist in Chinese and similar sounds	36	83.7	83.7
Don't know enough grammar	20	46.5	46.5
don't know how the pronunciation of words changes in CS (e.g. linking, weak forms, assimilation)	32	74.4	74.4
Cannot concentrate when listening to English	15	34.9	34.9
Have not learned the knowledge of word endings	9	20.9	20.9
Have not realized the ends of words	21	48.8	48.8
D5. Have difficulty in recognising words, even though I know them when written down			
Often +always	Frequency	Percent	Valid Percent
	22	51.2	51.2
Reasons			
Yeah	Frequency	Percent	Valid Percent
Cannot identify the sounds that don't exist in Chinese	7	16.3	16.3
don't have a large enough listening' vocabulary	30	69.8	69.8
don't know how the pronunciation of words changes in CS (e.g. linking, weak forms, assimilation)	25	58.1	58.1

am not familiar with different accents of English	28	65.1	65.1
Have not focus on pronunciation	17	39.5	39.5
don't know how the words should be pronounced correctly	24	55.8	55.8
Cannot concentrate when listening to English	16	37.2	37.2
D6. have difficulty in recognising phrases (e.g. catch up with)			
Often +always	Frequency	Percent	Valid Percent
	11	25.6	25.6
Reasons			
Yeah	Frequency	Percent	Valid Percent
Don't have a large enough vocabulary	33	76.7	76.7
don't know how the pronunciation of words changes in CS (e.g. linking, weak forms, assimilation)	23	53.5	53.5
don't have a large enough 'listening' vocabulary	30	69.8	69.8
Cannot identify sounds that don't exist in Chinese	6	14.0	14.0
don't have a good short-term memory for English	21	48.8	48.8
Don't know how the phrases should be pronounced correctly	19	44.2	44.2
D7. Have difficulty in identifying the sounds of the words correctly			
Often +always	Frequency	Percent	Valid Percent
	17	39.6	39.6
Reasons			
Yeah	Frequency	Percent	Valid Percent
Cannot identify the sound that don't exist in Chinese	6	14.0	14.0
Don't know how the pronunciation of words changes in CS (e.g. linking, weak forms & assimilation)	26	60.5	60.5
Don't have enough listening vocabulary	31	72.1	72.1
Am not familiar with different accents of English	27	62.8	62.8
Don't know how the words should be pronounced correctly	28	65.1	65.1
Cannot pronounce words correctly	14	32.6	32.6
Practice little	29	67.4	67.4
D8. have difficulty in catching the next bit of speech, because I'm still concentrating on what was just said			
Often +always	Frequency	Percent	Valid Percent
	31	72.1	72.1

Reasons			
Yeah	Frequency	Percent	Valid Percent
don't have a good short-term memory for English	23	53.5	53.5
don't have a large enough 'listening' vocabulary	25	58.1	58.1
feel nervous when listening to English	13	30.2	30.2
translate from English to Chinese when listening	35	81.4	81.4
spend a long time trying to identify unfamiliar words or phrases	29	67.4	67.4
don't have enough background knowledge	27	62.8	62.8
Cannot concentrate when listening to English	10	23.3	23.3
D9. Having difficulty in understanding the vocabulary in the passage			
Often +always	Frequency	Percent	Valid Percent
	20	46.5	46.5
Reasons			
Yeah	Frequency	Percent	Valid Percent
don't have a large enough vocabulary	35	81.4	81.4
don't have a large enough 'listening' vocabulary	32	74.4	74.4
Don't know the other meanings of the same words	31	72.1	72.1
Don't have enough background knowledge	31	72.1	72.1
don't have enough background knowledge	26	60.5	60.5
Don't know how the words should be pronounced correctly	14	32.6	32.6
Don't know how the pronunciation of words changes in CS (e.g. linking, weak forms, assimilation)	18	41.9	41.9
Cannot distinguish between sounds that don't exist in Chinese and similar sounds	14	32.6	32.6
Am not familiar with English phrases	18	41.9	41.9
D10. have difficulty in making sense of the grammar			
Often +always	Frequency	Percent	Valid Percent
	15	34.9	34.9
Reasons			

Yeah	Frequency	Percent	Valid Percent
Don't know enough grammar	31	72.1	72.1
don't have a good short-term memory for English	24	55.8	55.8
Cannot concentrate when listening to English	13	30.2	30.2
am not familiar with English phrases	24	55.8	55.8
The speaker's speed is too fast to catch	29	67.4	67.4

Appendix K: Students' Reflection on their causes for LP at the beginning of the semester

Rank	Quotation on the Answers of open-ended Question 2: The Causes of Listening problems	Coding Theme	Frequency	%
1	<p>S3: Not spending much time in practicing, led to some mistakes in grammar and spelling mistakes.</p> <p>S6: Less practice in my spare time</p> <p>S7: Lack of more practice in my spare time</p> <p>S8: Lack of more practice. Although the teacher had put listening exercises into the virtual classroom, I just downloaded them and spent little time on it.</p> <p>S12: Seldom practice in listening</p> <p>S16: Seldom practiced in my oral skills in my spare time</p> <p>S21: Spent much time in writing and reading, while ignoring practice of listening-- Lack of practice in listening</p> <p style="text-align: right;">S25: I am lazy</p>	Less practice out of class	40	90.9
2	<p>S2: Lack of enough listening vocabulary</p> <p>S4: Lack of frequent listening vocabulary</p> <p>S10: Less enough listening vocabulary</p> <p>S11: Not familiar with the usage of some known words</p> <p>S18: Lacking enough vocabulary causes my limited understanding of the whole passage.</p>	Lack of listening vocabulary	36	81.8
3	<p>S1: Cannot pronounce words correctly</p> <p>S17: No good sense of rhythm</p> <p>S20: Not skilled in marking the rhythm</p> <p>S23: Lack of good sense of rhythm</p> <p>S28: Not familiar with linked words</p> <p>S30: Cannot recognise some words with linking. My pronunciation is poor and I have not enough confidence and determine to learn it well.</p> <p>S35: Cannot mark the pause in the sentences to understand.</p> <p>S36: The pronunciation of listening vocabulary is quite different from mine, so I cannot catch the meaning.</p>	Pronunciation	28	63.6

	<p>S39: Lack of phonological knowledge.</p> <p>S41: Having not mastered the pronunciation of vocabulary in linking causes break-down in catching main ideas.</p> <p>S42: Not very familiar with some phrases of linking as it was my first time to be exposed to linking.</p> <p>S44: Linking problems and lateral nasal sound.</p>			
4	<p>S1: When I listen to a sentence, sometimes I concentrate on those unfamiliar words, which leads to missing the rest of them.</p> <p>S34: As for the long sentence, if listening carefully and there are no new words, then I have no difficulties in understanding it without new words. But if there are new words, I would focus on them and miss the following part, while being unable to write them down.</p> <p>S14: The lack of enough listening vocabulary hindered me from writing down many words because of spending not much time on remembering vocabulary.</p> <p>S22: I am unable to concentrate on my listening when I focus on some unfamiliar words, and then miss the following part.</p> <p>S28: Most of the time if I cannot catch one or two words, all my LC will be affected.</p> <p>S29: If I cannot recognize one or two words in the middle of a CS, then I have no interests in finishing listening, especially when the speaker speaks faster.</p>	To guess one or two words, resulting in missing the following part	27	61.4
5	<p>S5: Poor short memory</p> <p>S8: Easily forget the vocabulary having been heard.</p>	Poor Memory	18	4 40.9
6	<p>S3: Met some new words or words I could not spell.</p> <p>S6: I knew some words, yet could not spell them well.</p> <p>S7: I think the size of vocabulary is the big problem as in most of the time I can understand 70% passage or sentences, but it is very difficult to write them down. In addition, I was stuck in spelling, I could not write down many sentences.</p> <p>S10: There are quite a number of words I am familiar with when I read, but I could not catch the linking, as I could not confirm the correct pronunciation. Knowing the meaning but could not spell them right.</p>	New words & spelling	15	34.1

Appendix L: Reflection Questionnaire at the bend of the semester

Part 1: The following are the five ratings of your probable assessments on LC improvements. For each of the statements below, tick one box to indicate to what extent your English listening has been improved after one-semester learning.

5=Have improved a lot; 4=have moderately improved; 3= undecided;

2=have hardly improved; 1=have not improved at all

		5	4	3	2	1
		Tick one box in each row				
1	In the linking of Final consonant + vowel such as “stand up”, “post office”, and “pick it up”.					
2	In the linking of Vowel + Vowel such as “she is,” “the answer,” “go out”, and “try it.”					
3	In the linking of r such as “after all,” “for ever,” and “far away.”					
4	In the linking of Final consonant + same/identical consonant such as “good dealer,” “this seat” and “felt tired.”					
5	In the linking of Final consonant +different consonant such as “next step,” “best place” and “worst night.”					
6	In the recognition of Past Tense Ending with “-ed” such as “visited,” “loved,” and “liked.”					
7	In the recognition of “S” endings: plurals, present tense, and possessives such as “bosses,” “walks” and “Joe’s.”					

8	In the recognition of thought group such as “in the park,” “tell a story,” “that was listening,” “give it to him” and “the man answered.”					
9	In the recognition of syllables and spellings such as “Per-mitted,” “main-tain,” “ne-go-ti-ate.”					
10	In the recognition of word stressed patterns such as “PhoTOgraphy,” “eVACuated,” “autobioGRAphical.”					
11	In the recognition of the same word with different pronunciations and parts of speech, Two-word verbs & Compound Nouns such as CONvert (verb) & conVert (noun); CHECKout (Noun)& checkOUT(verb); SURvey (noun)& surVEY (verb).					
12	In the recognition of sentence stresses, for example, There <u>was</u> a young <u>lady</u> of <u>Niger</u> , Who <u>smiled</u> as she <u>rode</u> on a <u>tiger</u> .					
13	In the recognition of Word Stress with Suffixes –er & -ing such as “easier,” “better,” “greeting” and “capacity.”					
14	In the recognition of reduced forms such as “Have to = hafta,” “Want to = wanna,” “Going to = gonna,” “Has to = hasta,” “Got to = gotta,” and “A lot of = a lota”					

Part II Open-ended Questions: Please answer the following questions:

1. You might still have difficulties in LC though you have received one-semester instruction on it. Please voice the difficulties you have in detail.

2. The Reasons for your LC difficulties are

3. Which aspects of LC do you think you will particularly strengthen and improve in future?

4. What kinds of listening methods and listening exercises do you feel will

be both helpful and interesting?

Appendix M: Coding of the Students' reflection on their LC at the end of the semester

Quotation on the Answers of open-ended Question 1: Listening Problems	Coding Theme
<p>S3: Sometimes I often meet very familiar words but cannot catch the meaning.</p> <p>S4: Although I can hear the words very clearly, I cannot write them down, as I don't understand their meanings. This affects my understanding of the whole sentence and even the whole passage.</p> <p>S7: Lack of listening vocabulary. Sometimes cannot catch my known words.</p> <p>S8: I cannot catch some known words in listening. I think it should be closely related to the extent of familiarity and practice in daily life.</p> <p>S9: I cannot master the known words well enough to get the meaning and also write them down rightly.</p> <p>S13: Lack of listening vocabulary. Sometimes I can understand the meaning but cannot write them down. Also sometimes I cannot write those words I know in reading.</p> <p>S17: When I take a dictation, I often feel confused and nervous in the long sentences of unknown words. I have no idea to deal with them. Because of long sentence, I have not good short-term memory, and unknown listening vocabulary will add to my listening difficulties. Some words I know but cannot spell right</p> <p>S18: Lack of listening vocabulary. Sometimes I am familiar with the word, but cannot catch the meaning.</p>	<p>30 Lack of Listening vocabulary</p>

<p>S19: Some words are very familiar in written form, but cannot catch them in listening.</p> <p>S20: Some new words influence the whole sentence understanding.</p> <p>S22: Sometimes I cannot catch enough vocabulary in one sentence, so I have difficulty in understanding the whole sentence.</p> <p>S23: During those dictations, I can catch the main idea but cannot write some words because of lack of listening vocabulary and phonological knowledge.</p> <p>S24: Lack of listening vocabulary. Sometimes I am familiar with the word, but cannot catch the meaning.</p> <p>S25: Lack of listening vocabulary. I often forget those very familiar words.</p> <p>S26: Lack of listening vocabulary. I cannot identify the known words in reading.</p> <p>S28: For me, who has a poor English, the speed of the English speaker is too quick. I always cannot get the details from the talking or article. Sometimes I even don't know the main idea. And the lack of my English knowledge and vocabulary are the important reason. In fact, I never try to practice and improve my listening or speaking. I love English and of course I think it is very useful and important.</p>	
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<p>S2: In listening, if I meet some new words or words I cannot spell well, I will concentrate on those words and ignore the following part, and then I cannot have enough time and energy to write those words or sentences I am very familiar with.</p> <p>S3: Sometimes I can understand the words but cannot spell them out.</p> <p>S13: Lack of listening vocabulary. Sometimes I can understand the meaning but cannot write them down. Also sometimes I cannot write those words I know in reading.</p> <p>S14: I can catch the meaning of known words but cannot write them down.</p> <p>S17: When I take a dictation, I often feel confused and nervous in the long sentences of unknown words. I have no idea to deal with them. Because of long sentence, I have not good short-term memory, and unknown listening vocabulary will add to my listening difficulties. Some words I know but cannot spell right</p> <p>S18: I cannot write down my familiar words such as day-care</p> <p>S19: I understand what I heard but it is difficult to write them down.</p> <p>S26: I have difficulty in vocabulary with linking. I can recognise very simple one but cannot catch the others in most time. I can catch the meaning of words but cannot spell them.</p>	<p>15 Inadequate spelling ability</p>
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<p>S1: I easily miss the words in some long sentences when I take dictation. For example, I often cannot recognize the –ed endings, so I often cannot recognize the linking, especially when the speakers speak so fast. I have poor memory as I often focus on those unfamiliar words, and then miss the other key words.</p> <p>S4: When I listen to a sentence, I often catch the stressed words but not clear about those unstressed words. Sometimes I cannot recite the sentence I just heard (poor memory). Sometimes I was often entangled with those seemingly familiar but unfamiliar words, which leads me to miss the following part. Most of the time I feel the speakers speak so fast that I cannot respond them soon.</p> <p>S5: My short-term memory is too poor. I can write the first part but miss the following part.</p> <p>S6: Poor memory for long sentence</p> <p>S17: When I take a dictation, I often feel confused and nervous in the long sentences of unknown words. I have no idea to deal with them. Because of long sentence, I have not good short-term memory, and unknown listening vocabulary will add to my listening difficulties. Some words I know but cannot spell right.</p> <p>S34: Poor memory as I remember the first part but miss the following part.</p> <p>S17: When I take a dictation, I often feel confused and nervous in the long sentences of unknown words. I have no idea to deal with them. Because of long sentence, I have not good short-term memory, and unknown listening vocabulary will increase my listening difficulties. Some words I know but cannot spell right.</p>	<p>13 Poor memory or inadequate ability to integrate words into proper and logical message</p>
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<p>S1: I easily miss the words in some long sentences when I take dictation. For example, I often cannot recognize the –ed endings, so I often cannot recognize the linking, especially when the speakers speak so fast. I have poor memory as I often focus on those unfamiliar words, and then miss the other key words.</p> <p>S4: When I listen to a sentence, I often catch the stressed words but not clear about those unstressed words. Sometimes I cannot recite the sentence I just heard (poor memory). Sometimes I was often entangled with those seemingly familiar but unfamiliar words, which leads me to miss the following part. Most of the time I feel the speakers speak so fast that I cannot respond them soon.</p> <p>S26: Sometimes I cannot catch the speed of speakers.</p> <p>S28: For me, who has a poor English, the speed of the English speaker is too quick. I always cannot get the details from the talking or article. Sometimes I even don't know the main idea. And the lack of my English knowledge and vocabulary are the important reason. In fact, I never try to practice and improve my listening or speaking. I love English and of course I think it is very useful and important.</p> <p>S29:It might be the speaker's speed that makes me difficult in listening. It is easier for me to take a dictation sentence by sentence but if all the sentences are into CS, I would not catch them well. I often focus on the first part but miss the following part.</p> <p>S32: I often cannot catch the meaning esp when the speed is too fast and sentences contain some linking.</p>	<p>6 The speaker's fast speaking speed</p>
<p>S1: I easily miss the words in some long sentences when I take dictation. For example, I often cannot recognize the –ed endings, so I often cannot recognize the linking, especially when the speakers speak so fast. I have poor memory as I often focus on those unfamiliar words, and then miss the other key words.</p> <p>S2: In listening, if I meet <u>some new words or words I cannot spell well</u>, I will concentrate on those words and ignore the following part, and then I cannot have enough time and energy to write those words or sentences I am very familiar with.</p>	<p>18 Focus on the first part, but miss the following part</p>

S4: When I listen to a sentence, I often catch the stressed words but not clear about those unstressed words. Sometimes I cannot recite the sentence I just heard (poor memory). Sometimes I was often **entangled with those seemingly familiar but unfamiliar words, which leads me to miss the following part.** Most of the time I feel the speakers speak so fast that I cannot respond them soon.

S5: My attention **focuses on unfamiliar words and thus I often miss the following part.** I often feel confused when I listen to the long sentences.

S12: Sometimes my listening skills are good and sometimes poor because I have not received systematic process of learning phonology in my middle school, esp IPA. In my experiences, I learned IPA from learning reading individual word, and then infer the pronunciation of letters. So I have not solid foundation of phonology. In one sentence, **I try to remember the first part but miss the following part.**

S20: Sometimes even if I listen to the passage sentence by sentence, I would **focus on the first part of the sentence but miss the following part,** so I cannot write down the whole sentences completely.

S15: I often remember the first part of sentence but forget the following parts.

S16: I feel slow in response to the listening materials. After one sentence, **I need more time to understand that sentence, which leads to missing the following part.**

S17: When I pause to think over or guess the meaning of unfamiliar words or look back the IPA of the word during the process of listening, **I often miss the following parts.**

S29: It might be the speaker's speed that makes me difficult in listening. It is easier for me to take a dictation sentence by sentence but if all the sentences are into CS, I would not catch them well. I **often focus on the first part but miss the following part.**

S30: Sometimes even if I listen to the passage sentence by sentence, **I would focus on the first part of the sentence but miss the following part,** so I cannot write down the whole sentences completely.

<p>S33: When I meet some unfamiliar words, I always stop to think over it's meaning, then miss the following part.</p>	
<p>S1: I easily miss the words in some long sentences when I take dictation. For example, I often cannot recognize the –ed endings, so I often cannot recognize the linking, especially when the speakers speak so fast. I have poor memory as I often focus on those unfamiliar words, and then miss the other key words.</p> <p>S9: I cannot catch the words of sentences very well as my pronunciation is too poor.</p> <p>S11: Lack of the phonological knowledge. I cannot catch the linking words.</p> <p>S12: Sometimes my listening skills are good and sometimes poor because I have not received systematic process of learning phonology in my middle school, esp IPA. In my experiences, I learned IPA from learning reading individual word, and then infer the pronunciation of letters. So I have not solid foundation of phonology. In one sentence, I try to remember the first part but miss the following part.</p> <p>S20: I often cannot respond spontaneously to some frequently used and very familiar words because I am not very familiar with the pronunciation of those words, as a result, I cannot write them down like “hire”.</p> <p>S21: Have difficulty in recognizing ending sounds, especially –ed & -ing</p> <p>S22: Difficulty in recognizing phrases in the linking of sentences</p> <p>S23: I am not clear about the linking words, which makes me misunderstand the new words.</p> <p>S23: During those dictations, I can catch the main idea but cannot write some words because of lack of listening vocabulary and phonological knowledge.</p>	<p>13 Poor recognition of linking or weak form</p>

<p>S26: I have difficulty in vocabulary with linking. I can recognise very simple one but cannot catch the others in most time. I can catch the meaning of words but cannot spell them.</p> <p>S27: I cannot catch the place where the linking is located because of lack of long-term listening practice.</p> <p>S29: Poor distinguish between linking words.</p> <p>S31: My pronunciation influences my listening</p> <p>S32: I often cannot catch the meaning esp when the speed is too fast and sentences contain some linking.</p>	
<p>S10: I cannot differentiate from articles such as “a” & “the”.</p> <p>S18: I made mistakes in dictation as I mismatch target words into similar words in sounds.</p> <p>S 40: I often misspelled the target words into my familiar words.</p>	<p>14 Mismatch between the speakers’ and the listeners’ incorrect pronunciation</p>
<p>S12: Lack of grammar knowledge</p> <p>S13: Poor grammar knowledge.</p>	<p>4 Lack of grammar knowledge</p>
<p>S17: When I take a dictation, I often feel confused and nervous in the long sentences of unknown words. I have no idea to deal with them. Because of long sentence, I have not good short-term memory, and unknown listening vocabulary will increase my listening difficulties. Some words I know but cannot spell right.</p>	<p>3Language anxiety</p>
<p>S35: Sometimes lack of background knowledge. Such as “nanny”.</p>	<p>4 Lack of background knowledge</p>

Appendix N: Coding for the reasons for existed listening problems

	The Types of Reasons
<p>S1. <u>Not spending much time in practicing</u>, led to some mistakes in grammar and spelling mistakes.</p> <p>S4. <u>Less practice in my spare time</u></p> <p>S5. <u>Lack of more practice in my spare time</u></p> <p>S11. <u>Lack of more practice</u>. Although the teacher had put listening exercises into the virtual classroom, I just downloaded them and spent little time on it.</p> <p>S14. <u>Seldom practice in listening</u></p> <p>S19. <u>Seldom practiced in my oral skills in my spare time</u></p> <p>S27. Spent much time in writing and reading, <u>while ignoring practice of listening-- Lack of practice in listening</u></p> <p>S31. Be lazy</p> <p>S36. Cannot catch the place where the linking is located because <u>of lack of long-term listening practice</u>.</p>	<p>Less practice out of class (40)</p>
<p>S4. Lack of enough listening vocabulary</p> <p>S5. The lack of enough listening vocabulary hindered me from writing down many words because of spending not much time on remembering vocabulary.</p>	<p>Lack of listening vocabulary (36)</p>

<p>S15. Lack of frequent listening vocabulary</p> <p>S24. Less enough listening vocabulary</p> <p>S29. <u>Not familiar with the usage of some known words</u></p> <p>S30. <u>Lacking enough listening vocabulary</u> causes my limited understanding of the whole passage.</p> <p>S32. My command of listening to English is poor and lack of phonological knowledge and <u>listening vocabulary</u>.</p> <p>S36. Lack of listening vocabulary, so cannot write the words like “maggot & genetic”</p> <p><u>S38. Limited listening vocabulary</u> makes me not write them down.</p> <p>S41. All in all, it is the size of listening vocabulary that influences my listening as the sentence is made up of words. Since I cannot catch the vocabulary, how can I get the whole sentence?</p>	
<p>S2. <u>Cannot pronounce words correctly</u></p> <p>S3. <u>No good sense of rhythm</u>.</p> <p>S5. Not very familiar with the <u>pronunciation of known words</u>.</p> <p>S6. Not skilled in marking <u>the rhythm</u>.</p> <p>S11. Lack of good <u>sense of rhythm</u>. 18</p>	<p>Lack of phonological knowledge (28)</p>

S12. Not familiar with linked words.

S15. Cannot mark the pause in the sentences to understand.

S19. Sometimes I take it for granted with my familiar words. For example No 13, it should be “with a family’ but I thought it as “with families”.

S20. Cannot catch the linking words such as “in the world of science and medicine”, “world of “cannot catch the linking word.

S21. The pronunciation of listening vocabulary is quite different from mine, so I cannot catch the meaning.

S22. Lack of phonological knowledge.

S23. My pronunciation is not very standard

S25. Having not mastered the pronunciation of vocabulary in linking causes break-down in catching main ideas.

S27. Not very familiar with some phrases of linking as it was my first time to be exposed to linking.

S28. Some of weak form, I cannot catch it such as “a relative”, I thought it “a lot of” never think it as “relative”.

S29. Linking problems and lateral nasal sound.

S31. Cannot recognise some words with linking.

S32. My pronunciation is poor and I have not enough confidence and determine to learn it well.

S34. I am not used to the linking words

S35. Not familiar with the pronunciation of my known words.

<p>S37. Sometimes cannot catch linking words well</p> <p>S39. My command of listening to English is poor and lack of <u>phonological knowledge</u> and listening vocabulary.</p> <p>S40. Lack of knowledge of linking words</p> <p>S41. Not very clear about the <u>linking words</u> and reading of stressed words</p>	
<p>S2. When I listen to a sentence, sometimes <u>I concentrate on those unfamiliar words</u>, which leads to missing the rest of them.</p> <p>S4. As for the long sentence, if listening carefully and there are no new words, then I have no difficulties in understanding it without new words. But if <u>there are new words</u>, I would focus on them and miss the following part, while being unable to write them down.</p> <p>S6. I am unable to concentrate on my listening when I focus on some <u>unfamiliar words</u>, and then miss the <u>following part</u>.</p> <p>S7. Most of the time if I cannot catch one or two words, all my LC will be affected.</p> <p>S9. If I cannot recognize one or two words in the middle of a CS, then I have no interests in finishing listening, especially when the speaker speaks faster.</p> <p>S10. During the process of writing, when I cannot write one of the words, my mind often pauses to think over that word. That is my reason that I often cannot remember the long sentence well.</p> <p>S15. Sometimes I miss one or two words because of long sentence</p> <p>S23. The state of listening is not good as I often still think about the previous sentence which miss the</p>	<p>To guess one or two words, resulting in missing the following part. (27)</p>

following chunk or sentences.	
S30. Poor memory. For example, I often forget the following part when I listen to the long sentence.	
S1. Poor short memory	Poor Memory (18)
S4. Easily forget the vocabulary having been heard.	
S7. Poor memory especially for the longer sentence, cannot write it down	
S8. Poor memory. When I listen to the long sentence, I can catch the whole sentence but forget some of the words when I write them down.	
S10. Poor memory. For example, I often forget the following part when I listen to the long sentence.	
S12. Met some new words or words I could not spell.	New words & spelling (15)
S13. I knew some words, yet could not spell them well.	
S16. I think the size of vocabulary is the big problem as in most of the time I can understand 70% passage or sentences, but it is very difficult to write them down. In addition, I was stuck in spelling, I could not write down many sentences.	
S20. There are quite a number of words I am familiar with when I read, but I could not catch the linking, as I could not confirm the correct pronunciation. Knowing the meaning but could not spell them right.	
S22. Cannot catch some new or infrequent words, sometimes even if I can catch the meaning but cannot write them down.	
S25. Not familiar with the new words such as “Nanny” but can guess the word such as “sitter”.	

S26. Generally I am not familiar with some words, which lead me not judge linking words. Cannot master some vocabulary well such as “fireflies ...fire flies”	
S9. Have not taken listening seriously S13. Often cannot concentrate on listening S18. Have no confidence in my listening. S22. Cannot concentrate on listening S33. Seldom reading to remember vocabulary S34. Apt to be nervous when I cannot catch one word or sentence.	Non-intelligence factors (12)
S10. There is no English language environment. S14. No chances to get familiar with various accents around the world. S17. I am not used to transferring the meaning from English into Chinese quickly in my mind when I listen to English. Therefore, I often have a blank mind. I think it was the lack atmosphere of English speaking in our daily life that caused this situation. Even if we practice oral skills in our daily life, we still lack actual experience of talking to the native speakers. I think this is the most important reason for listening difficulties. S40.Lack of background knowledge and cannot understand the real meaning	Learning environment (10)
S11. Ignoring some details of grammar. S19. Lack of grammar knowledge S23.Lack of solid grammar knowledge	9.Grammar (6)

<p>S27: I cannot catch the whole sentence structure quickly when I meet a long sentence, which makes me miss some important message</p> <p>S31. Lack of grammar knowledge such as plural words or final. I have no any sensitive to the final.</p> <p>S33.For the complex sentence, I cannot analyse its sentence structure.</p>	
<p>S6. Lack of background knowledge</p> <p>S12. Poor background knowledge makes me not understand the sentence well, so I cannot write the whole sentence</p> <p>S27.Sometimes lack of background knowledge.</p>	<p>10.Context knowledge (4)</p>
<p>S15. The speaker speaks too fast.</p> <p>S28. The speaker reads so fast that I cannot respond quickly</p> <p>S25.Poor ability of hand-writing</p> <p>S36. Sometimes I am familiar with some words, but my handwriting cannot catch up with the speed of speaking</p> <p>S14; I cannot master the whole meaning of the passage well when I listen to the whole passage for the first time.</p> <p>S34. I am not familiar with the proper names and people's name</p> <p>S37. Lack listening techniques. When I listen to the longer sentence, I cannot catch them well, but only part.</p>	<p>11. Speaker (3)</p> <p>12. hand writing (2)</p> <p>13.Understanding passage partly (1)</p> <p>14.Proper names and people's name (1)</p> <p>15. Listening tips (1)</p>

Appendix O: The strengthened aspects that participants will focus on in future to improve their listening skills

	Frequency	The Types of Reasons
<p>S2 Memorize more frequent listening vocabulary to improve my ability to deal with CS of faster pace. On one hand, I will <u>enlarge listening vocabulary</u>. On the other hand, I will train my English rhythm and short-term memory to strengthen my phonological knowledge.</p> <p>S3 I think I should focus on the following three aspects: phonology, vocabulary and memory.</p> <p>S7 Remember/<u>enlarge vocabulary</u>.</p> <p>S10 I think I should focus on <u>vocabulary</u> and sentence structure as sometimes when I think about some words, I often forget the whole meanings of the sentences because of poor sense of sentence structures. The result is that I just write a few words.</p> <p>S13 Practice more on <u>reading vocabulary</u>, passages and try to read passage with linking like native speakers and learn where I should pause when reading.</p> <p>S18 Read more and recite some good articles.</p> <p>S22 <u>Enlarge my vocabulary</u>.</p>	37	Enlarge listening vocabulary (37)

<p>S29 <u>Enlarge my listening vocabulary</u> at the same time review the words I have learned.</p> <p>S5 Improve my ability of recognition vocabulary.</p> <p><u>S6 Enlarge my listening vocabulary</u></p> <p>S19 I think if I can catch the main idea of the whole passage, then I would have a good command of listening. Because it would be very helpful to catch the sentence and vocabulary, if I can master the main idea from the holistic perspective. So I think the first step and also the key point is to catch the meaning generally. And then I will focus on the transitional words is they are the key to connect the sentences. Finally, I focus on the vocabulary which are my focus in future study as the listening vocabulary is the foundation of listening. If people have limited listening vocabulary, it will never reach the good standard of listening even if he/she has a good command of grammar. Anyway <u>I will mainly focus on the listening vocabulary and sentence structure is my minor focus.</u></p> <p>S38 <u>Enlarge my listening vocabulary.</u></p>	
<p>S4 Focus on my pronunciation and phonological knowledge.</p> <p>S5 Train me to have pronunciation of native speakers.</p> <p>S7 Have a good habit of listening over note-taking.</p> <p>S8 Improve my sense of rhythm.</p>	<p>Focus on my phonological knowledge (35)</p>

S10 Strengthen my phonology and vocabulary.

S12 I don't think one-semester learning is very interesting but I really made progress in linking and sentence rhythm. Actually this study has improved my awareness of linking and sentence rhythm. I will strengthen these two parts.

S15 Focus on marking the sentences.

S17 I think I should focus on the following three aspects: phonology, vocabulary and memory
Improve my rhythm: watch some comedy

S18 Familiar with different accents around the world

S20 Improve my pronunciation.

S21 Focus on the pace of speaker and syllables and try to know the important information in various listening passages.

S23 Insist on practice listening every day, and try to imitate the pronunciation and tones of native speakers.

S25 Review all the words I have learned.

S29 Listening to some sentences of weak forms.

S33 Get familiar with stressed and unstressed words and sentences.

S36 Memorize more frequent listening vocabulary to improve my ability to deal with the speech of faster pace. On one hand, I will enlarge my vocabulary. On the other hand, I will train my English rhythm and short-term memory to strengthen my phonological knowledge.

S9 Focus on recognise those words which contain weak form or linking.

S14 Continue to solve my linking problems, esp recognition of -ed endings and s in plural forms.

S26 Linking is still my problem and need more practice.

S31 Try to be familiar with rules of linking and reduced form

S35 Focus on linking problems.

S37 Focus on linking and spot dictation

S40 Practice more on those phrases of linking.

S41 Practice more on reading vocabulary, passages, and try to read passage with linking like native speakers and learn where I should pause when reading.

<p>S1 Improve my ability of short-memory.</p> <p>S5 I think I should focus on the following three aspects: phonology, vocabulary and memory focus on my short memory.</p> <p>S6 Improve my ability of remembering whole sentences.</p> <p>S9 Listening to audio of novel as the sentences of novel are long and train my memory</p> <p>S13 Memorize more frequent listening vocabulary to improve my ability to deal with CS of faster pace. On one hand, I will enlarge my vocabulary. On the other hand, I will train my English rhythm <u>and short-term memory</u> to strengthen my phonological knowledge.</p> <p>S24 I can understand the main ideas of the passage but it is very difficult to write them down as I listen to, I forget them easily.</p>	<p>Short Memory (18)</p>
<p>S39 Improve my background knowledge of listening</p> <p>S41 Background: more reading to enrich my world knowledge.</p> <p>S5 Try to create a real context in our daily life to communicate with people in English.</p> <p>S7 Make Me in the English learning environment such as seeing English films and English radios.</p> <p>S14 Pay more attention to the context knowledge</p>	<p>Background knowledge (15)</p>

<p>S10 I think I should focus on vocabulary and sentence structure as sometimes when I think about some words, I often forget the whole meaning of the sentences because of poor sentence structure. The result is that I just write a few words.</p> <p>S15 Be familiar with grammar in listening and pay more attention on grammar habits</p> <p>S22 Be familiar with various sentence structures.</p> <p>S26 Improve grammar</p>	Grammar (4)
<p>S8 The most important thing is to train my learning interests and habits by communicating with others and adjust my internal heart and then things will become simple.</p> <p>S32 To improve the ability of short hand. Train the ability to seek the important words.</p>	Non-intelligent factors (3)
<p>S3 Practice more listening exercises</p> <p>S11 Familiar with the speed of speaker.</p> <p>S19 Read the listening materials when I listen to.</p>	Practice more (2)